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## Journal of Business and Management

*Editors*

Amy E. Hurley-Hanson, Ph.D.  
Cristina M. Giannantonio, Ph.D.

*Special Issue:*  
**AUTISM IN THE WORKPLACE**

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# Journal of Business and Management

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# Autism in the Workplace: Assessing the Transition Needs of Young Adults with Autism Spectrum Disorder<sup>1</sup>

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*Over the next decade, close to half a million people with Autism Spectrum Disorder (ASD) will reach adulthood. Research suggests that the career and life outcomes for young adults with ASD are poor as compared with those of the general population. Nevertheless, there is relatively little research on the work experiences of young adults with ASD that focuses on their career aspirations, preparation for work, career experiences, and the barriers associated with their transition into the world of work. Given the large numbers of young adults with ASD who are exiting secondary school and vocational training programs, it is imperative to understand the issues associated with their transition into the world of work. The purpose of this study, which utilizes a survey questionnaire and focus group, is to assess the transition needs and experiences of young adults with ASD as they prepare to enter the workplace. The results indicate that young adults with ASD face significant transition barriers when navigating the world of work and have certain transition needs. Policy implications for the transition needs identified are presented.*

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<sup>1</sup>This project was funded by Chapman University's Thompson Policy Institute on Disability and Autism

According to Autism Speaks (2016), “Autism spectrum disorder (ASD and autism are both general terms for a group of complex disorders of brain development. These disorders are characterized, in varying degrees, by difficulties in social interaction, verbal and nonverbal communication and repetitive behaviors.” The World Health Organization (2013) describes ASD as “neurodevelopmental impairments in communication and social interaction and unusual ways of perceiving and processing information” (p. 7). As such, individuals with ASD often have difficulty in understanding the thoughts, intentions, and emotions of others (Bruggink et al., 2016) and in regulating their own emotions. These challenges may create transition and employment issues for young adults with ASD (Samson, Huber, & Gross, 2012).

According to the Centers for Disease Control and Prevention (CDC, 2016), 1 in 68 children are on the autism spectrum and the presence of ASD is four to five times more common in boys (1 in 42) than in girls (1 in 189). The number of people affected by ASD is estimated to be in the tens of millions worldwide, with 3.5 million in the United States (Autism Speaks, 2016). Further, over the next decade, close to a half-million people with ASD will reach adulthood (CDC, 2016), and it is estimated that 70% of these young adults will be unable to live independently (National Autistic Society, 2016).

Currently, the cost of autism services in the U.S. exceeds \$236 billion annually (Buescher et al., 2014), and this number is expected to rise to \$1 trillion by 2025 (Leigh & Du, 2015). Supporting an individual with ASD may exceed \$2 million over his or her lifetime (Buescher et al., 2014). In addition, indirect costs, which are more difficult to measure, are expected to increase and include lost income and career opportunities due to movement in and out of the labor force by the individual with ASD as well as the cost of lost productivity by the individual with ASD and his or her parents.

The most recent unemployment statistics for adults with ASD show that 85% are unemployed and that 69% of them want to work (National Autistic Society, 2016). The cost of these adults not working contributes to the financial toll on their families and society. Even when individuals with ASD do work, employment outcomes for adults with ASD have been found to be lower than those for the general population (Jennes-Coussens, Magill-Evans, & Koning, 2006; Taylor, Henninger, & Mailick, 2015).

Further, research suggests that those individuals with ASD who secure employment face significant challenges in maintaining employment (Baldwin, Costley, & Warren, 2014; Lorenz & Heinitz, 2014; Richards, 2012; Roux et al., 2013), and, as noted, it is likely that their career path may involve multiple movements in and out of the labor market. Nevertheless, there is little research on the emotional and psychological effects of multiple job losses and repeated movement in and out of the labor market on individuals with ASD and their families.

Finally, quality of life outcomes for young adults with ASD have been found to be lower than those of the general population. Taylor and Seltzer (2011) found that these young adults are three times more likely to have no daytime activities compared to individuals with other disabilities (Taylor & Seltzer, 2011). In addition, a survey of 200 families of adults with ASD found that 85% still lived with their parents, siblings, or older relatives (Gerhardt & Lanier, 2011). Employment is a critical component for adults with ASD to become engaged members of society and to lead lives of quality and dignity.

A primary concern for parents is whether their children with ASD will be able to live independently as well as be fully employed and able to support themselves financially.

Easter Seals (2008) surveyed over 2,500 parents of children with and without ASD. The results indicated that quality of life was a much larger concern for parents of children with ASD than for parents of children without ASD. The parents of children with ASD were significantly more concerned about what would happen to their children when they (the parents) die, and many of their fears were financial. Parents of children with ASD were worried that the cost of caring for someone with ASD would drain the family's finances and be detrimental to the financial future of the other siblings. Of the parents of children with ASD, 61% reported having to incur debt to meet their family's needs, as compared to 46% of parents of children without ASD.

As noted, little is known about the career experiences of young adults with ASD (Johnson & Joshi, 2016). In particular, it is very difficult to track individuals with ASD once they leave high school as there is little coordination among the agencies that provide transition services to assist these young adults and their families with career planning (Pellicano, Dinsmore, & Charman, 2014). Young adults with ASD are protected by the Individuals with Disabilities Education Act (IDEA), a federal law that calls for the provision of services to children with disabilities until the age of 22 or when they graduate from high school (U.S. Department of Education, 2004). Services provided under this law enable young adults to be placed in work situations or to participate in work programs through their school districts. There is great concern about the lack of services available for young adults with ASD because once they reach the age of 22 they are no longer protected by IDEA (Roux, 2015). Roux refers to this as the *services cliff* and states that there is an urgent need to create effective transition planning and programming for these young adults.

The transition process, with its new tasks and experiences, may be particularly challenging for young adults with ASD. Many will lose the services provided by their school districts just as they begin to enroll in post-secondary education programs or enter the work force. Further, most will continue to need some type of support to reach their educational, career, and life goals.

In addition to creating transition planning and programming, there is an urgent need to identify the transition needs of young adults with ASD and the barriers that they may encounter. It is important to understand transition needs, specifically from the perspective of the young adult with ASD as well as from the perspective of parents and caregivers. Anecdotal evidence of the barriers faced by young adults with ASD may be found on the websites of several nonprofit organizations and autism support groups (e.g., [autism.org.uk](http://autism.org.uk); [hloom.com](http://hloom.com); [sunderland4autism.com](http://sunderland4autism.com)). The need for support and services for these young adults while navigating the employment world is a consistent theme identified by parents, caregivers, and young adults with ASD.

A comprehensive study of the transition from high school to early adulthood was conducted by the National Center for Special Education Research (NCSER, 2007). The National Longitudinal Transition Study 2 (NLTS2) concerned the educational, vocational, social, and personal experiences of students in special education programs as they made the transition from high school to early adulthood. It should be noted, however, that the focus was on young adults with disabilities in general and not the

transition needs specific to young adults with ASD. The key results indicated that secondary school students with ASD take a range of courses, including academic, vocational, and life skills. Virtually all secondary students with ASD take at least one non-vocational special education course during a semester; have some type of accommodation, modification, support, or technology aid; and receive a variety of related services for various needs and functional issues.

Additional findings from the NLTS2 study indicated that some young adults with disabilities plan to attend a two- or four-year college or to enroll in postsecondary vocational training. The study also indicated that their transition goals include gaining competitive, supported, or sheltered employment. Moreover, the results showed that living independently is a transition goal for most students with disabilities and that some students were working toward maximizing their functional independence or enhancing their social or interpersonal relationships. These results suggest that students with disabilities have a need for transition services, including accommodations to help in their pursuit of educational goals as well as vocational services such as vocational training, job placement, or support services to help them to identify and secure employment as well as to live independently (NCSE, 2007).

Therefore, the purpose of the current study is to explore the career experiences of young adults with ASD with a focus on their career aspirations, preparation for work, and career experiences, as well as the barriers associated with their transition into the world of work. Specifically, the study sought to identify the transition needs of young adults with ASD using both a survey questionnaire and a focus group. A review of the literature in each of these areas is presented in the following section.

## Review of the Literature

### *Career Aspirations*

Although much is known about the early career stages of young adults, research suggests that adults with disabilities have career paths that differ from those of the mainstream populations that have been commonly studied in the management literature (Heslin, Bell, & Fletcher, 2012; Zikic & Hall, 2009). Further, very little is known about the career stages and experiences of young adults with ASD, including their career aspirations, career exploration activities, the school-to-work transition, the job-search-and-choice process, actual work experiences, and the associated transition needs for support and services throughout these stages.

Super (1957, 1980) suggests that that our occupational choices are how we define ourselves and actualize our self-concept. Super's model of career development, particularly the growth and exploration stages, has been used to understand how adolescents and young adults develop into members of the workforce. Super believes that individuals develop their self-concept and ideas about the world of work during the growth stage (birth to age 14), which is followed by the exploration stage, during which the young adult (ages 15–24) "tries out" different occupations through classes, hobbies, and work experiences. These experiences help the individual to refine his or her conception of different occupations and to assess whether these would be a good fit with his or her skills and preferences. Very little is known, however, about

the exploration stage of career development for young adults with ASD, particularly with regard to their career aspirations, knowledge of the skills, education, and training needed to pursue specific occupations, and a general understanding of the world of work.

### *Preparation for Work*

Typical activities in the preparation-for-work stage include obtaining relevant education and training; participating in internships, hobbies, and other paid and unpaid work; and preparing for the job-search-and-choice process by researching employment opportunities, preparing one's resume, and practicing for interviews. It is difficult, however, to track the preparation for work activities of young adults with ASD, and there is very little research on the job-search process of young adults with ASD (Paul, Laird, & Tune, 2016). The limited research available has found that 59% of young adults with ASD, aged 16 years or older, have not yet looked for work, while 75% of their same-age peers are already working (Easter Seals, 2008). Other research suggests that many young adults with ASD have difficulty finding jobs, completing post-secondary courses, and supporting themselves to live independently after high school (Gerhardt & Lainer, 2011). In addition, young adults with ASD are less likely to use their social connections to find a job (Baldwin et al., 2014). Contributing to the difficulty of finding a job, adults with ASD have been shown to have low self-efficacy in terms of their belief that they can work (Lorenz, 2016; Lorenz & Heinitz, 2014), and this belief may be reinforced if they have negative work experiences (Heslin et al., 2012). Finally, efficacy beliefs are highly related to occupational choice (Bandura et al., 2001).

Some studies have considered the variables that affect the ability of an adult with ASD to be employed. One study found that annual household income, social skills, parents' education, graduation from high school, receiving career counseling during high school, and having the school maintain contact during post-secondary training programs are all significantly positively associated with a young adult with ASD's ability to be employed (Chiang et al., 2013). Another study found that high school employment experiences and high parental expectations of post-high school employment were the strongest predictors of employment of young adults with ASD (Wehman et al., 2015).

To achieve these outcomes, young adults with ASD need to have a transition plan and access to transition services. Transition services are a "coordinated set of activities" for youth with special needs that are intended to focus on improving vocational and functional skills (U.S. Department of Education, 2004). These activities should facilitate successful movement to greater levels of independence, including transitioning to post-secondary education, vocational training, employment opportunities, independent living, and positive community participation. The transition-planning-and-intervention process often includes assessment, skills instruction, and community-based experiences. There are few programs available, however, that focus on these youths (and their parents) having meaningful involvement in the employment process.

### *Career Experiences*

Adults with ASD may typically have more difficult career experiences than those of their peers. Studies of young adults with ASD found that these individuals have much higher rates of unemployment than the general population (Baldwin et al., 2014; Krieger et al., 2012; Nord et al., 2016; Richards, 2012; Roux et al., 2013; Scott et al., 2015; Shattuck et al., 2011). Estimates of the unemployment rate for individuals with ASD are mixed, but research has shown that many individuals with ASD have never been members of the labor force (Cidav, Marcus, & Mandell, 2012). Shattuck et al. (2012) found that 35% of young adults with ASD have never held a job or attended post-secondary education. The National Autism Society (2016) estimated the unemployment rate to be as high as 85%, while a study of 200 transition-age young adults with ASD found that 81% were unemployed (Gerhardt & Lanier, 2011). A small study of young adults with ASD and IQs above 50 found that only 11.76% were employed (Howlin et al., 2004). One study showed that approximately half of young adults with ASD worked for pay after high school (Roux et al., 2013). The same study also found that the odds of ever having a paid job were higher for those who were older, from higher income households, or who had better conversational or functional skills (Roux et al., 2013).

What might account for the differences in unemployment rates reported for adults with ASD? One explanation is that the variance may be due to differences in the populations sampled. Another explanation is that both full- and part-time employment are often included when calculating unemployment rates. In addition, individuals with ASD are often given fewer hours of work than they would like. One study found that 74% of young adults with ASD who worked were doing so only on a part-time basis (Gerhardt & Lanier, 2011). Baldwin et al. (2014) found that adults with Asperger's Syndrome, as compared to the general population, were more likely to work part-time. Finally, adults with ASD tend to be underpaid compared to their peers without ASD (Ballaban-Gil et al., 1996; Howlin et al., 2004; Roux et al., 2013).

It also is important to take into account the type of work included in the definition of employment. One study found that 56% of the individuals considered employed were working in day programs or sheltered workshops (Taylor & Seltzer, 2011). Howlin et al. (2004) found that 12% of individuals with ASD worked in supported, sheltered, or volunteer employment and that 62.5% were in some type of day program. Research also has shown that young adults with ASD are more likely to be overeducated and overqualified for their jobs, meaning that the work that they do is beneath their capabilities (Baldwin et al., 2014). Further, they work in a limited number of occupations (Roux et al., 2013). Finally, they are more likely to be underemployed (Baldwin et al., 2014; Krieger et al., 2012; Nord et al., 2016; Paul et al., 2016; Richards, 2012; Roux et al., 2013; Scott et al., 2015; Shattuck et al., 2011).

Adults with ASD also face significant challenges in maintaining employment (Baldwin et al., 2014; Lorenz & Heinitz, 2014; Richards, 2012; Roux et al., 2013). When they experience conflict or stress at work, adults with ASD may quit or miss work without prior notice (Richards, 2012). They also are more likely than their peers without ASD to change jobs frequently and, as a result, to experience higher levels of ongoing stress and financial concerns (Baldwin et al., 2014).

### *Transition Barriers*

During the transition process, young adults with ASD face transition barriers that are not seen among the general population (Seitz & Smith, 2016). One such barrier is the lack of coordination between the agencies that support young adults with ASD. For these young adults to be employed and contribute positively to society, these agencies need to collaborate. Further, although there are organizations that focus on the school-to-work transition of young adults with ASD, little is known about quality and impact of the services received. Another barrier is that many parents do not have the necessary information to navigate the transition process. One study found that, among families surveyed, 67% had no knowledge of available transition programs, 83% relied on family members as their primary source of transition planning assistance, and 78% were unfamiliar with agencies or professionals that might assist with job placement (Gerhardt & Lanier, 2011). A third barrier is the absence of qualified staff to work with young adults during transition (NYCA, 2012).

## **Purpose of the Study**

Research suggests that young adults with ASD experience significant difficulty in transitioning to work, but little research has examined the transition barriers and transition needs from the perspective of young adults with ASD or their parents and caregivers. Thus, the purpose of this study is to assess the transition needs and experiences of young adults with ASD as they prepare to enter the workplace. This study focuses on the current state of employment of youth with ASD while identifying the availability of services which are required to support improved employment outcomes, along with associated gaps in those services. Data were collected on career aspirations, preparation for work, career experiences, and transition barriers, as experienced by young adults with ASD. To this end, a methodology was used that included a survey questionnaire and focus group.

## **Method**

### *Survey*

The survey instrument used to assess the transition barriers encountered during this process was designed using the theoretical framework of the three-step career process of career aspirations, preparation for work, and career experiences. The instrument consisted of 37 questions, derived from a review of the literature. The number of questions offered to each respondent varied based on his or her characteristics. For example, if a respondent identified him or herself as a parent, the respondent was presented with slightly different questions than if he or she identified him or herself as a person with a disability. Standard automatic branch logic was used to allow for consistency among respondent groups. Based on the results of a pilot study of 18 individuals, stratified to the targeted respondent groups, the average time to complete the survey was 20 minutes. Face validity of the survey questionnaire was improved through a systematic feedback review of the instrument by administrators from local service provider agencies and parent support groups. The survey was administered in English and Spanish.

After obtaining IRB approval, the survey instrument was converted into the electronic survey platform Qualtrics for which a unique resource locator (URL) was created. Quantitative and qualitative data were collected. Quantitative data were obtained primarily through forced-choice or ranking questions, and an “other” or short text box was available for certain questions so that respondents could provide a more detailed response. The survey questionnaire cover letter assured respondents that their responses would be anonymous. The anonymous nature of the survey, however, precluded any follow-up by the investigators.

**Survey sample.** The county regional center, two local parent/caregiver support groups, and a community mental health service agency that support transition-aged youth, agreed to participate in this project. Each agency and group agreed to send to individuals on their proprietary lists an email invitation that contained a URL and an invitation to participate in the study. The survey was sent to the caregivers or family members of individuals with ASD. Young adults with ASD were also eligible to complete the survey. The survey link was active and open for 12 weeks. Participants were able to direct any questions or concerns to the authors and were fully informed, in the survey cover letter, that, by doing so, their identity would be revealed. The authors received no questions on how to complete the survey instrument.

Because the survey research methodology used an anonymous analytical process, the researchers had no knowledge of who responded; thus, only the demographic categories that the respondents provided were used in the study results. The survey cover letter contained information on the purpose of the study, the researchers and their affiliations, and the lack of risk associated with participation. The letter also stipulated that proceeding with the survey constituted consent to participate. Respondents were able to skip any question or exit the survey at any time.

A total of 200 respondents completed the survey. Of those respondents, 182 self-identified as caregivers and 18 as young adults with ASD. The responses from the 18 young adults were not included in these results due to the small sample size. Nearly 80% of survey respondents ( $n = 144$ ) identified themselves as mothers. The majority of participants identified as White (76%), followed by Hispanic or Latino (19%). Caregivers were defined as the parent, grandparent, sibling, relative, or other primary caregiver of a young adult with ASD. Of the young adults with ASD, 50% were between the ages of 15 and 20, 37% were between the ages of 21 and 25, and 14% were between the ages of 26 and 30. In addition, 82% were male.

**Generalizability.** Although the total respondent group comprised only 200 individuals, the composition of the group was generally comparative to that of the U.S. population within the targeted demographic categories. The sample's percentage of Hispanic or Latino participants (19%) compared to the national rate of 18%, and the proportion of respondents who identified as White (76%) compared to 62% nationally (U.S. Census Bureau, 2015). The main variation was the very low proportion of individuals who self-identified as Black, at 1%, as compared to 12% nationally. It should be noted that these variances are commonly seen in ASD prevalence studies, as an ASD diagnosis is much more prevalent among those who identify as White and least prevalent among those who identify as African American or Black (Mandell et al., 2007; Tek & Landa, 2012). The reported racial disparities in ASD identification among

minority children are troubling; nevertheless, the survey sample demographics were consistent with national population norms for ASD.

**Focus group.** A focus group was conducted with the caregivers of young adults with ASD. The topic of the focus groups was the career experiences of young adults with ASD. Participants were introduced to the general topic to be discussed and were asked for their experiences with the transition process. Although participants were prompted to elaborate on their responses, the format was generally conversational and informal to help families to feel comfortable and to elicit honest responses.

The focus group was conducted at a caregiver support group-hosted social event for young adults with ASD. The support group holds such events four times a year and draws a large group of young adults with ASD and their caregivers. The caregivers are encouraged to spend time with other caregivers while the young adults participate in supervised social interactions with their peers. This group was chosen based on the large number of participants that it draws, the private space provided for caregivers whose young adults are attending the event, and the range of young adults who attend (in terms of general ability levels and support needs).

**Focus group sample.** Approximately 35 caregivers participated in the focus group. Although all participants were encouraged to share their experiences, some contributed more or responded to the prompts more frequently than did others. All responses were recorded. During introductions, parents informally provided their background and some basic demographic data. Based on the information provided, we determined that the majority of participants were mothers of young adults with ASD. Approximately 15% were fathers, and approximately 5% were other relatives (e.g., aunts, grandparents, adult siblings).

## Results

Data from the survey and the focus group provided insight into caregivers' perceptions of the status of employment and employment services for people with ASD, the specific skill areas that require additional intervention, and services and supports that are still needed. These issues are discussed from the perspective of what hinders and facilitates improved employment outcomes for youth with ASD, specifically career aspirations, preparation for work, career experiences, and transition barriers that interrupt the career development process.

### *Career Aspirations*

The survey results indicated that 40% of the young adults did not show any interest in pursuing a specific job or career at some point in their lives. The caregivers of young adults with career goals stated that many of these young adults did not have realistic goals. Specifically, 65% reported that these goals were "not at all realistic or slightly realistic." When caregivers were asked whether the young adult appeared to have a realistic view of the world of work, 61% reported that the young adults had a "not at all realistic" or "slightly realistic" view. When asked whether the young adult understood the education and training required to pursue a career, 72% of the caregivers reported that they had "no understanding" to "some understanding" and

that only 27% understood most or all of the requirements.

During the focus group, many of the caregivers reiterated these concerns. They felt that the young adults did not have realistic career goals or a realistic sense of work because they were not provided with the opportunities needed to understand their options, explore potential work environments, or gain hands-on experience. Not only did parents feel that their children were not having the same conversations about their future careers and opportunities as were their peers in school, they also felt they needed a different approach to learning about the world of work.

Participants stated that people with ASD typically “learn by doing.” Specifically, these young adults need to be taught skills in the environment in which they will use them and often need to be exposed to actual experiences as a means of visualizing or understanding what work might be like and how they might fit into the work of world. Parents discussed what they felt was needed to adequately train and prepare their children for employment, including volunteering, job shadowing, and working with support and supervision, which are discussed below.

### *Preparation for Work*

Preparation for work ideally occurs across the lifespan in various skill areas. Caregivers who completed the survey questionnaire noted that the services most needed to prepare young adults for work including help in finding a job, training in specific job skills, and training in the life skills needed for work. Preparation for work occurs over many years across multiple settings (e.g., schools, communities, colleges). With regard to early preparation, the survey results indicated that many of the young adults participated in extracurricular activities in the community (84%). In addition, approximately 40% had volunteered in some capacity, with over 45% who had served as volunteers for over three years.

During the focus group, participants indicated that they often tried to involve their child in community activities and that this required a lot of time and dedication. Caregivers noted that participating in community programs was more difficult for some young adults due to certain problem behaviors that interfere with their ability to safely interact with others. A few participants stated that volunteering had been helpful for their young adult to develop necessary employment skills and to create potential job opportunities. Parents felt that early preparation in life skills and academic skills was essential but also noted that this was significantly lacking in their communities. Parents reported a desire for training and skill-building opportunities to occur much earlier than high school and certainly before the youth completed his or her high school program.

Of those who finished high school, 80% had participated or continued to participate in some form of post-secondary education or training. Approximately 54% were in community college, 13% in a four-year college, 13% in a specialized college for students with disabilities, and 7% in a vocational training program. In addition, 13% indicated they participated in some other post-secondary education opportunity. Although it is promising to see that many young adults continued their education or training after high school, the results indicated that only 13% had completed their programs, 51% were still attending, and 25% did not complete the program. Caregivers reported that 26% of the young adults were in a job-related training program and that 45% were paid while in the program.

Responses in the focus group echoed those for the survey questionnaire. Many caregivers reported that their young adult was attending community college, with a few in other programs such as vocational school or specialized colleges. Caregivers reported that vocational programs were often expensive and not financially sustainable for the family. Many chose the community college setting due to the variety of options in terms of education and training, as well as the cost. Of those in community college, some were in certificate programs, while others were working toward completing an associate's degree at a slower than typical pace.

The majority of the parents stated that their young adult was struggling to be successful in post-secondary education settings. They felt that these struggles were due to a lack of the general life skills required to be successful in an academic setting (e.g., social skills, planning/organization skills) or a deficiency in the academic skills required. The caregivers further stated that, generally, there was not enough support provided for youth to be successful in these community college programs, unless the program was developed specifically for youth with disabilities. Many young adults with ASD are accustomed to an adequate level of services and support while participating in school district programs, and much of this support is no longer available once they complete high school and attend post-secondary education programs. Those who have made some progress in these settings attribute that development to supportive teachers or staff members, rather than to the education system being set up to support success.

The job search is the final step in moving toward the world of work and typically transpires after some early preparation has occurred. The survey data indicated that, of those working, approximately 58% had found their job through a support agency such as a regional center, the department of rehabilitation, or their school district. In addition, close to 23% found work through personal relationships, such as family or friends. Focus group participants explained that finding jobs for their young adults was extremely challenging and felt that, unless they created the opportunities themselves through their personal connections, the opportunities were extremely limited.

Of the young adults who were unemployed, over half (53%) had not used any approaches (e.g., networking with family or friends, responding to job listings or advertisements) or available services to find employment in the previous six months. In addition, caregivers who completed the survey reported a lack of interviewing skills, which significantly hinders one's ability to obtain employment. This was echoed by the focus group participants, who also indicated that, after multiple failed attempts at obtaining employment, many of their young adults had "given up" and were unable or unwilling to continue to experience this form of rejection.

### *Career Experiences*

To enhance outcomes for young adults with ASD, it is crucial to understand the experiences of those who have been or continue to be employed. Of the survey participants, 36% worked at some point. Specifically, 89% had held one to three jobs, and 75% had worked more than a year. Approximately 22% of all participants were currently working for pay. Of these, 43% were working part-time and indicated that they would like to work more hours. In addition, 88% of those who were working were earning minimum wage or higher. Nevertheless, 65% of those who were working did

not receive any benefits (e.g., sick pay, holidays, retirement).

When asked on the survey questionnaire about the most challenging issue that young adults face, respondents indicated that finding employment that allows for financial independence was the number one concern. This finding was consistent with the focus group data. Focus group participants clearly communicated that, as a community, they needed to have jobs available to young adults with ASD that provide a “livable wage” and benefits. This was particularly important because many of these young adults have additional medical and mental health complications that may not be adequately covered by government-subsidized insurance programs.

The second most challenging area for families was “finding a work environment that is supportive of a person with a disability.” Despite the widely shared perception of inadequate acceptance and support, those who were working did report some level of support. Of these participants, 68% reported that a support agency had stayed in touch with them to check on their job progress, and 50% reported that they had received some accommodations or services from their employer due to their disability. Among the young adults with ASD, 66% indicated to their caregiver that they like their job very much. Focus group participants stated that, when their young adult is able to work in an environment in which their passions, interests, and skills match the needs of the job, they are much more successful. Participants were concerned, however, that many support programs and related job opportunities were not matched to their young adult’s skill set. They noted that some youths were put in positions that directly conflicted with their skills and interests (e.g., placing a person who struggles with social communication in a customer service position).

### *Transition Barriers*

Although all young adults face obstacles as they move through the career development process, young adults with ASD face multiple barriers that are particularly detrimental to their career progress. These barriers include mental health issues and other co-occurring conditions, a significant decrease in services following high school completion, and a lack of communication and collaboration across stakeholders and settings.

The survey data indicated that ASD co-occurred with other diagnoses (not including strictly medical conditions) in 82% of cases. The most frequently co-occurring disorders were mental health-related, such as depression or anxiety. Participants in the focus group discussed the impact of these mental health challenges on employment. They talked about their young adults’ experiences with depression related to multiple experiences of “failure” throughout their academic careers, in their social experiences, and, now, in their adult lives. These multiple experiences of failure often lead these young adults to “shut down” and no longer want to try or put themselves in a position for future rejection, which ultimately leads to a loss of motivation to obtain employment. They also talked about how overwhelming it was for young adults with ASD to not know or understand what their future would be like and that many of these young adults feel anxious about what the world of work is like. The caregivers reported that many young adults avoid seeking out job opportunities or engaging in activities that they feel may overwhelm them or lead to failure. This avoidance could lead to a reduced likelihood of obtaining and maintaining meaningful work.

Related to these mental health challenges is the reduction in services that occur after high school completion. Although many students receive mental health services in school, the survey data showed a significant (50%) decline in this type of support after high school. Not only were mental health services reduced but other services that are critical for employment success were as well. For example, the survey data indicated an 83% decline in speech and language services post-high school. Further, a great deal of supervision and oversight, which is typically provided during high school, declined following completion of high school. Focus group participants stated that, if there were no supervision, they would have major concerns about their young adult's participating in the workforce in terms of safety issues. Parents reported being concerned that their young adult may not recognize dangerous situations in the workplace or in the community on the way to work. They worried that the young adults may be taken advantage of at work because they are naïve and that, if an incident does occur, they may not respond appropriately to authorities or be able to accurately report the incident due to their disability.

In addition to the steep reduction in services, there is a lack of communication and coordination across agencies and stakeholders. With regard to the employment of youth with disabilities, stakeholders can include the young adult, caregivers, school districts, and services providers as well as employers. Focus group participants reported, however, that they received most of their information about available training and job opportunities by word of mouth from other parents or by searching the internet. Information was not typically obtained by speaking with service providers or employers, which, participants felt, led to inconsistent, nonexistent, or inappropriate services. Parents also discussed the lack of communication across stakeholders, noting, "It feels like no one is talking to each other," as well as their expectation that they needed to serve as case managers to hold all of the pieces together. When there is little communication and sharing of data, services are less effective and the potential for positive employment outcomes is reduced. Participants suggested that a streamlined approach to employment communication would allow for more effective services and for a more comprehensive understanding of the appropriate steps to take toward meaningful employment.

## Discussion and Recommendations

The results of this study indicate that young adults with ASD face significant challenges when navigating the world of work. Not only is it important that these young adults find a job to obtain financial support, security, and independence but also to secure their quality of life, sense of safety, and belonging in the community. To that end, the data revealed significant needs in terms of career aspirations, preparation for work, and career experiences as well as barriers to successful transition into the world of work. Based on the needs identified in the study, recommendations for intervention and policy also are provided.

### *Career Aspirations*

It is clear that schools and parents must work together to assist young adults with

ASD to develop and explore realistic career aspirations. The concerned parties may begin this process by implementing a number of tasks early on in the child's development. These tasks can include early training in the life skills required to be a successful working adult, creating a curriculum focused on career options for youth with disabilities, having discussions about career options and pathways, and developing partnerships with employers to create hands-on career experiences and training programs.

### *Preparation for Work*

The results indicate that preparation for work should occur over many years across multiple settings (e.g., schools, colleges, communities, businesses). Preparation should focus on key areas such as training in specific job skills, training in life skills needed for work, and preparing the young adult to find a job. Although there are a number of evidence-based interventions available to help guide job skill development (Test et al., 2009), few providers are able to implement them as designed. Thus, it is important to develop policies and practices to create incentives to hire, train, and maintain staff with expertise in using these interventions with young adults across all settings. As noted, training in the life skills needed for work can occur in multiple settings and involve multiple stakeholders, and these training opportunities should focus on community involvement and volunteer participation to assist in generalization of work skills. Finally, these young adults will need skilled help in securing a job, including help in applying for jobs and interviewing skills.

### *Career Experiences*

To create an environment to facilitate career opportunities and successful career experiences for young adults with ASD, educators, counselors, and service providers must develop and implement evidenced-based practices that allow for the effective assessment and matching of interests and passions to available jobs. Further, in an effort to support employers who choose to invest in this population, employers should be trained in the benefits of hiring adults with disabilities (e.g., loyalty and reliability, work completion, rare technical skills, reputational benefit), including the financial benefits. In addition, policies that enhance incentives for businesses to employ people with disabilities are needed. Employers and other stakeholders must work together to develop effective programs that will benefit the employer, the young adult, and the community as a whole.

### *Transition Barriers*

There are multiple barriers to these young adults' smooth transition into the workplace. These include a lack of effective mental health services and problems with communication and collaboration across stakeholders, which, in turn, result in difficulties in the implementation of existing policies. Many of the difficulties related to youth's "giving up" on finding employment can be explained by mental health issues. Better mental health options need to be developed for youth with ASD who are making the transition into adulthood. Clinicians who can be appropriately trained in this specialized area need to be identified and supported, and better systems to enhance communication and collaboration across settings must be put in place.

Although there are many interventions available that focus on specific work skills, there do not appear to be evidence-based interventions that address interagency collaboration (Test et al., 2009). To have an effective collaboration process, existing evidence should be used to develop a formalized model of collaboration, and its effect on outcomes, studied. This model will assist in developing a bridge between specific policies and legislation that will guide adult services and the implementation of these policies in the community and workplace and, in turn, will help practitioners to complete ongoing developmental evaluations of the new programs to determine what works and to make adjustments as needed.

### *Limitations*

This study had several limitations. First, due to the anonymous nature of this survey, it is difficult to determine whether these participants are representative of the parents and caregivers of young adults with ASD in general. In future studies, investigators may gather more in-depth information about the participants in order better understand the representation of the sample. Second, all respondents had access to the internet and the time to complete the survey questionnaire. Therefore, this may not represent a cross-section of the potential people impacted by these issues, as respondents to online surveys may be more likely to be frequent users of computers and heavier users of the internet and email than non-respondents. In addition, families who support youth with ASD may have limited time to respond to such requests and perhaps only those who were able to find some respite were able to complete the survey. In order to address some of these concerns, investigators of future studies may consider utilizing different or varied approaches for gathering information. One recommendation for future research is to use in-depth interviews conducted across several years in order to track outcomes across development. Finally, it is possible that this sample was comprised primarily of participants who were highly motivated to complete the survey and provide feedback, perhaps because they were having exceptional difficulties with issues of employment and transition to increased independence. Future studies may consider using alternate survey methods and a random sample to control for the self-selection bias that occurs with online surveys.

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# Individualized Funding: How Disability Service Policy Can Assist in Maintaining Caregiver Employment

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*The ability of informal caregivers to maintain a job contributes to the well-being of people with autism. However, without support, many employees find it difficult to combine employment and caregiving. This study examines parallel hypotheses about whether the effectiveness of individualized funding for people with disabilities and their caregivers are associated with the likelihood of caregiver job turnover – and whether the care recipient’s type of disability moderates this relationship. Results indicate that individualized funding effectiveness is negatively related to caregiver job turnover. Furthermore, caregivers of people with autism are less likely to turnover when highly effective individualized funding is available.*

The ability of informal caregivers to maintain a job shapes the employment prospects and well-being of people with autism (Chen et al., 2015). By working, caregivers establish employment pathways for people with autism through modeling employment behaviors and work ethic, maintaining job-relevant social networks, and enhancing family socioeconomic status (Morgan & Schultz, 2012; Taylor & Seltzer, 2010). The provision of care can however interfere with a caregiver’s employment (Broady & Bainbridge, 2015b). One possibility for reducing this conflict is for caregivers to relinquish their job (Broady & Bainbridge, 2015a). However,

this adversely affects the employment prospects of people with autism, and leads to financial hardship and social exclusion (Ouyang et al., 2014; Shattuck et al., 2012).

Another way that caregivers might resolve conflict between employment and caregiving is by obtaining more flexibility in how care is provided (Laragy et al., 2015). This pathway is emphasized in recent government policy initiatives in several countries that encourage individuals to take greater control of funding support. Caregivers' attitudes towards these initiatives are generally positive with the majority expecting improvements (Broady, 2014; Carers NSW, 2014). Indeed, Broady (2014) found that caregivers believe the benefits of individualized funding would be even greater for them than for those they care for. Unfortunately, few studies have evaluated whether these expectations translate to improvements in work-related outcomes.

### **Aims and Contribution**

This study aims to examine whether obtaining greater control in how government provided funding support is used affects a caregiver's ability to maintain a paid job, and whether this relationship is contingent on the type of disability held by the person he or she cares for. By addressing these issues, the study provides four major contributions to the disability, caregiving, and work-family literature.

First, the study outlines the effects of funding flexibility for caregivers of people with disabilities. Caregivers are unpaid individuals who provide informal care and support to a family member or friend who has a disability, mental illness, drug or alcohol dependency, chronic condition, terminal illness, or who is frail (Carers NSW, 2015). Disability is defined as "any limitation, restriction or impairment which restricts everyday activities and has lasted or is likely to last for at least six months" (ABS, 2011, p. 4). Prior research on flexibility in the use of supportive funding has concentrated on its effects for people with disabilities and downplays the role of caregivers. However, this approach neglects the clear interdependency of the caregiver and care recipient with a disability. While people with disabilities actively make decisions about their own lives, these decisions are also often made collaboratively with caregivers, leading some authors to suggest that caregivers should be included in disability service providers' mandates (e.g., Mitchell, 2012). Debate exists around the extent to which providing greater control over how funding is used can simultaneously meet the needs of people with disabilities and their caregivers, particularly when conflicts between needs and/or preferences arise (Glendinning et al., 2009). This study contributes to the debate by exploring whether the flexibility to direct funding support shapes outcomes for the under-examined caregiver side of the caregiver-care recipient dyad.

Second, the study considers the role of government policy initiatives in buffering the adverse employment related effects of caregiving. Prior research has disproportionately focused on how individual and contextual predictors shape non-work outcomes such as personal well-being and the quality of care received. The current study extends this by examining how government policy affects caregivers' employment.

Third, the study contributes to the examination of two understudied populations in the management literature – people with disabilities, and their caregivers. Management research has tended to assume that employees' non-work responsibilities only take

the form of developmental assistance provided to a son or daughter. By considering a broader spectrum of non-work responsibilities, the study extends this literature and provides a platform for further theorizing and examination of employees' non-work care responsibilities.

Finally, the study makes a contribution via its exploration of whether differential effects accrue to employees based upon the disability held by the person they care for. The caregiving literature provides limited guidance on how care recipient disability type affects employment outcomes for caregivers. While some studies suggest that care recipient disability type influences employee stress (e.g., Bainbridge, Cregan, & Kulik, 2006), there has been limited examination of the relationship between care recipient disability type and employee behavioral outcomes.

### *Person-Centered Approaches and Individualized Funding*

A person-centered approach to service delivery reflects the human rights of people with disabilities as set out by the United Nations Convention on the Rights of Persons with a Disability (United Nations, 2006). This approach recognizes that people with disabilities are individuals with the right to control and choice regarding any services they receive. In light of this, disability sectors have undergone a paradigm shift away from "expert" professional control, towards individual choice and personal empowerment (Lord & Hutchison, 2003). The importance of enabling individuals to have control in organizing services to suit their individual circumstances has been widely recognized, as has the inclusion of caregivers in ensuring the successful application of these approaches (Arksey & Kemp, 2008; Lord & Hutchison, 2003).

A central component of many people-centric systems is individualized funding (Lord & Hutchison, 2003). Internationally, individualized funding packages are referred to with different terminology, including individual budgets, direct payments, personal budgets, self-managed care, consumer-directed care, self-directed care, and personalization. The basic premise of individualized funding is that funding is not directly allocated to services, but to individuals who are then able to decide which services they receive and from whom (Lord & Hutchison, 2003). The move towards individualized approaches is supported by a belief that quality individualized funding is beneficial for both caregivers and care recipients. For example, in the U.K., these arrangements have increased users' sense of control over, and satisfaction with, service delivery (Glendinning et al., 2008, 2009).

### *Individualized Funding and Care Recipients*

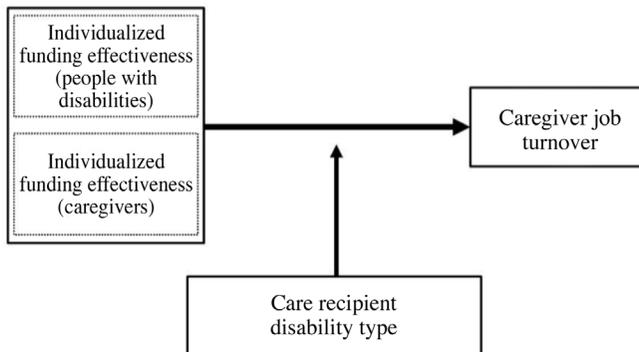
One reason that individualized funding may be beneficial is that it enables greater choice over which supporting services are accessed. This ability to direct funding to where it is has the greatest positive impact is particularly helpful because high quality support services substantially reduce the demands of caregiving and maximize the caregiver's ability to maintain a job.

Greater choice offers the prospect that selected services will be a better match to the care recipient's needs and that they will be of a greater quality (Stainton & Boyce, 2004). For example, two U.S. studies found that individualized funding provides a closer correspondence between the care recipient's needs and the assistance obtained

(Caldwell & Heller, 2007; Carlson et al., 2007). Access to highly appropriate support reduces the size of the gap between a care recipient's needs and the benefits provided by the services that are obtained. A good match also improves the quality of care received and care recipient well-being (Davidson et al., 2012). For a caregiver, a smaller assistance gap implies that less of the essential care is required to be undertaken by him or herself. Reduced demands, in turn, lessen the likelihood that caregiving will interfere with employment to the extent that giving up a job becomes necessary. This point is supported in qualitative research which finds that individualized funding increases individuals' sense of control over their caregiving role and their ability to undertake other life activities including employment (Moran et al., 2012). It is thus expected that a care recipient's ability to access high quality support via individualized funding will improve a caregiver's ability to maintain a job (Figure 1).

*Hypothesis 1: Individualized funding effectiveness for people with disabilities is negatively associated with caregiver job turnover.*

**Figure 1: Moderation Model**



### *Individualized Funding and Caregivers*

Although individualized funding can reduce the size of the gap between essential needs and supporting services, some gap is likely to persist. In this context, another benefit of individualized funding is that it improves control over how and when services are delivered. This control over the scheduling of support services enhances an employee's capacity to combine work and care and may assist the caregiver to maintain his or her job. Flexibility in scheduling support services allows an employee to make appointments at times that are the least disruptive to his or her job (e.g., at the start or end of a work day, during a lunch hour). Thus, individualized funding should improve a caregiver's ability to combine employment and caregiving roles by allowing choice in how and when support is accessed, rather than forcing caregivers to adapt their work day around services that are provided at fixed times and locations. Although few studies have considered the employment-related effects of obtaining flexibility in coordinating caregiving services, work-related flexibility is highly valued

by caregivers. For example, 65% of employees with eldercare responsibilities rated flexible working as the most desirable work-family benefit in their organization (National Council on Aging, 2003). In another study, 47% of female employees agreed that increased flexibility over their work would help them to manage employment and caregiving roles (Habtu & Popovic, 2006). Furthermore, job-related flexibility can directly affect turnover intentions. Matthews et al. (2011) found that the majority of caregivers believed that maintaining a job was difficult without work flexibility. Pavalko and Henderson (2006) identified flexibility as an important consideration for female caregivers when deciding whether to relinquish their employment. Thus, when flexibility is insufficient, job withdrawal is a likely approach “for minimizing work-role demands and better enabling the fulfilment of caregiving demands” (Barnett et al., 2009, p. 53). In summary, it is anticipated that individualized funding will allow for a better coordination of services that enhances the ability of caregivers to maintain their involvement in both employment and caregiving roles.

*Hypothesis 2: Individualized funding effectiveness for caregivers of people with disabilities is negatively associated with caregiver job turnover.*

#### *Care Recipient Disability Type*

Compared to parents of typically developing children, caregivers face greater demands that arise from financial burdens and restrictions in social activities (Matthews et al., 2011). For example, accessing the specialized educational and health services needed by children with disabilities is particularly difficult (Strunk et al., 2014). These demands threaten caregivers' personal resources (e.g., time, energy) and complicate efforts to accommodate the simultaneous demands of employment (Matthews et al., 2011). In turn, this contributes to lower physical and mental health (Hoefman et al., 2014). These experiences are consistent with Hobfoll's (1989) Conservation of Resources Theory which outlines that the demands of multiple roles threaten personal resources and contribute to stress. Caregivers thus experience high levels of stress because they have few opportunities to develop, protect, and reinstate their resources (Matthews et al., 2011).

The stressors experienced by caregivers are important because Spillover Theory outlines that stress can ‘spillover’ from the work to the non-work domain and vice versa (Frone, Yardley, & Markel, 1997). Thus, caregiving stress may adversely affect work-related attitudes and behaviors. For example, one study found that 25% of caregivers of children with disabilities had reduced working hours or quit their jobs for caregiving reasons (U.S. Department of Health and Human Services [HHS], 2007). Another found that 48% of caregivers left the workforce in order to provide care, and 27% were fired from a job due to caregiving-related work intrusions (Rosenzweig & Huffstutter, 2004).

Caregiving responsibilities vary widely and one of the most important individual characteristics that determines the burden of caregiving is the care recipient's type of disability (Pinquart & Sorensen, 2003). The type of disability shapes the care recipient's level of impairment and influences the tasks a caregiver undertakes. One especially large group of caregivers is those who assist people with autism. The neurodevelopmental

condition of autism manifests via the presence of impairments in social interaction and communication, and in restricted, repetitive, and stereotyped patterns of behavior, interest, and activity (Lord & Spence, 2006). People with autism often exhibit internalizing behaviors such as anxiety and depression, and externalizing behaviors such as aggression and defiance (Rivard et al., 2014). As a consequence, caregivers of people with autism experience a relatively high level of caregiving demands (Hoefman et al., 2014). Hayes and Watson (2013) found that caregivers of children with autism experienced particularly high levels of stress and argued that this stemmed from low adaptive functioning and behavioral problems. Caregivers of people with autism also experience greater stressors due to the challenges of obtaining quality educational and health services. For example, caregiving for a child with autism triples the likelihood of reporting problems in obtaining educational services (Montes, Halterman, & Magyar, 2009) and the majority of caregivers of children with autism report problems with obtaining high quality health care (Strunk et al., 2014). These stressors result in greater physical and psychological health problems for caregivers of people with autism (Dabrowska & Pisula, 2010). Thus, drawing upon both Conservation of Resources Theory and Spillover Theory, the relatively stressful experience of providing care to a person with autism is expected to enhance the likelihood of a caregiver resigning from his or her job.

*Hypothesis 3: Providing care for a person with autism (versus other forms of disability) is positively associated with caregiver job turnover.*

#### *Individualized Funding and Care Recipient Disability Type*

Although individualized funding approaches have the potential to create significant personal benefits, these benefits may not be universally experienced across all groups of people with disabilities and/or their caregivers. Prior research has identified some variation in the effects of individualized funding. For example, older people experienced poorer psychological well-being under an individualized system than under previous systems and required the most assistance in navigating individual funding arrangements (Moran et al., 2013). Building upon this, the effects of these arrangements are considered for different groups of caregivers who vary based upon the type of disability held by their care recipient.

Earlier in this paper it was argued that contextual (individualized funding effectiveness for caregivers and care recipients) and individual factors (disability type) influence caregiver job turnover. Beyond this, it is also possible that contextual and individual features interact to form an additional source of influence on turnover behavior. Several theoretical perspectives suggest that an employee's behavior is shaped by contextual and individual features (e.g., Hobfoll, 1989). This position is supported by research that shows that individual characteristics shape the strength of the relationship between context (i.e., available support) and employee behaviors (Tett & Burnett, 2003). The importance of these interactive effects has also been demonstrated in relation to caregiving. For example, Zacher and Schulz (2015) found that eldercare demands moderated the relationship between perceived organizational support for eldercare and employee strain.

As noted, providing care for a person with autism is demanding. These demands suggest that caregivers of people with autism will particularly benefit from support (e.g., high quality individualized funding) relative to caregivers for people with other types of disabilities. Individualized funding may be especially important for employees who care for a person with autism for at least two reasons. First, effective individualized funding is particularly beneficial for employees who care for a person with autism because this type of care typically involves close and constant supervision. This requirement makes it hard for caregivers to maintain typical job roles. The flexibility available through individualized funding is thus useful because it allows these employees to obtain higher quality support services that are more effective at addressing the needs of the person they care for. Second, individualized funding facilitates efforts to combine caregiving and employment. Caregiving for people with autism requires complex forms of care that involve the coordination of multiple service providers. This complexity makes it challenging to combine work and caregiving. Thus, the ability to exert greater control over how funding is used is particularly helpful in allowing an employee to maintain his or her job. In summary, it is expected that a care recipient's disability type will influence the benefits accrued from individualized funding such that this funding is especially helpful in reducing turnover for employees who care for someone with autism. It is anticipated that individualized funding will reduce caregiver turnover via its beneficial effects for both care recipients and caregivers.

*Hypothesis 4: Care recipient disability type will have a moderating effect on the relationship between individualized funding effectiveness and caregiver job turnover. Specifically, caregivers will experience the greatest reduction in job turnover when the care recipient has autism and individualized funding is effective for the 4a) care recipient, and 4b) caregiver.*

## Method

The data collection took place in 2014 in the state of New South Wales (NSW), Australia. The majority of the respondents were members of Carers NSW. This community non-profit organization provides support and advocacy services to caregivers. The survey was sent to Carers NSW members who completed the survey via paper or online means. The survey was also distributed to affiliated organizations and interested individuals who were not members of Carers NSW. Employees with caregiving responsibilities who received individualized funding were selected from this dataset ( $n = 88$ ). Respondent age ranged from 16 to 71 years old, with an average of 50 years old. Most respondents (89%) were female. The highest frequency work background of caregivers in terms of industry sector was education and training (22%).

### *Outcome Variable*

**Job turnover.** Caregivers were asked the following question "I have had to change jobs to fit in with my caring responsibilities" (1 = yes, 0 = no).

### *Predictor Variables*

**Individualized funding effectiveness.** Caregivers were asked “How has individualized funding affected?” (1 = Much worse, 2 = A little worse, 3 = No change/ Unsure, 4 = A little better, 5 = Much better) and responded to 6 items. These items were subjected to a factor analysis which supported a 2 factor structure. Factor 1 was composed of 3 items that related to *individualized funding effectiveness for caregivers* (“The control you have over services”, “The choices you have in how you live your life”, “The degree to which your needs are met”). Factor 2 was composed of 3 items that related to *individualized funding effectiveness for people with disabilities* (“The control the person(s) you care for has over services”, “The choices the person(s) you care for has in how they live their life”, “The degree to which the needs of the person(s) you care for are met”). Responses were summed to form continuous measures with higher scores indicating greater individualized funding effectiveness for caregivers ( $\alpha = .94$ ) and people with disabilities ( $\alpha = .94$ ).

### *Moderator Variable*

**Care recipient disability type.** Caregivers were asked “For what conditions/ disabilities/illnesses does he/she need your care? (e.g., dementia, autism, arthritis, frailty, depression, Down syndrome, schizophrenia, cancer, brain injury, etc.)”. Responses were coded (1 = cared for person with autism, 0 = cared for person with another type of disability).

### *Control Variables*

Based on prior literature (Bainbridge et al., 2006; Gordon & Rouse, 2013; Kulik, Cregan, & Bainbridge, 2013), 4 controls were included: *Caregiver gender* (1 = male, 0 = female), *Primary caregiver [Level of care]* (0 = No one else provides care, 1 = Someone else provides a small amount of care, 2 = Someone else provides a significant amount of care), *Hours of care provided* (“On average, how many hours per week do you spend caring for him/her? Please select your best estimate”) (1 = 0-10, 2 = 11-20, 3 = 21-30, 4 = 31-40, 5 = 41-50, 6 = 51-60, 7 = 61-70, 8 = More than 70), and *Years caregiving* (1 = Less than 1 year, 2 = 1-5 years, 3 = 6-10 years, 4 = 11-15 years, 5 = 16-20 years, 6 = More than 20 years).

## Results

Means, standard deviations, and zero-order correlations are shown in Table 1. The data were examined using hierarchical moderator regression. The regression models that involved individualized funding effectiveness for care recipients were considered first (Table 2, Models 1a-c), and those that involved individualized funding effectiveness for caregivers second (Table 2, Models 2a-c). Control variables were entered in the first step of each set of regressions. Predictor and moderator variables were entered in a second step. The interaction term was entered in the third step. To test Hypotheses 4a and 4b, the values of the continuous variables were centered (Aiken & West, 1991). Two interaction terms (Individualized funding effectiveness for caregivers x Type of disability, Individualized funding effectiveness for care recipients x Type of disability)

were created. The continuous variables and resulting interaction terms were used in the hierarchical regression analysis (Table 2).

**Table 1: Means, Standard Deviations, and Correlations**

	<i>m</i>	<i>s.d.</i>	1	2	3	4	5	6	7
1. Caregiver gender	.89	.35							
2. Caregiver is the primary caregiver	1.35	.79	.03						
3. Hours of care provided	6.24	2.74	.12	-.11					
4. Years caregiving	4.23	1.63	-.02	-.14	-.06				
5. Individualized funding effectiveness for the person with disabilities	3.90	.90	-.01	.20	-.04	-.05			
6. Individualized funding effectiveness for caregiver of person with disabilities	3.85	.90	-.01	.15	.01	-.06	.95**		
7. Care recipient disability type	.28	.45	.23*	.11	.19	-.01	.09	.06	
8. Caregiver job turnover	.28	.45	-.09	-.13	.09	.19	-.24†	-.27†	.16

Notes. *n* = 86-88.

\*  $p < .05$ , \*\*  $p < .01$

**Table 2: Results of Moderation Analyses for Individualized Funding Effectiveness**

Variables	For care recipients			For caregivers		
	Model 1a	Model 1b	Model 1c	Model 2a	Model 2b	Model 2c
<i>Controls</i>						
Caregiver gender	-.71 (.73)	-1.24 (.80)	-1.18 (.79)	-.71 (.73)	-1.28 (.80)	-1.21 (.79)
Caregiver is the primary caregiver	-.20 (.35)	-.08 (.39)	-.27 (.40)	-.20 (.34)	-.12 (.38)	-.22 (.39)
Hours of care provided	.09 (.09)	.07 (.10)	.14 (.11)	.09 (.09)	.08 (.10)	.12 (.10)
Years caregiving	.24 (.16)	.25 (.17)	.27 (.18)	.24 (.16)	.25 (.17)	.27 (.18)
<i>Predictor variable</i>						
Individualized funding effectiveness for the person with disabilities		-.72* (.29)	-.78* (.34)			
Individualized funding effectiveness for caregiver of person with disabilities					-.77** (.29)	-.74* (.31)
<i>Moderating variable</i>						
Care recipient disability type		1.29* (.60)	1.34* (.68)		1.29* (.61)	1.28* (.65)
<i>Interaction term</i>						
Individualized funding effectiveness for the person with disabilities * Care recipient disability type			-2.48* (1.09)			
Individualized funding effectiveness for caregiver of person with disabilities * Care recipient disability type						-1.48† (.83)
Overall Cox and Snell R <sup>2</sup>	.05	.16*	.24**	.05	.18*	.21**
Change R <sup>2</sup>		.11**	.08**		.13**	.03*

Notes. *n* = 88. Unstandardized regression coefficients are presented; numbers in parentheses are standard errors.

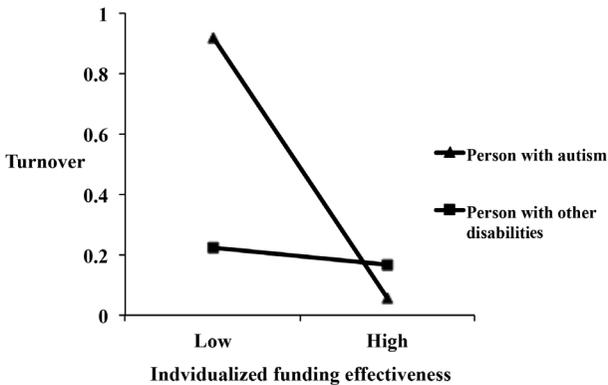
†  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$

*Models 1a-1c.* Job turnover was less likely when caregivers had access to highly effective individualized funding for their care recipient ( $b = -.72$ ,  $p < .05$ ) and more likely when they assisted people with autism versus other types of disabilities ( $b = 1.29$ ,  $p < .05$ ). The change in R-square resulting from the inclusion of the main effect terms was 0.11. The two-way interaction term, individualized funding effectiveness [for care recipients] x disability type coefficient was significant ( $b = -2.48$ ,  $p < .05$ ). The change in R-square resulting from the inclusion of the interaction term was 0.08. To better understand the interaction term coefficient, separate regression lines were plotted for type of disability (autism, other) following procedures of Aiken and West (1991) (Figure 2). An inspection of the simple slope coefficients demonstrates that it was non-significant for care recipients with a disability other than autism ( $b = -.39$ ,  $p = ns$ ) and significant and negatively inclined for care recipients with autism ( $b = -1.87$ ,  $p < .05$ ). These results support Hypothesis 4a.

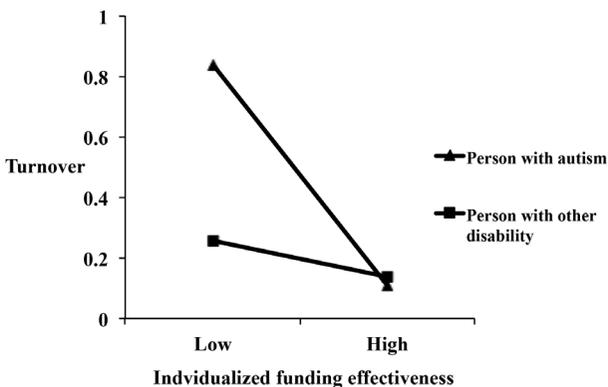
*Models 2a-2c.* The results showed that job turnover was less likely when caregivers had access to highly effective individualized funding ( $b = -.72$ ,  $p < .01$ ) and more

likely when caregivers assisted people with autism versus other types of disabilities ( $b = 1.29, p < .05$ ). The change in R-square resulting from the inclusion of the main effect terms was 0.13. The two-way interaction term was entered in the third step of the regression. The individualized funding effectiveness [for caregivers]  $\times$  disability type coefficient was marginally significant ( $b = -1.48, p < .10$ ). The change in R-square resulting from the inclusion of the interaction term was 0.03. To explore the interaction term coefficient, separate regression lines were plotted for type of disability (autism, other) (Figure 3). The simple slope coefficient was non-significant for care recipients with a disability other than autism ( $b = -.33, p = ns$ ). The simple slope coefficient was significant and negatively inclined for care recipients with autism ( $b = -2.67, p < .01$ ). These results support Hypothesis 4b. In summary, the combined results provide support for Hypotheses 1, 2, and 3. Hypotheses 4a and 4b also received support.

**Figure 2:** Individualized Funding Effectiveness (Person with Disabilities)  $\times$  Type of Care Recipient Interaction Effect on Caregiver Job Turnover



**Figure 3:** Individualized Funding Effectiveness (Caregiver)  $\times$  Type of Care Recipient Interaction Effect on Caregiver Job Turnover



## Discussion

The study findings pointed clearly to the benefits of individualized funding. For both caregivers and care recipients, access to highly effective individualized funding reduced the likelihood of a caregiver having to relinquish his or her job. Furthermore, the findings demonstrated that access to highly effective individualized funding was especially beneficial in reducing caregiver job turnover when the person being assisted was on the autism spectrum. Care recipient disability type moderated the effect of both caregiver and care recipient individualized funding effectiveness on caregiver job turnover.

This study built upon Conservation of Resources Theory (Hobfoll, 1989) which outlines how the flexibility provided by support such as individualized funding packages is a valuable personal resource that helps reduce the depletion of other resources. The finding that individualized funding helps to reduce the likelihood that caregivers will leave their job is consistent with arguments that once flexibility is obtained in one domain, it can be enacted at various times and/or in different domains. The findings are thus consistent with Conservation of Resources Theory but extend the application of this theory into a relatively understudied area in the work-family literature – that is, the study of employees' informal, unpaid caregiving responsibilities for people with disabilities. These findings have important implications for both research and practice.

## Implications

### *For Theory*

The findings extend research on people with disabilities, their caregivers, and the work-family interface in four ways. First, the finding that individualized funding reduced the likelihood of caregivers relinquishing their job highlights the importance of the connection between a caregiver and whom he or she cares for. Prior research has tended to focus only on the person cared for and has neglected the interdependencies in the caregiver-care recipient dyad. This overlooks the fact that decisions about supporting services are typically made in consultation with caregivers and that these decisions jointly affect the caregiver and care-recipient. The findings underline that it is also important to evaluate the effects of individualized funding on the caregiver. Further, the results reinforce the notion that caregivers play a major role in person centered systems and individualized funding arrangements and that they need to be appropriately considered (NSW Government, 2012). Future researchers would be well served to explore other aspects of the independencies that exist between caregivers and care recipients.

Second, the finding that individualized funding reduces caregiver job turnover suggests that work-family researchers should make greater efforts to understand how the broader policy context shapes caregiver employment outcomes. Research on people with disabilities and their caregivers has tended to focus on how government policy affects non-work outcomes, while work-family researchers have concentrated on exploring how organizational policies shape the outcomes of employed parents with non-disabled children. This had led to clear gap in understanding of the effects

of government policy interventions on a caregiver's employment. The current study findings thus help to address a major gap in the literature while suggesting the benefits of further research that considers how other government policies affect a caregiver's employment experience.

Third, the finding that different caregiving responsibilities affect the likelihood of job turnover underlines the importance of broadly conceptualizing what constitutes "family" in "work-family" research. Future research might build upon this study by including more nuanced measures of employee's non-work responsibilities that take into account a range of care-related roles. These might encompass, but are not limited to, situations in which an employee has non-work responsibilities as a parent for his or her non-disabled child.

Fourth, the finding that caregivers of people with autism were less likely to leave their job when they had access to effective individualized funding demonstrates the importance of treating people with disabilities and their caregivers as heterogeneous groups. Future research should ensure the use of study measures that are sensitive to group differences so that their diverse experiences are not obscured by over-simplistic approaches to conceptualization and measurement.

### *Practical Implications*

The findings suggested that individualized funding packages have broader benefits for caregivers than may necessarily have been expected or intended. While the overarching aim of this approach to service delivery was to increase the choice and control that people with disabilities have over the services they receive, the study findings suggested that this choice has very real implications for caregivers, including an enhanced ability to maintain employment. This finding alone may serve as an encouragement to other caregivers to take on individualized funding packages where they, or the person they care for, qualify. The opportunity afforded by individualized funding is especially important because caregivers typically find few organizational initiatives that are specifically designed to assist them manage the simultaneous demands of employment. The use of individualized funding may have further benefits for people on the autism spectrum. As the flexibility of individualized funding packages appears to reduce job turnover amongst their caregivers, people with autism are likely to experience benefits in terms of family income and modeled behavior regarding stable employment.

For organizations, the finding that flexibility in relation to service access decreases the likelihood of caregiver job turnover suggests that providing workplace flexibility may also have positive effects. Thus, organizations may benefit from enhancing flexible caregiver working conditions and by publicizing non-work sources of flexibility in the form of individualized funding programs. The findings also suggest that it may be advantageous for policy makers to investigate ways of adapting existing approaches in order to meet the needs of families with other disabilities in an equally effective manner. For example, policy initiatives that focus on the family unit as a whole (as opposed to being centered solely on the person with a disability) may be particularly beneficial for people on the autism spectrum and their caregivers.

## Conclusion

One potential limitation of the study was the relatively small sample size. This restricted the number of control variables that could be included in the models. Thus, future researchers might consider alternative data collection strategies that focus on identifying users of individualized funding via snowball sampling or by obtaining details of potential respondents via partnerships with government agencies who administer individualized funding. The small sample size may also raise potential concerns about the relationships reported. However, it should be noted that the effects were significant in spite of the size of the sample. This suggests that the effect size for the interactions were relatively large and this provides encouragement for further research in this area. One important boundary condition to the findings is that the effects of the predictors were assessed on an employment-related outcome variable. It is thus possible that a more complex picture might emerge from the collection of data on outcomes across several life domains. For example, while the flexibility available via individualized funding is generally viewed positively by caregivers, some caregivers have expressed concerns that the complexity of self-managing these arrangements is an additional burden (Broady, 2014). A clear direction for future research is thus to include complementary measures of caregiver burden and well-being when assessing the effects of individualized funding on employees with caregiving responsibilities. Despite these limitations, the current study has important strengths in its consideration of a critical employment outcome in connection to two understudied groups in the work-family literature. Both caregivers and care recipients face many employment challenges, but this study clearly demonstrates to both organizations and individuals the benefits of a key intervention for facilitating employment.

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# Researching Autism Spectrum Disorder in the Workplace: Lessons Learned from Researching the Relationship between Adult Attention Deficit Disorder and Organizational Behavior

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*Recent research suggests that many neurobehavioral disorders (NBDs) remain prevalent through adolescence and into adulthood. Research also suggests that NBDs significantly influence the performance of many adult workers. As the recognition and definition of adult NBDs evolves, there is an accompanying need for research on the relationship between NBDs and organizational behavior and performance. Research on autism spectrum disorder (ASD) is in its infancy and guidelines are needed to help address the complex challenges of researching the relationship between an adult NBD like ASD and organizational behavior. Recent research on ASD suggests a continuity relationship between ASD and AADD, with AADD being a less severe version of ASD. The relative longer history and greater volume of research regarding AADD in the workplace suggests that a review of this research may help provide a useful roadmap for examining the influence of ASD. This study reviews research on the relationship between AADD and organizational behavior; identifies key research issues, empirically addresses some of the key controversies, and provides an example of empirically examining the relationship between NBD symptom clusters (in this case AAD) and an apex organizational behavior variable (role stress). The results help provide strategic guidelines for researching ASD in the workplace.*

Research on neurobehavioral disorders (NBDs) suggests that many disorders like Attention Deficit Disorder (ADD) and Autism Spectrum Disorder (ASD) remain prevalent through adolescence and into adulthood (Faraone & Biederman, 2005; Sizoo, van der Gaag, & van den Brink, 2015). Recent reviews of global prevalence research estimate that at least 5% of the global adult population have clinical levels of attention-related disorders (Polanczyk et al., 2007) costing the global economy approximately 144 million days of lost production per annum (de Graaf et al., 2008). This suggests that NBDs like AAD and ASD are prevalent and impactful within the global economy.

The strengthening of legal protections for workers with mental disabilities and a growing emphasis on proactive diversity management, inclusion and corporate social responsibility has increased the pressure on employers to accommodate and actively engage workers with neurobehavioral disorders (NBD). Such an orientation requires an understanding of both the challenges and benefits of NBDs. For example, empirical research has only recently confirmed a relationship between ADD and creative ability in the workplace (White & Shah, 2006, 2011).

Despite the prevalence and impact of NBDs in the workplace, relatively little research has been conducted on the impact of NBDs within the nomological network that determines individual and team performance in organizations (Halbesleben, Wheeler, & Shanine, 2013). This lack of research limits managerial capacity to provide support, accommodation, and to ensure the effective inclusion of disordered but potentially valuable employees.

Research on the impact of ASD on work behavior is in its infancy and some guidelines are needed to help address the complex challenges that arise when researching the relationship between a NBD and organizational behavior. The potential continuity relationship between ASD and AAD suggests that most key issues from symptom identification and measurement, constructing models and hypotheses, data collection and analysis, and making recommendations, are likely to possess similarities. The relative longer history and greater volume of research regarding AAD in the workplace suggests that a review of this research may help provide a roadmap for examining the influence of ASD. This study reviews research on the relationship between AAD and organizational behavior, identifies key research issues, empirically addresses some of the key controversies, and provides an example of empirically examining the relationship between NBD symptom clusters (in this case AAD) and an apex organizational behavior variable (role stress). This should provide some strategic guidelines for researching the ASD in the workplace.

## **Definition, Prevalence and Impact of Adult Attention Deficit Disorders**

The most commonly diagnosed attention disorder is Attention Deficit-Hyperactivity/Impulsivity Disorder. The diagnostic and statistical manual of mental disorders (DSM-5, 2013) produced by the American Psychiatric Association (APA) defines this disorder as a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with development, has symptoms presenting in two or more settings (e.g., at home, school, or work), and negatively impacts social, academic or occupational functioning. A clinical diagnosis requires children to demonstrate

at least six symptoms from either the inattention symptoms (inattention sub-type), the hyperactivity-impulsivity symptoms (hyperactive/impulsive sub-type) or both (combined type), whereas adolescents and adults must exhibit at least five.

Lifespan research suggests that the majority of children will continue to experience symptoms as adults, and a recent population screen of 966 adults suggests prevalence of approximately 3% using a narrow definition and 16% using a broader definition (Faraone & Biederman, 2005). Prevalence research suggests that at least 11 million adults within the United States and over 200 million globally possess clinical levels of ADHD (Barkley, Murphy, & Fischer, 2010; de Graaf et al., 2008; Polanczyk et al., 2007). Total annual incremental costs of adult attention related disorders in the United States are estimated at over \$200 billion with income and productivity losses of over \$100 billion (Jalpa et al., 2012). Research to date suggests that Adult Attention Deficit Disorders are a common and costly problem within both the global and US workforce (Jalpa et al., 2012; de Graaf et al., 2008; Kessler et al., 2005). In addition, prevalence may be significantly underestimated due to poor coverage of symptoms within existing measures, incorrect clinical thresholds, lack of self-awareness and negative social stigma that creates under reporting, and complex coping mechanisms that concentrate impairment in one particular life situation while protecting other situations (Brown, 1996, 2001; Barkley, 2010; Goldstein, 2002; Manor et al., 2012; Palmmini, 2008).

Research on symptom prevalence through adolescence and into adulthood suggests a continuation of symptoms accompanied by a general decline in symptom intensity and a relatively greater decline or absence of the hyperactivity component of the disorder (Biederman et al., 2006; Brown, 1995). Brown (1995) suggests that strict reference to the symptoms of inattention contained within the diagnostic and statistical manual of mental disorders (American Psychiatric Association-DSM-V, 2013) does not capture all of the key adult symptoms, and that the hyperactivity component should be excluded from the adult construct.

Research conducted by Brown (1996) on symptoms that commonly occur among adults with attention deficits produced the following 5 symptom clusters (factors):

- difficulty activating and organizing to work (difficulty getting organized and started on tasks predominantly caused by a relative higher arousal threshold and/or chronic anxiety)
- difficulty sustaining attention and concentration (difficulties staying focused on priority tasks that are not of high personal interest, receiving and organizing information and resisting distraction)
- difficulty sustaining energy and effort (insufficient and/or inconsistent levels of general energy and difficulty sustaining effort required to complete important tasks)
- difficulty managing emotional interference (difficulty with intense, negative and disruptive mood states; relatively high and sustained levels of irritability and emotional reactivity; difficulty managing emotions that constrain the development of constructive relationships)
- difficulty utilizing working memory and accessing/recalling learned material (episodic or consistent chronic forgetfulness, difficulty organizing, sequencing and retaining information in short term memory, and problems accessing and using learned material)

### *Categorical vs Dimensional Measurement*

Researchers and practitioners have expressed concern about a simplistic interpretation and use of the attention disorder construct arising from categorical diagnosis based on the presence (or lack thereof) of a particular number and type of symptoms. The categorical approach both ignores evidence that symptoms and associated impairment fall along a continuum (Achenbach, 1991; Blacker & Tsuang, 1992; Levy et al., 1997; Sherman, Iacono, & McGue, 1997), and exclude non-clinically disordered adults from full consideration within research on nomological networks of interest (Nigg, 2006). Limitations of the categorical approach within organizational behavior research is addressed by using dimensional measurement and correlation analysis when modeling the disorder within individual and team performance networks (Coetzer & Trimble, 2010).

Brown (1996) uses dimensional (severity) measurement of the symptom clusters to determine the overall level of AAD. AAD is defined as a persistent pattern of inattention and related cognitive, emotional and effort-related symptoms that occur with varying levels of severity and create progressively greater challenges within the personal, academic, and work life of adults as severity increases (Brown, 199; Coetzer & Trimble, 2010). Research by Coetzer (2007, 2009a, 2009b, 2009c) demonstrates that dimensional measurement and correlation of AAD with organizational behavior variables reveals important components of the individual and team performance nomological network.

### *Occupational and Organizational Impact*

Research by Biederman et al. (2006) found that, on average, disordered adults have household incomes that are \$10,791 lower for high school graduates and \$4,334 lower for college graduates. Annual income loss for disordered adults in the United States is similar to losses associated with drug and alcohol abuse (Biederman et al., 2006).

Organizational behavior research has associated disordered adults with poor interview performance (Weiss & Hechtman, 1993), higher workplace accident rates (Reynolds, 1997), lower job performance ratings (Barkley, 2013), higher absenteeism (Secnik, Swensen, & Lage, 2005), lower productivity (Kessler et al., 2009) and higher turnover (Kleinman et al., 2009). Disordered adults are also perceived by their employers as requiring more supervision and less able to complete assignments (Barkley, 1990). They are also more likely to change jobs (Reynolds, 1996), engage in part time employment (Biederman et al., 2006), and seek out jobs that don't require repetitive tasks, close supervision, sedentary performance conditions and concentration over long periods of time (Mannuzza et al., 1993). A review of data from Fortune 200 companies found that medical costs for clinically disordered employees were 48% higher (Secnik et al., 2005).

Research studies using dimensional measurement of AAD have identified associations between difficulty with teamwork (Coetzer & Richmond, 2007; Coetzer & Trimble, 2010), greater reliance on coworkers, difficulty managing conflict, job stress (Coetzer, Hanson, & Trimble, 2009), lower self-efficacy, and less effective task management systems (Coetzer & Richmond, 2009).

## General Theories of Adult Attention Disorders and Work Performance Constraints

Work performance deficits associated with Adult Attention Deficit Disorders have recently been explained using Attention Control Theory (ACT) which proposes that any conditions that create inattention disrupt the efficient and effective performance of priority tasks (Eysenck et al., 2007). The efficient and effective achievement of goals is thought to be influenced by two interdependent attentional systems – the stimulus driven system and the goal driven system (Corbetta & Schulman, 2002; Posner & Peterson, 1990). The stimulus driven system responds to external stimuli that make immediate demands on attention and the goal driven system uses higher order cognitive processes and control systems to keep individuals progressing toward broader goals (Miller & Cohen, 2001).

Disordered employees are thought to have both an imbalance between their attentional systems, and difficulty making optimal use of the goal driven system (Halbesleben et al., 2013). The imbalance is the result of disproportionate expenditure of attentional resources on external stimuli that are immediately gratifying and often task irrelevant or non-critical. Sub-optimal use of the goal driven system is caused by limited ability to inhibit initial responses, higher vulnerability to distraction and disrupted control of working memory (Alvarez & Emory, 2006). This prevents optimal development and use of higher order cognitive processes like planning, prioritizing, modeling and predicting, decision making, problem solving and regulation of both emotion and effort (Barkley, 1997).

Impulsivity and over activity associated with the disorder also makes it difficult for individuals to participate in meetings and to collaborate and coordinate with others on tasks that are not of personal interest and immediately gratifying (Jackson & Farrugia, 1997; Kitchen, 2006; Patton, 2009). ACT suggests that disordered employees will have a relatively lower ability to translate effort into efficient and effective performance on priority tasks because of higher distractibility, diffuse expenditure of energy, disrupted workplace relationships, and constrained higher order cognitive processes (Halbesleben et al., 2013).

Disordered adults may have a relatively greater propensity for Organizational Citizenship Behavior (OCB) which offers more immediate gratification but often comes at the expense of priority work tasks (Halbesleben et al., 2013). This suggests that both the disordered employee and some coworkers who benefit from the OCB may have a positive perspective of performance while others who are impacted by poor performance on priority tasks will often have the opposite experience.

### Contributions to Performance

Attention disorders are also associated with positive behaviors like ingenuity, innovation, creativity, determination, perseverance, risk taking, and intense concentration on things of interest (Mannuzza et al., 1993; Schecklmann et al., 2008; Nicolaou et al., 2011; White & Shah, 2006, 2011) which may explain why entrepreneurs appear to have relatively higher levels of the disorder (Laporto, 2005; Nicolaou et al.,

2011; Nixdorff, 2008; Miller, 1993). Notable modern entrepreneurs who acknowledge that aspects of the disorder have been useful to them include Richard Branson (founder of Virgin), Ingvar Kamprad (founder of Ikea), David Neeleman (founder of JetBlue), Charles Schwab (founder of the Schwab Corporation) and Paul Orfalea (founder of Kinkos). Hartmann (2003) suggests that significant historical figures like Thomas Edison, Albert Einstein, Henry Ford, Walt Disney and many others demonstrated the symptoms of Attention Deficit Related Disorders and took advantage of some of the benefits like perseverance, hyper focus and creativity. Research by White and Shah (2011) suggests that adults with ADHD attain higher overall levels of creative achievement across a variety of occupational and task domains. In fast paced work environments, adults with ADHD may perform just as well, if not better, than non-ADHD employees (Stuart, 1992).

The attention deficit characteristic of low arousability is thought to produce a higher sensation seeking drive which generates higher levels of risk taking and novelty/stimulation seeking behavior (Farley, 1985). This component of the disorder received additional validation when a cognitive restlessness symptom cluster loaded onto the hyperactivity factor within the Conners Adult ADHD Scale (CAARS) (Conners, Erhardt, & Sparrow, 1999). Subsequent research by Sagvolden et al. (2005) suggests that the maintenance of novel behavior is associated with reduced reinforcement and extinction opportunities caused by the disorder.

Higher levels of creativity associated with the disorder are thought to be the result of uninhibited attention spans (wider and more diffused) and increased protection from both internal and external inhibitors. Widened and defocused attention adds more elements to the attentional stream which increases the number of potential combinations (Mendelsohn, 1976). Protection from external inhibitors is caused by high distractibility that prevents disordered adults from focusing on immediate external constraints (Memmert, 2009). Protection from internal inhibitors is caused by disrupted links between working and long term memory that reduces the influence of previously developed and stored schema (Park et al., 2003).

Translating creativity into practical benefit requires both divergent thinking and the ability to focus attention and work within certain constraints (Finke & Bettle, 1996; Finke, Ward, & Smith, 1992). Research conducted by White and Shah (2011) suggests that disordered adults have a significantly greater preference for the idea generation stage of decision making and problem solving which requires divergent thinking. They have significantly lower preference for defining the decision making situation or developing and refining ideas and solutions, all of which predominantly require convergent thinking and active consideration of constraints. Disordered and non-disordered adults appear to have similar preferences regarding the implementation stage of decision making.

Recent research by Zhou (2003) suggests that employees with low creativity benefit from working closely with highly creative employees. This suggests that one of the key contributors to raising levels of creativity and innovation in organizations is the manner in which highly creative and potentially disordered employees are distributed and deployed throughout the organization. Kessler et al. (2005) summarizes this situation by suggesting that disordered employees need to be

placed in performance situations that are aligned with their strengths and supported to remove, reduce or mitigate the deficits which can be a significant constraint on performance. Hartmann (1993, 2003) suggests that certain features of AADD may be necessary for organizational and societal success, and encourages employers to take a more encompassing view of disordered employees.

## **Treatment and Management of Adult Attention Disorders**

Adult Attention Deficit Disorders are highly treatable (Barkley, 2010; Shaw et al., 2012) but also challenging because of a complex etiological structure with multiple points of intervention and variation within the form of the disorder (Barkley, 2010; Brown & Gerbarg, 2012; Chacko, Kofler, & Jarrett, 2014). Treatments are typically divided into medicinal correction of a neurotransmitter imbalance and non-medicinal activities that address related cognitive, emotional and behavioral deficits, and create or secure corrective or supportive environments (Hodgson, Hutchinson, & Denson, 2014; Sibley et al., 2014).

Non-medicinal treatment includes education, neurofeedback, various forms of counseling, coaching and training (cognitive-behavioral, experiential, systemic), and behavioral and compensatory management (person-situation fit and accommodation) (Hodgson et al., 2014; Sibley et al., 2014). Research suggests that other factors like exercise, nutrition and meditation may also contribute to effective management of the disorder (Stevens et al., 2011; Zeidan, 2010). Most researchers and clinicians agree that multimodal management of the disorder involving a combination of medicinal and non-medicinal interventions has the greatest potential for success (Shaw et al., 2012; Travell & Visser, 2006).

## **Adult Attention Disorders in Contemporary Organizations**

Rapid changes in social and economic conditions brought about by technological advances, globalization, human migration and other factors are changing the nature of work and how organizations are designed and managed (Dastmalchian & Blyton, 2001; Davis-Blake & Broschak, 2009). Organizations are moving from management driven external control to more concurrent control by increasingly empowered, self-regulating and comanaging employees working in teams (Freese, 2008). This change is delegating and distributing increasingly complex responsibilities and associated competencies throughout the organization which employees are expected to embrace, develop and enact in an increasingly independent manner (Manz et al., 2015). Many of these competencies rely on higher order cognitive processes like inhibiting initial responses, planning, prioritizing, critical thinking, modeling, prediction, regulation of emotion, regulation of effort and problem solving. The emphasis on collaboration and working in heterogeneous teams has increased the general importance of emotional regulation and social skills.

The disruption of higher order cognitive processes and the social challenges created by the disorder are potential constraints on the ability to develop and enact many contemporary workplace competencies. The increasing cognitive and emotional

load occurring within many workplace roles places additional demands on higher order cognitive processes. This may further tax already stretched cognitive resources resulting in amplification of symptoms and additional constraints on performance (Young et al., 2007).

Other highly valued competencies like creativity, innovation and an entre/intrapreneurial orientation appear to be enhanced by the disorder. The ability of an organization to design managerial strategies that foster employee innovativeness, creativity and an entre/intrapreneurial orientation may be one of the most significant contributors to sustained organizational success within an increasingly globalized economy (Meisinger, 2007; Tewari, 2011). This suggests that some of the most highly valued employees may also be disordered to varying degrees and that complex and supportive managerial strategies may be required to successfully deploy these employees.

The development of multi-modal management of the disorder in the workplace requires a comprehensive understanding of the impact of the disorder on personal performance capacity (core workplace competencies, motivation and other performance supporting personal states), performance behavior including key mediators and moderators, and performance outcomes at the individual, team, and organizational level (Coetzer & Trimble, 2010). Recent research suggesting that the relationship between genetic risk factors and manifest symptoms may be activated and/or strengthened by negative psychosocial conditions (Nikolas, Klump, & Burt, 2012) highlights the potential importance of developing constructive relational, team, and organizational cultures/climates for at risk employees.

### **Operationalization and Measurement – DSM-Based Adult Attention Deficit Hyperactivity-Impulsivity Disorder vs. Adult Attention Deficit Disorder**

The DSM determination of clinical status requires reaching a symptom quantity threshold and demonstrating significant impairment in two or more life settings (social, academic etc.). Both practitioners and researchers have expressed concerns about using a categorical diagnosis derived from a symptom count and making subjective assessments of related impairment. They suggest that treating the disorder as a categorical diagnosis as opposed to a dimensional construct with varying levels of severity promotes simplistic use and interpretation of the construct (Achenbach, 1991; Blacker & Tsuang, 1992; Brown, 1996, 2001; Levy et al., 1997; Nigg, 2006). The DSM-5 (2013) has acknowledged the need for more dimensional treatment of ADHD by suggesting that clinically disordered persons be classified as mild, moderate, or severe. Expanding social and legal support for inclusion and reasonable accommodation of disordered but functional employees has increased the need for more objective determinations of significant impairment.

Alternatives to the use of a symptom count and subject assessment of impairment includes dimensional measurement of symptoms and use of standard deviation from a normative mean to determine clinical levels of impairment. Scales used for dimensional measurement have been developed by selecting items that best represent manifest symptoms and factor analyzing the item set to determine dimensionality and

factor loadings. Scales are typically made ready for use by selecting and confirming the optimal factor structure and related items, including the determination of subtype, and norming the instrument. Clinical status is determined by examining a subject score relative to a clinical cut point that is set at a particular standard deviation above the normative mean (typically between 1.5 and 2 standard deviation). The content validity of these instruments is primarily dependent on the domain coverage and quality of the original set of items submitted for instrument validation.

Use of either continuous or categorical (clinical status) data from these instruments in subsequent research on antecedents and consequences depends on perspectives about normal versus abnormal and the purpose of the research. Nigg (2006) suggests that disorders are predominantly a clinical manifestation of personality with shared determinants and that normal and abnormal are different points along the same continuum. Clinical cut-points therefore represent an estimation of the general point along the continuum where increasing severity of symptoms becomes significantly impairing, rather than a qualitatively different phenomena or category. The continuum perspective supports correlating symptom intensity or frequency with variables contained within a nomological network of interest.

Determining the content validity and dimensionality of new forms of a disorder like adult ADHD is necessary in order to identify any important differences. The DSM description of the disorder and its subtypes has predominantly evolved out of practitioner experiences and research with children (Weiss & Hechtman, 1993; Wender, 1995). Reference to adult ADHD in the DSM began with the specification of a symptom threshold for adults and the description of workplace difficulties within the listed symptoms (Lange et al., 2010). The DSM-5 (2013) added impairment in occupational functioning to the formal definition of the disorder and expanded the descriptions of how the symptoms might appear in adults. The specification of a lower symptom threshold for adults suggests that adult ADHD may be a somewhat different form of the disorder. The lower symptom threshold recognizes the continuing evolution of the disorder across the age span of adolescents and adults often resulting in fewer manifest symptoms, but continuing impairment (Barkley, 2010).

Research conducted on the symptom domains of adult ADHD by Conners et al. (1999) produced 4 factor-derived dimensions. These include an inattention/memory factor and a hyperactivity factor that includes both physical and cognitive restlessness. The impulsivity factor includes the traditional elements of blurtaciousness (excessive talking and social intrusiveness), plus items that represent emotional liability or instability. The final factor refers to self-concept and includes items related to low self-esteem, low self-efficacy, and failure to confront challenges. The self-concept factor is thought to emerge as a result of the accumulated effects of living with the challenges of the disorder through childhood and into adulthood.

The items within the Conners et al. (1999) inattention/memory factor are similar to the DSM inattention symptoms except for items that refer to trouble getting started and managing time. The Conners hyperactivity factor includes items that refer to both physical and cognitive restlessness. The physical restlessness items are similar to the hyperactivity symptoms in the DSM, whereas the cognitive restlessness items are not represented in the DSM symptoms. The cognitive restlessness items are similar

to the exploratory excitability subscale within Cloninger's (1988) novelty seeking dimension of personality. The Conners impulsivity factor includes blurtaciousness and social intrusiveness items that are similar to the DSM impulsivity symptoms, but also includes items that refer to emotional reactivity and instability that are not represented in the DSM symptoms.

Research on self-reported symptoms through adolescence and adulthood suggests a general decline in symptom intensity with a relatively greater decline in hyperactivity-impulsivity (Brown, 1995; Gittelman et al., 1985; Weiss & Hectman, 1993). Brown (1995) suggests that the hyperactivity component should be excluded and that strict reference to the symptoms of inattention in the DSM may not capture all of the key adult symptoms. Research conducted by Brown (1996) on symptoms that commonly occur among adults with attention deficits produced 5 factor-derived symptom clusters. These 5 factors include difficulties with getting ready to work, concentration, effort and energy, emotional interference, and working memory. Brown (1995, 1996) suggests that Adult Attention Deficit (AAD), as opposed to adult ADHD (AADHD) may be a more prevalent problem for adult workers and that some of the key symptoms associated with the disorder may have been ignored in previous research. Adult Attention Deficit (AAD) is defined as a persistent pattern of inattention and related cognitive, emotional, and effort-related symptoms that occur with varying levels of severity and create progressively greater challenges within the personal, academic, and work life of adults as severity increases.

The Brown symptom clusters that represent difficulty organizing/activating to work and difficulty sustaining attention/concentration are a more extensive and multi-dimensional representation of similar items in both the Conners inattention factor and the DSM list of inattention symptoms. Difficulties sustaining energy and effort are not well represented in either the Conners factors or the DSM symptoms but are supported by the state regulation theory of attention disorders (Sanders & Van Duren, 1998) and associated research (Metin et al., 2014). Research on required effort has identified additional effort needed to correctly inhibit a response (Vaidya et al., 1998), additional effort required to complete tasks in the midst of various cognitive constraints (Sáez-Francàs et al., 2012), and the excessive use of energy required to maintain complex coping mechanisms (Palmini, 2008).

The Brown symptom cluster that represents difficulties with emotional interference is a more extensive representation of the emotional liability component of the Conners impulsivity factor which is not represented within the DSM symptoms. Research suggests that the disorder is associated with lower emotional recognition (Kats-Gold, Besser, & Priel, 2007; Ludlow, 2014), higher emotional intensity (Skirrow et al., 2014), hyper-emotional responsiveness (emotional reactivity) involving both positive emotions (e.g., happiness/exuberance) and negative emotions (e.g., frustration/anger) (Brown, 2014; Sjöwall et al., 2013), and greater difficulty regulating emotions (Barkley, 2005; Berlin et al., 2004; Parker et al., 2002; Pisecco et al., 2001; Sjöwall et al., 2013). Research by Sjöwall et al. (2013) suggests that emotional liability contributes independently to symptoms. The Brown symptom cluster representing difficulties with working memory is a more extensive representation of similar items in both the Conners inattention factor and the DSM inattention symptoms that reference forgetfulness.

This research makes use of both the Brown Attention Deficit Disorder Scale (BADDs) that measures the 5 symptom clusters identified by Brown (1995, 1996, 2001), and a part of the CAARS that measures DSM-based hyperactivity (Conners et al., 1999). Use of the BADDs provides a more comprehensive coverage of the adult symptom clusters identified by Conners et al. (1999), Brown (1995, 1996), and the inattention symptoms listed in the DSM. The BADDs does not include measures of DSM hyperactivity (physical restlessness), DSM impulsivity (blurtaciousness, excessive talking and intrusiveness), or the cognitive restlessness cluster contained within the Connors hyperactivity factor. A measure of hyperactivity-impulsivity that directly corresponds with DSM criteria was taken from the CAARS-Screening Version to provide more comprehensive coverage of the symptom clusters, and provide a way of testing differences between AAD and DSM based hyperactivity-impulsivity.

The content and dimensionality of both the general and adult-specific construct requires further clarification including an examination of potentially positive symptoms like creativity, and other symptoms that may contribute to an entre/intrapreneurial orientation (Mannuzza et al., 1993; Nicolaou et al., 2011; White & Shah, 2006, 2011). The appearance of the cognitive restlessness symptom cluster within the Connors hyperactivity factor suggests a link with exploratory excitability and novelty seeking which may help to explain a suspected association between the disorder and entrepreneurial cognition and behavior (Nixdorff, 2008).

Clarifying both the positive and negative impact of the disorder within the nomological network that determines individual and team performance in the workplace is required in order to develop effective multimodal management of the disorder in the workplace. This study helps to address the research gap by conducting an empirical examination of the relationship between AAD and role stress, a key mediator of individual performance in the workplace (Coetzer & Richmond, 2009).

## Role Stress

Research suggests that a significant proportion of the US labor force experiences high levels of stress at work (Gallie & Zhou, 2013; Gorman & Kmec, 2007) which often produces detrimental consequences for both individuals and organizations (Ortqvist & Wincent, 2006). The annual economic cost of work-related stress in the United States is estimated to be between \$200 and \$300 billion (Sulsky & Smith, 2005). Role stress is defined as “a perception of a role indicated by ambiguity, conflict and overload arising from both the characteristics of the individual and the work environment” (Tetrick, 1992, p. 136). Role ambiguity occurs when a person is not sure what their role requires and/or how to do it (Cooper & Dewe, 2004), whereas role conflict occurs when the performance requirements of a role are not compatible (Shenkar & Ziera, 1992). Role overload is defined as having too many things to do within a given period of time (Peterson & Smith, 1995). Role stress is an apex variable within the nomological network that determines individual performance in the workplace because it mediates the opportunity of translating effort and skill into role performance (Coetzer et al., 2009).

Moderate levels of stress referred to as eustress is thought to encourage

performance whereas high levels of stress referred to as distress is considered to be disruptive (Selye, 1976). Bhagat et al. (1985) suggest that some workplace stressors are positive because they “produce a state of challenge, coupled with disruptive pleasure” (p. 203). Recent research has distinguished between challenge stressors that facilitate goal achievement and personal growth, and hindrance stressors that threaten goal achievement (Cavanaugh et al., 2000). Challenge stressors include workload, time pressure and responsibility that evokes a sense of challenge and increases the perceived rewards of mastery which enhances motivation and ultimately performance (LePine, LePine, & Jackson, 2004; LePine, Podsakoff, & LePine, 2005). Research suggests that challenge stressors contribute to constructive attitudes and behaviors like satisfaction, commitment, and efficacy (Beehr et al., 2001; Boswell, Olson-Buchanan, & LePine, 2004; Podsakoff, LePine, & LePine, 2007; Webster, Beehr, & Love, 2011). Hindrance stressors include role ambiguity, role conflict, and organizational politics which are typically experienced as situational constraints that are difficult to address with reasonable effort, resulting in constrained motivation and performance (Boswell et al., 2004; LePine et al., 2004; LePine et al., 2005; Podsakoff et al., 2007; Webster et al., 2011). Role ambiguity and conflict contribute to adverse role stress, whereas workload may be a constructive stressor until stress levels exceed the coping skills and resources available to the employee (Crawford, LePine, & Rich, 2010; Jamal, 1984, 1985; Newton & Teo, 2014; Schaufeli & Bakker, 2004; Singh, Goolsby, & Rhoads, 1994)

The general view that high levels of role stress are detrimental to individuals and organizations has been widely supported and the subject of over 300 journal articles (Ortqvist & Wincent, 2006). Organizational and individual problems associated with role stress include absenteeism (Goetzel et al., 1998), turnover (Mann, 1996), burnout (Holloway & Wallinga, 1990), emotional exhaustion (Posig & Kickul, 2003), deteriorating personal health (Cooper, Dewe, & O'Driscoll, 2001), job dissatisfaction (Cervoni & DeLucia-Waack, 2011), reduced organizational commitment (Johnston et al., 1990), and lower performance (Abramis, 1994; Babin & Boles, 1996a, 1996b; Lindegård et al., 2014; Oldenburg et al., 2014; Rebele & Micheals, 1990).

The potential costs of role stress to both individuals and organizations highlight the importance of understanding individual and organizational causes (Lawson, Savery, & Luks, 2001). Research has shown that the personal attributes of employees influence both their perception of their role and their ability to manage role stress which ultimately influences performance (Connor-Smith & Flachsbart, 2007; Flynn, Chatman, & Spataro, 2001; Harzer & Ruch, 2015).

## Hypotheses

The general proposition guiding this research study is that attention-related disorders and role stress are positively associated. More specifically, this research proposes that each of the symptom clusters associated with attention-related disorders (difficulties with activating/organizing to work, inattention/concentration, energy/effort, emotional interference, short term working memory, hyperactivity) are positively related to role stress. This research also proposes that roles stress will have a significantly stronger association with AAD as opposed to DSM-based hyperactivity-

impulsivity. Finally, this research proposes that the emotional liability symptom cluster will have a significant independent impact on role stress as discovered in a previous research study (Coetzer & Richmond, 2007). This previous finding suggests the need for a separate emotion based theory of the disorder and a potential link with emotional intelligence, an emerging variable within the individual and team performance nomological network.

Adults need to attend to multiple sources of continually evolving role information and they need to reflect on, organize, perceptually close and integrate this information into a coherent understanding of their role requirements. They need to repeat this process on a regular basis to ensure that the role remains aligned with an often fluid performance situation. They need to stay organized, keep up with the pace of work on all key tasks, not just tasks of interest, make quality contributions in a timely manner and adjust as new conditions arise.

Adults need to develop and maintain constructive relationships that support the accurate exchange of role information, the successful negotiation of role requirements and assistance in executing role requirements. Adults also need optimal use of higher order cognitive processes in order to both develop the arguments that support effectively managing the design of a role, and express their perspectives in a non-reactive and socially skilled manner.

Adults who experience difficulties with organizing/activating to work, sustaining concentration, sustaining energy/effort, managing emotional interference and using short term memory are less likely to manage their role effectively resulting in higher levels of role stress. Disordered adults are also more likely to experience more intense negative emotions and perceptions of situations that are perceived as threatening (Gomez et al., 2012) adding to the experience of role stress.

*Hypothesis 1: Adult attention deficit is positively associated with role stress.*

Difficulties with organizing and activating to work, sustaining attention and effort on all key role requirements, and making efficient use of short term working memory will constrain personal productivity and promote an experience of too much work relative to personal resources. A persistent constraint on personal productivity should create a backlog of tasks further contributing to the experience of role overload.

*Hypothesis 1a: Adult attention deficit is positively associated with role overload.*

Difficulties with sustaining attention and effort, managing emotional interference, and using working memory should constrain the development of a clear, detailed and well-integrated perception of a role. These challenges should also make it more difficult to understand role requirements as conditions change. The social challenges caused by impulsivity and emotional reactivity will make it more difficult to engage others in the process of clarifying a role. This situation should contribute to an ongoing sense of confusion about the requirements of a role.

*Hypothesis 1b: Adult attention deficit is positively associated with role ambiguity.*

Difficulties with gathering, integrating and updating role information into a detailed and coherent understanding of a role should constrain the ability to shape a role. Difficulties comprehending a role and managing the complex intellectual, social, and emotional dynamics required to manage role conflicts by negotiating needed adjustments should lead to higher levels of role conflict. The higher likelihood of disordered adults significantly favoring tasks of personal interest that are immediately gratifying and avoiding tasks that are cued to punishment increases the likelihood of role conflict.

*Hypothesis 1c: Adult attention deficit will be positively associated with role conflict.*

Hyperactive and impulsive adults will have difficulty developing and maintaining the constructive relationships that support the efficient and effective communication of role information. They will also have more difficulty managing workload, removing role conflicts and creating greater role alignment with personal preferences when dealing with non-supportive managers and colleagues. Hyperactive-impulsive adults will also have difficulty completing sedentary but necessary tasks in a proper manner, which should contribute to the experience of role overload.

*Hypothesis 2: Hyperactivity-impulsivity (DSM criteria) will be positively associated with role stress.*

The impact of inattention and related cognitive, emotional, and effort-oriented symptoms on role stress will be greater than the social disruption and difficulties with sedentary tasks produced by impulsivity-hyperactivity. Attention deficits and related symptoms also contribute to social disruption when inattentive employees are misperceived as intentionally disinterested, superior and rude. Difficulties with work, effort, and working memory may be perceived as laziness, social loafing, a lack of commitment and a lack of intelligence, and may evoke additional resentment if the disordered person is relatively more reliant on coworkers. Both the lack of social grace and difficulties with sedentary tasks caused by hyperactivity-impulsivity are more likely to be accommodated by managers and coworkers than inattentive employees who are perceived as lazy, disinterested, rude, a burden, and not very intelligent. Hyperactive-impulsive adults may overcome social deficits by being more forceful in managing the elements of a role whereas inattentive types may not be able to develop or sustain the required arguments and effort. The likelihood of a relatively greater reduction in hyperactivity-impulsivity symptoms also suggests that adult attention deficit will have a significantly greater association with role stress. The relatively greater presence, impact and difficulty managing attention deficits and related cognitive symptoms with regard to a role will result in a relatively stronger association with role stress.

*Hypothesis 3: Adult attention deficit will have a significantly stronger relationship with role stress than hyperactivity-impulsivity (DSM criteria).*

The rising cognitive and emotional load of personal, academic and occupational roles suggests that the emotional liability component of the disorder will contribute significantly to the experience of role stress. Emotional liability has both a bottom-up and top-down component. The top-down component relates to emotional recognition and regulation which is supported by the higher order executive functions, whereas the prevalence of disruptive moods and the intensity and frequency of disruptive episodic feelings, is more of a bottom up process. Although the top-down component is likely to be associated with other symptoms clusters that are linked to executive functioning, the emotional liability symptom cluster should be relatively independent due to the significant presence of bottom-up components. Previous research conducted by Coetzer and Richmond (2009) suggests that the emotional liability component of AAD makes a significant and independent contribution to role stress.

*Hypothesis 4: Difficulty with emotional interference will have a significant, positive relationship with role stress after controlling for all the other dimensions of adult attention deficit.*

## Methods

### *Subjects and Procedures*

The subjects were 158 business graduate students attending universities in the United States. All of the subjects were engaged in paid employment and were actively managing a variety of personal, academic, and occupation roles. Data collection took place while students were participating in a course that required them to work on an autonomous project team that was responsible for completing a significant business project. In addition to managing roles outside of the course, participation in the autonomous project team required the subjects to gather, analyze, integrate and update role information. They also needed to negotiate with others in order to shape their role requirements and avoid and/or manage role conflicts. Each subject was asked to identify someone who knew them well and would be willing to complete an honest assessment of their behavior. The observers completed observer versions of both the Brown Attention Deficit Disorder Scale (BADDIS) and the DSM hyperactivity-impulsivity components of the Screening Version of the Conners Adult ADHD Scale (CAARS). The subject observers completed the measures under conditions of anonymity. Each of the subjects completed a self-report measure of role stress.

Principle components factor analysis with a Varimax rotation were used to confirm the dimensionality of the role stress measure and examine the contribution of the individual items to the factors. Product moment correlations were used to test all the hypotheses regarding associations between the measures. The Williams T2 statistic (Williams & Lambert, 1959) as recommended by Steiger (1980), was used to determine whether role stress had a significantly stronger association with AAD than DSM based hyperactivity-impulsivity. Simultaneous linear regression was used to test the hypothesis that difficulty with emotional interference has a significant positive relationship with role stress after controlling for all the other dimensions of adult attention deficit and DSM hyperactivity-impulsivity.

## Measures

### *Adult Attention Deficit (ADD)*

The Brown (1996, 2001) Attention Deficit Disorder Scale (BADDs) was used in this research study to measure adult attention deficit (AAD). The instrument was designed and validated for use with adults 18 years and older, and focused on the measurement of attention deficit and related cognitive symptoms. The 40 self-report items on the BADDs are grouped into 5 clusters of conceptually related symptoms of AAD. The observer version rephrased the questions from first person singular to third person singular to support observer ratings (e.g., “I am disorganized” was changed to “the person being described is disorganized”). Organizing and activating to work (*cluster 1*) measured difficulty in getting organized and started on tasks (e.g., “experiences excessive difficulty getting started on tasks” and “needs to be reminded by others to get started or to keep working on tasks that need to be done”). Sustaining concentration (*cluster 2*) measured problems in sustaining attention while performing tasks (e.g., “listens and tries to pay attention but soon becomes distracted” and “misses important information”). Sustaining energy and effort (*cluster 3*) measured problems in maintaining the required energy and effort while performing tasks (e.g., “runs out of steam and doesn’t follow through” and “cannot complete tasks within the allotted time”). Managing affective interference (*cluster 4*) measured difficulty with moods, emotional reactivity, and sensitivity to criticism (e.g., “is easily irritated” and “has a short fuse with sudden outbursts of anger”). Utilizing working memory and accessing recall (*cluster 5*) measured forgetfulness in daily routines and problems in recall of learned material (e.g., “intends to do things but forgets” and “forgets to bring needed things”). Each question used a 4-point scale ( $0=never$ ,  $1=once\ a\ week$ ,  $2=twice\ a\ week$ ,  $3=almost\ daily$ ) to rate the frequency with which the behavior was demonstrated by the observed person. The total score for a symptom cluster was generated by adding the scores on the questions associated with that symptom cluster. A total score for AAD was generated by adding up the scores on all of the questions. The observers completed the assessment under conditions of anonymity.

### *Conners Adult ADHD Rating Scale (CAARS)*

The Connors Adult ADHD Rating Scale (CAARS) was used to measure DSM-based hyperactivity-impulsivity. The instrument was also designed and validated for use with adults 18 years and older (Connors et al., 1999) and is among the most widely used instruments for measuring AADHD (Sáez-Francàs et al., 2012). There are both long and short versions of the CAARS which are available in self-report, observer, and screening forms. The observer-screening form contains 30 questions of which 9 correspond directly with the DSM list of symptoms for hyperactivity-impulsivity. These questions were used to measure DSM hyperactivity-impulsivity (e.g., “talks too much”), and were scored on a Likert-type scale ( $0 = not\ at\ all\ or\ never$ ;  $1 = just\ a\ little$ ,  $once\ in\ a\ while$ ;  $2 = pretty\ much$ ,  $often$ ; and  $3 = very\ much$ ,  $very\ frequently$ ). A total hyperactivity-impulsivity score was generated by adding up the scores on each of the questions. The observers completed the assessment under conditions of anonymity.

### Role Stress

Items for measuring role ambiguity, role conflict and role overload were generated after reviewing the Role Stress Inventory (Rizzo, House, & Lirtzman, 1970), Occupational Environment Scale (Osipow & Spokane, 1983), Role Clarity Index (Kahn et al., 1964), and the Work Stress Inventory (Barone et al., 1984). The items needed to be worded in a more general manner so as to capture role ambiguity, role conflict, and role overload as it pertained to the more general context faced by working students. Four items were chosen for each of the dimensions of role stress. An example item for role ambiguity was: "I don't have a clear sense of the important tasks that I need to complete." An example item for role conflict was: "The important tasks I need to do often conflict with one another." An example item for role overload was: "I have more tasks that I can effectively manage." Subjects used a 7-point Likert scale (1=*strongly disagree*, 2=*disagree*, 3=*slightly disagree*, 4=*neutral*, 5=*slightly agree*, 6=*agree*, 7=*strongly agree*) to rate the extent to which they agreed with each item. Scores for each dimension of role stress were derived by adding up the scores for the associated items. A total score for role stress was derived by adding up the scores for each of the dimensions.

## Results

### Descriptives, Factor Analysis and Correlations

A principle components factor analysis with an orthogonal rotation (Varimax) was conducted to examine the structure of the role stress measure (see Table 1).

**Table 1:** Principle Components Factor Analysis of Role Stress Items with a Varimax Rotation

	Component		
	1	2	3
With regard to your personal, academic and occupational roles:			
I have more tasks than I can effectively manage	0.84		
I'm not able to complete all the tasks I need to get done	0.81		
I'm worried that I have more tasks than I can cope with	0.78		
I constantly feel overwhelmed by the tasks that I need to do	0.77		
I don't have a clear understanding of the important tasks in my life		0.90	
I'm not clear about all the tasks that I need to do		0.86	
I'm confused about many of the tasks I need to do		0.88	
I don't have a clear sense of how all the tasks I need to do fit together		0.72	
Many of the important tasks that must be done prevent me from doing other important tasks			0.86
Successful completion of many of my important tasks means poor performance on others			0.86
I often have difficulty deciding which tasks to do because they conflict with doing other tasks			0.78
The important tasks that I need to do often conflict with one another			0.67

The factor analysis produced 3 factors with the items for role overload, role conflict, and role ambiguity each forming a separate factor. Factor loadings for role overload (0.84 to 0.77), role ambiguity (0.90 to 0.72), and role conflict (0.86 to 0.67) suggested that each item was making a meaningful contribution to the measure. The Cronbach

alpha of internal reliability coefficients for each of the factors ranged from 0.86 to 0.89, and none of the internal reliability coefficients could be improved by eliminating items. This suggested that each dimension of the measure had good internal reliability and each item was making a meaningful contribution to the measure. Means, standard deviations, and correlations appear in Table 2.

**Table 2:** Means, Standard Deviations, Internal Reliabilities and Correlations

	Mean	Std Dev	1	2	3	4	5	6	7	8	9	10	11
1 Role Overload	17.2	4.91	0.87										
2 Role Ambiguity	12.7	4.44	.39**	0.89									
3 Role Conflict	15.07	4.45	.53**	.46**	0.86								
4 Total Role Stress	44.96	11.1	.81**	.76**	.82**	0.90							
5 Difficulty Organizing and Activating to Work	10.59	4.55	.20**	.32**	.30**	.34**	0.84						
6 Difficulty Sustaining Attention and Concentration	12.42	4.46	.19*	.23**	.33**	.31**	.58**	0.79					
7 Difficulty Sustaining Energy and Effort	8.73	4.58	.28**	.32**	.37**	.40**	.71**	.58**	0.85				
8 Difficulty with Emotional Interference	6.98	3.52	.35**	.26**	.31**	.38**	.62**	.48**	.56**	0.83			
9 Difficulty with Short Term Working Memory	7.04	3.36	.23**	.34**	.30**	.36**	.55**	.43**	.62**	.47**	0.78		
10 Adult Attention Deficit	43.78	16.58	.31**	.36**	.40**	.44**	.87**	.77**	.87**	.76**	.74**	0.88	
11 DSM-Hyper/impulsivity	6.52	4.71	.05	.06	.11	.09	.28**	.24**	.15*	.23**	.27**	.29**	0.82

Note 1: Cronbach Alpha internal reliabilities are shown on the diagonal  
 Note 2: \*\* = correlations statistically significantly at the level  $p < 0.01$  (2 tailed) \* =  $p < 0.05$  (2 tailed)

All variable distributions were approximately normal and demonstrated reasonable variation across their respective scales. No univariate or bivariate outliers were considered problematic and the product moment correlations revealed significant associations between the variables. Cronbach alpha internal reliability coefficients ranged from ( $\alpha = 0.78$ ) to ( $\alpha = 0.90$ ) which suggested good internal reliabilities. The linear regression produced no problematic residuals.

### Empirical Tests of Hypotheses

The significance threshold for all the empirical tests was set at  $\alpha = 0.05$  (2 tailed). The correlation between AAD and role stress (*Hypothesis 1*) was statistically significant ( $r = 0.44$ ,  $p < 0.01$ ) and provided support for the hypothesis that AAD is associated with role stress. The correlation between AAD and role overload (*Hypothesis 1a*) was statistically significant ( $r = 0.31$ ,  $p < 0.01$ ) which provided support for the hypothesis that AAD is associated with role overload. The correlation between AAD and role ambiguity (*Hypothesis 1b*) was statistically significant ( $r = 0.36$ ,  $p < 0.01$ ) which provided support for the hypothesis that AAD is associated with role ambiguity. The correlation between AAD and role conflict (*Hypothesis 1c*) was statistically significant ( $r = 0.40$ ,  $p < 0.01$ ) which provided support for the hypothesis that AAD was associated with role conflict. The correlation between DSM hyperactivity-impulsivity and total role stress (*Hypothesis 2*) was not statistically significant ( $r = 0.09$ ,  $p = 0.24$ ) which did not provide support for the hypothesis that DSM hyperactivity-impulsivity is associated with role stress. The Williams T2 test was significant ( $t = -4.08$ ,  $p < 0.00$ ) which provided support for the hypothesis that AAD has a significantly stronger association with role stress than DSM hyperactivity-impulsivity (*Hypothesis 3*). The simultaneous

liner regression of all the adult symptom clusters on role stress resulted in a significant beta coefficient ( $\beta=0.20$ ,  $\text{sig}=0.035$ ) for difficulty with emotional interference. This provided support for the hypothesis that difficulty with emotional interference has a significant positive relationship with role stress after controlling for the other symptom clusters (*Hypothesis 4*).

**Table 3: Results of Regressing the Symptom Clusters of AAD on Role Stress**

R	R Square	Adjusted		Std. Error Estimate	F	Sig.
		R Square	df			
.47	0.22	0.19		9.94		
	Sum of Squares	df	Mean Square			
Regression	4282.93	6.00	713.82	7.21	0.00	
Residual	15042.62	152.00	98.96			
Total	19325.56	158.00				
	Beta	Sig				
DOAW	-0.03	0.77				
DSAC	0.10	0.31				
DSEE	0.16	0.18				
DWEI	0.20	0.03				
DWWM	0.16	0.90				
DSM-HI	-0.40	0.60				

*Note: DOAW = difficulty organizing and activating to work, DSAC = difficulty sustaining attention and concentration, DSEE = difficulty sustaining energy and effort, DWEI = difficulty with emotional interference, DWWM = difficulty with working memory, DSM-HI=DSM based hyperactivity-impulsivity*

## Discussion

### General

The results of this research confirmed an association between adult attention deficit and role overload, role ambiguity, and role conflict. The direction of the association between AAD and role stress cannot be determined from this study but there is probably a bidirectional relationship that may result in a reinforcing and debilitating cycle. DSM-based hyperactivity-impulsivity was not significantly associated with role stress and AAD had a significantly stronger association with role stress. This supported the view that the DSM-based hyperactivity-impulsivity component of the disorder was relatively less prevalent in adults and less impactful on adult functioning. The exclusion of this symptom cluster required careful consideration because DSM hyperactivity-impulsivity was significantly correlated (weak to somewhat moderate strength) with all the other symptom clusters which suggested a separate but related dimension with limited impact on role stress.

Results from the simultaneous regression suggested that the emotional liability component of the disorder may have made a significant and unique contribution to difficulties within the nomological network that determined individual performance in the workplace. The disorder may be associated with emotional intelligence (EI) which is an emerging variable within the individual and team performance nomological network (Salovey & Mayer, 1990; Goleman, 1996; Kelley & Caplan, 1993; Bell, 2007;

Koman & Wolff, 2008; Landale, 2007). Many practitioners and researchers consider EI to be an apex variable that influences many other variables within the performance network (Goleman, 1996; Koman & Wolff, 2008; Landale, 2007). An association between AAD and EI may help to explain how the disorder influences performance. This supports the need for an emotion-based theory of the disorder which will guide an examination of the relationships between AAD, emotional intelligence, and performance in organizations.

#### *Implications for Organizations and Education Institutions*

Organizations wishing to limit disruptive levels of role stress experienced by their employees need to be aware of the influence of AAD. The emergence of more fluid roles, employee empowerment, self-regulation, teams, and project-oriented work may be especially challenging for disordered employees, even though they may have a preference for working without supervision. Disordered employees without the necessary support will not be able to leverage their strengths and may constrain the performance of interdependent others.

The increasing availability of effective coaches (life, organizational, task, peer, manager as coach, etc.) (Theeboom, Beersma, & van Vianen, 2014) offers a potential substitute for close supervision and a potentially more accepted and developmental resource for helping disordered employees manage their role. Effective organizational coaches could address a wide range of cognitive, emotional and behavioral deficits, and protect the employee from the reinforcing cycles of failure that many disordered employees experience (Nadeau, 1997). Effective organizational coaches may also help disordered employees manage their relationships with managers and coworkers which will should help to reduce role stress. Establishing a reciprocal peer coaching system that addresses challenges at the individual and relational level may add considerable mutual value, especially for disordered employees who need to address interdependent role issues with their coworkers. Coaching processes that contain the necessary structure and content for supporting disordered employees are needed.

The effective use of teams represents a considerable opportunity for distributing the creative benefits associated with the disorder while managing the deficits. Team members can help disordered employees to activate, organize, stay on track, maintain a balance between OCB and priority work tasks, avoid experiences of failure and manage challenging emotions. Supportive team-members can also assist disordered team members to better manage their role and reduce role stress. In return, team members can benefit from the creativity that disordered employees may offer. This will require the careful design of teams to ensure optimal person-role fit and supportive team development interventions. Team building that educates team members about the disorder and addresses the social and task performance challenges while taking advantage of the benefits is required. Team building activities should include a significant emphasis on role (re)negotiation which should help to reduce role stress. Introducing regular role design and role management conversations should help all employees to regularly clarify role requirements, establish and effectively manage workload, align role requirements with strengths, and reduce both intra and inter role conflicts. Structured collaborative decision making processes that provide team

members with the opportunity to locate themselves where they fit best should improve person-role fit. Pairing disordered employees with less creative but more organized, emotionally intelligent, assertive, and cooperative employees may offer mutual benefit and provide needed support for managing a role more effectively. The independent and significant contribution of emotional lability reinforces the potential value of training, coaching and team interventions that build emotional intelligence.

The multi-modal approach to managing the disorder in the workplace suggests that sustained improvement will depend on other forms of support like the general education of both managers and employees, establishing supportive organizational cultures and climates, appropriate medication, and coaching/training that address key underlying cognitive, emotional, and behavior deficits (e.g., retention training to support short term working memory). The provision of employee assistance programs that provide disordered, potentially disordered, and non-disordered employees with information and opportunities for assessment is an important part of the constructive management of employee diversity. This will help to create a more inclusive, supportive, and responsive organizational culture. This will also increase the likelihood of the employee seeking out other important parts of multimodal treatment, particularly medicinal support.

Education institutions, like management programs within universities, need to assist new managers to recognize and respond to the symptoms of the disorder in both themselves and others. Early diagnoses and treatment may help to prevent the exacerbating cycles of failure that often accompany the condition. Educating future managers about the condition will help to ensure that they do not become a contributor to the emergence and reinforcement of such cycles through ignorance or the inability to be supportive. Communication skills training/coaching, peer coaching systems, and student team interventions that emphasize cooperative role management will help prepare all future managers for the challenges of the contemporary workplace. Increasing social, economic and legal pressures to provide reasonable accommodation for functional but disordered employees and take appropriate advantage of employee diversity underscores the general social value of this research.

#### *Limitations and Suggestions for Future AAD Research*

This research study is limited by measures of AAD that may not fully represent all the key symptom clusters and the use of both an indirect workplace sample and a more general measure of role stress. Future research requires use of samples and a role stress measure that is more directly associated with the workplace. The content validity and dimensionality of the adult form of the disorder, including the identification and confirmation of subtypes, requires further research. Effective organizational behavior research of the disorder requires a validated instrument with self-report and observer versions that encompasses all the key adult symptom clusters and represents all the key underlying systems that comprise the total etiology. Such an instrument should also include any constructive manifestations of the disorder like creativity and an entre/intrapreneurial orientation. Such an instrument will provide greater ability to explore both the negative and positive influence of the disorder within the individual and team performance nomological network and help to explain suspected associations

with important positive states like entre/intrapreneurial cognition and behavior. The inclusion of items related to exploratory excitability and novelty seeking with the Conners measure of adult ADHD supports the need for further consideration of the items entered into the instrument validation process. The inclusion of additional items will require justification provided by ongoing research that examines the relationships between existing measures and suspected correlates, including work related variables. The development of coherent and comprehensive theories that explain the various systems that comprise the total etiology are also needed to identify potential symptoms, including an emotion oriented theory of the disorder.

Future research that examines the influence of the disorder on apex causal and outcome variables within the individual and team performance nomological network is urgently needed. Research on variables like work-related efficacy, emotional intelligence, self-leadership, task/project management, time management, creative problem solving, diversity management, and conflict management will help to identify the influence of the disorder on key variables throughout the performance network. Research on key performance outcomes like productivity, quality and cohesion in key task/performance contexts like idea generation in product development teams will help identify task and context specific impacts. This research supports the general proposition that the disorder has significant influence within the nomological network that determines individual, team, and organizational performance.

#### *Providing a Roadmap for Research on ASD in the Workplace*

Lessons learned from the review of AAD research helps to ensure more efficient and effective research on adult ASD in the workplace. Even though the disorder remains prevalent through adolescence and childhood, the adult form of the disorder may possess a somewhat different symptom structure and relative intensity of symptom clusters. Identifying and addressing symptom clusters typically ignored because they have a more neutral or positive impact may also undermine the content validity of the adult construct. Taking time to confirm the content and structure of adult ASD, including symptom clusters with potentially positive associations, is necessary to ensure appropriate measurement and research going forward.

Addressing the issue of how to determine the level of the disorder through the use of a symptom count or dimensional measurement, and whether to emphasize categorical (disordered vs. healthy) or correlational analysis is important for providing clear and comprehensive research outcomes. Although symptom clusters are typically related and therefore present a potential multicollinearity problem, the use of simultaneous linear regression with all the symptom clusters as independent variables is important for determining relatively independent nomonological networks between particular symptom clusters and particular organizational behaviors. This is important for ensuring that intervention strategies include all the actions required to address all the key and relatively independent aspects of the symptom structure. The use of simultaneous linear regression that includes all the symptom clusters should be a part of the process of researching the relationship between adult ASD and organizational behavior variables of interest, unless the multicollinearity (variance inflation factors and tolerance) becomes extreme, which has seldom been the case when researching

the relationship between AAD symptom clusters and organizational behavior variables.

The multimodal approach to treating neurobehavioral disorders must be kept in mind when developing strategies for eliminating, remediating, accommodating and seeking appropriate organizational advantage from a NBD. The multimodal approach suggests that successfully addressing a disorder requires: (1) medicinal interventions, (2) cognitive, emotional, and behavioral interventions (CEBI), and (3) environmental adjustment or alignment. Researchers and practitioners must also keep in mind that CEBIs take place at various levels, ranging from deeper (distal) therapeutic interventions that target the roots of symptom clusters to more proximate interventions that address more immediate (proximal) manifestations.

The growing recognition that NBDs are prevalent within the global workforce and have a significant economic impact supports the need for conducting rigorous research on the relationship between NBDs and organizational behavior. A review of research on AAD (most commonly diagnosed NBD) in the workplace would help to provide guidelines for researching other NBDs in the workplace, like ASD.

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# How Human Resource Management Can Best Support Employees with Autism: Future Directions for Research and Practice

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*The purpose of this paper is to explore the current research and understanding of how an organization's human resource management function may play a role in the employment of individuals with Autism Spectrum Disorder (ASD). First, brief mention is made of the and accompanying symptoms of ASD as they relate to often necessary employment skills. Secondly, the existing literature will be described. Finally, a discussion will be made regarding how the various functions, within human resource management, need to be addressed to provide for a more inclusive environment for individuals with ASD; including areas for future research. While the paper is organized around traditional human resource management roles and responsibilities, the responsibility for effective workplace management, design, and culture needs to be embedded in the entire organization in order to be most effective and supportive.*

An estimated 500,000 children with autism spectrum disorder (ASD) are due to enter the United States workforce in the next decade. Meanwhile, 4 out of 10 young adults with autism never work in their early twenties (Moodie, 2016). Most of the existing research surrounding autism focuses on treatment and causes as it pertains to early diagnosis in young children. Relatively little is known regarding how to support postsecondary success, especially for employment (Hendricks, 2010).

With diagnosis often occurring at a young age, many individuals with ASD are able to get the necessary support they need throughout their schooling. For example, when enrolled in the primary school system, individuals diagnosed with ASD are able to get personal, customized treatment and accommodation to fulfill educational goals. However, once out of secondary school, many individuals with ASD are confronted with the fact that their symptoms are seen as both unfamiliar and even disruptive. A national study conducted in the United States found that among youth with Autism Spectrum Disorders, 34.7% had attended college and 55.1% had held paid employment during their first 6 years out of high school (Shattuck et al., 2012). That same study also reported that more than 50% of the youth who left high school within the past 2 years had no participation in employment. This research illustrates the challenge that while individuals with ASD can often obtain and reach educational goals, they struggle to obtain and maintain employment. Employment options for those with ASD include supported or competitive employment. In some cases, supported employment for individuals with ASD can provide an environment that promotes self-confidence and has been shown to improve cognitive performance (Hendricks, 2010). Supported employment often involves some degree of formal training for employment preparedness, job matching according to abilities and individual propensities, and ongoing support in the workplace (often by a vocational rehabilitation professional) (Nicholas et al., 2015). Regardless of whether an individual with ASD receives vocational rehabilitation support in an employment setting, there are many ways an organization can address becoming a more inclusive environment for those with ASD.

Most developed countries have national legislation aimed to prevent employment discrimination for people with disabilities, including ASD. For example, in the United States, there is the Americans with Disabilities Act of 1990 (ADA) and its amendments. The act is designed to prohibit discrimination and ensure equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation. This requires employers to hire the most qualified applicants, regardless of their disability, and must provide reasonable accommodations when necessary. However, many developed countries are still in the beginning stages of legislation that addresses support for those with autism spectrum disorder. In 2013, The Scottish Parliament adopted a 10-year plan to improve support for individuals with autism, however, only one recommendation addressed the issue of employment (McKiernan, 2013). Like the United States, most other countries remain in the beginning stages of research and data collection when it comes to how to employ and accommodate the specific population of individuals with ASD. New legislation in the United States, The Workforce Innovation Opportunity Act of 2014, requires a collaborative workforce system which engages and serves businesses that want to understand more about the benefits of hiring and maintaining individuals with disabilities. Hopefully employers will consider the unique skills and abilities of individuals with autism in their efforts.

## **Autism Spectrum Disorder**

Currently, it is estimated that 1 in 88 children in the United States has autism

spectrum disorder. A decade ago only 1 in 49 children had the disorder. This increase can be attributed to better diagnosis, as well as broader definitions of what constitutes autism spectrum disorder (Norton, 2012). According to the United States Centers for Disease Control and Prevention, ASD is a group of developmental brain disorders that can cause significant social, communication, and behavioral challenges. Since May 2013, psychiatrists and psychologists have been using the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) to diagnose individuals with these types of developmental disorders. Autism spectrum disorder, as defined in the DSM-5 (299.0, F84.0), contains an outlined list of diagnostic criteria including persistent deficits in social communication and interaction, restricted or repetitive patterns of behavior, and hyper- or hypo-reactivity to sensory input or unusual interests in sensory aspects of the environment. The DSM-5 further defines severity levels for autism spectrum disorder ranging from Level 1 to Level 3. Level 1 on the autism spectrum scale requires support and is defined as noticeable impairments within a social setting coupled with a decreased interest in social interactions. These types of individuals can display an inflexibility of behavior causing significant interference with functioning. Level 3 on the Autism Spectrum scale requires substantial support and is defined as severe deficits in verbal and nonverbal social communication skills, causing severe impairments in functioning. Individuals at Level 3 are very limited in social interaction and have extreme difficulty coping with change. However, with the correct diagnosis and the right amount of support, individuals with ASD often have the ability to engage in all of life's activities, including paid employment.

Hiring employees with ASD can be of mutual benefit for both the individual and the company. Individuals that are higher functioning have often achieved educational success (i.e., a college education), are technologically astute (have high interests and abilities with both technology and data) and can become productive employees with the right environment and training. Once employed, these individuals often demonstrate a fine attention to detail and intense focus resulting in increased work output (Hendricks, 2010). This specific population has a unique set of skills that continue to be masked by their social, communication, and behavioral challenges. It is crucial to remember that employees with autism spectrum disorder do not always pick up on social norms. Tasks a neurotypical individual (someone without ASD) would consider "common sense," don't always make as much sense to those with ASD. For example, in situations of heightened anxiety, an individual with ASD may exhibit physical or verbal ticks that could be disruptive, or even deemed unacceptable in a traditional working environment. While that individual may know that removing themselves from the situation by taking a break or performing a self-soothing activity (e.g., rocking in a chair or walking) may help, neither are always available nor possible. As described, the impact of ASD can affect social skills, verbal communication, and challenges with managing change. These are skills often deemed necessary in an employment setting and especially in any opportunities requiring managerial responsibilities; these deficiencies can create significant barriers for successful employment.

### *Previous Research*

With the rate of individuals who have an autism spectrum disorder growing

exponentially, postsecondary support studies are receiving increased attention. However, this research often has a rather limited sample size and is focused on anecdotal examples of how various individuals succeed at work. The focus is often geared toward vocational rehabilitation practitioners or autism scholars in order to guide their work to support and secure employment for individuals with ASD in supported work environments (e.g., Chappel & Somers, 2010; Garcia-Villamizar, Ross, & Wehman, 2000; Hendricks, 2010). Often the research on those with autism has focused on sheltered work (e.g., Evert et al., 2012) which is often the norm for individuals with ASD. It has limited generalizability due to its small sample size. For instance, one study of three individuals with ASD demonstrated an increase in work performance when given extensive training prior to the position (Burke et al., 2010). Another study of two different individuals with autism identified an increase in productivity and independence when supported by a Positive Behavior Support Facilitator, one through technology, and the other through an actual mentor. (Ham et al., 2014). Based on the existing research and a recent literature review focused on employment trends for individuals with ASD (Chen et al., 2015), it is clear that vocational support can be useful for the workplace inclusion of individuals with autism spectrum disorder. Chen et al.'s (2015) evaluation outlines future clinical practices for professionals working in this field but ignored how organizations may need to be shaped in order to create more inclusive environments. While these studies can introduce the challenges in providing support to these individuals to secure and maintain employment, the employment issue should also be considered from the organizational perspective. With recent legislation targeted toward eliminating sheltered workshops (where individuals work in isolated environments and often receive below minimum wage), organizations must become more supportive both of creating employment opportunities for those with ASD as well as scholars conducting meaningful research.

The management literature is beginning to examine how to employ people with disabilities. There are several examples that focus on removing employment barriers (e.g., Kulkarni & Lengnick-Hall, 2014; Lengnick-Hall, Gaunt, & Kulkarni, 2008) and learning about employee experiences with requesting any needed accommodation (e.g., Baumgärtner et al., 2015) or disclosure (e.g., von Schrader, Malzer, & Bruyère, 2014) but this research often ignores the unique challenges of employing those with ASD. Bruyère, Erickson, and VanLooy (2000) conducted a study that dealt with issues in the employment provisions of the Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973. The results of the study revealed that employers are responding to their respective disability nondiscrimination legislation by making accommodations needed by applicants and employees with disabilities. Bruyère et al. (2000) based their analysis on the notion that the implication of the employment provisions of this legislation largely falls in the realm of human resource management professionals. However, many individuals often don't request needed accommodation during the application process (e.g., inability to use technology for online applications/employment tests, building accessibility for interviews) or even once they are hired. The ability to create an inclusive work environment may begin with the traditional functions of human resource management, regardless of legal mandate.

There are two recent management studies that focus on the unique challenges for

those with ASD in the workplace, both by Johnson and Joshi (2014, 2016). Their research has focused on the role of disclosure for those with ASD, as well as how the age of diagnosis may impact workplace experiences (Johnson & Joshi, 2014, 2016). Their research illustrates how the context of employment can impact an individual's success and employment experiences. The lessons presented here can also be used to create more inclusive workplace environments for those with other cognitive or social disabilities.

## **Implications for Human Resource Management Responsibilities**

Within any organization, it is often the human resource management function that defines and administers programs and policies aimed at addressing the functional areas of managing human capital. The following sections present human resource management considerations for both research and practice to create a more inclusive environment for individuals with ASD. Table 1 outlines these various functions in light of what human resource professionals need to consider, areas to review to ensure an inclusive workplace for job applicants and employees with ASD and research questions future scholars may want to examine to generate a better understanding of what these individuals may need to be successful in securing and maintaining employment.

It is important to note that in the following discussion there are many examples of modifications to human resource practices that could be deemed amenable to issues of universal design. Universal design employs principles that redesign space or processes that can have a positive impact on many individuals, not just those with a disability. For example, automatic door openers (designed to assist those who may have mobility issues impacting their ability to open a door) can benefit able-bodied individuals who may need assistance in opening a heavy door. Computer screen reader programs are designed for those with visual impairments but may be helpful for those without visual impairments.

## **Recruitment**

Any organization must have programs in place to create a suitable applicant pool for open positions. In today's workplace, this often includes electronic procedures for both application management and advertising jobs. Most organizations use current job descriptions to create postings for advertising their job opportunities. Both the description and posting should include simple language to make it easy to understand what are the required skills, basic job duties, and instructions on how to apply.

### *Sourcing Candidates*

When sorting through large numbers of employment applications, any organization needs to determine if their sourcing strategy is inclusive to job applicants with ASD.

**Table 1:** *Human Resource Management Areas to Consider to Address the Employment of Individuals with ASD*

Function	Areas to Consider	Organizational Activities	Research Questions
Recruitment	<ul style="list-style-type: none"> <li>Sourcing Candidates</li> <li>Application Process</li> <li>Interview Process</li> </ul>	<ul style="list-style-type: none"> <li>Are your sourcing activities inclusive of individuals with ASD?</li> <li>Is the application process non-discriminatory?</li> <li>Does your application present a legal conflict for those needing support to complete the process?</li> <li>What screening methods could be employed to minimize applicant anxiety and determine candidate qualifications (i.e. moving beyond the interview)?</li> </ul>	<ul style="list-style-type: none"> <li>How do individuals with ASD secure competitive (non-supported) employment?</li> <li>What are the recruitment best practices to expand the candidate pool to adults with ASD?</li> <li>What alternative screening methods are effective for applicants with ASD?</li> </ul>
Retention & Performance Management	<ul style="list-style-type: none"> <li>Orientation</li> <li>Onboarding</li> <li>Mentoring</li> <li>Work Schedule</li> <li>Task breakdown</li> <li>Co-worker training</li> <li>Performance management</li> </ul>	<ul style="list-style-type: none"> <li>Deliver materials in a more personalized manner or prior to beginning of employment</li> <li>Make sure a suitable mentor is assigned and available</li> <li>Communicate directions and expectations in hard copy.</li> <li>Examine the tasks related to performance evaluation and essential job duties</li> </ul>	<ul style="list-style-type: none"> <li>Examine how novel practices predict job performance, turnover and retention measures for individuals with ASD?</li> </ul>
Total Rewards	<ul style="list-style-type: none"> <li>Motivation</li> <li>Incentive Pay</li> <li>Benefits</li> </ul>	<ul style="list-style-type: none"> <li>Determine proper career paths and rewards for employees (inclusive of those with ASD)</li> <li>Gather resources available to share with employees with ASD to manage any benefit coordination with government support</li> </ul>	<ul style="list-style-type: none"> <li>Examine longitudinally how various total rewards systems address the needs of employees with ASD?</li> </ul>
Health & Safety	<ul style="list-style-type: none"> <li>Workplace (space and noise level)</li> <li>Work Schedule/Breaks</li> </ul>	<ul style="list-style-type: none"> <li>How to create an inclusive environment through office design?</li> <li>How to define an appropriate work schedule that adheres to appropriate labor laws and perhaps the ADA?</li> </ul>	<ul style="list-style-type: none"> <li>How the adjustments made to an organization's workplace impacts both individuals with and without ASD?</li> <li>How might non-standard work requests relate to the role of disclosure and accommodation under the ADA?</li> </ul>

Often companies utilize overly specific job descriptions to develop job postings and this can eliminate the opportunity for an individual with ASD to even be considered for a position. While neurotypical individuals may apply (even to positions where they may or may not broadly meet the criteria), individuals with ASD often interpret the language in a job posting literally and may not apply if they do not meet only one of several defined criteria (which could be desired rather than required). As mentioned earlier, many individuals with ASD are highly skilled in terms of technology and detail oriented tasks. Organizations need to consider if the job application process, locations of position postings, and general recruiting tactics are inclusive for those with ASD. In addition, the Dandelion Effect also suggests to “design jobs to maximize potential for particular individuals to create value” (Austin & Sonne, 2014). Instead of rewording job descriptions, restructuring the job as a whole in a way that showcases their skill sets to create value can be very beneficial. This strategy helps create value through innovation and it also helps give these individuals with ASD opportunities for long-term positions that are tailored to their skills. The biggest issue in hiring these individuals can be their lack of work experience. Creating positions that provide training and do not require a substantial amount of previous experience can increase the candidate pool.

### *Application Process*

Recruiting individuals with autism is a difficult task considering the limitations under the ADA. Being that applicants are not required to disclose their disabilities, interviewers are given the daunting task of assuming no accommodations are needed. So how does a company come to provide reasonable accommodations for an individual if they do not know what accommodations are needed? The many grey areas of hiring an individual with ASD are left to the Human Resources department to decide. One of the biggest sources of protection for this department is through the application itself. Every application requires the applicant to “sign here”, declaring all information to be true as well as guaranteeing they have the mental and legal capacity to sign. Often times, individuals with ASD lack the legal capacity to be able to sign any legal documents themselves, and therefore require a parent or another individual to act as their legal guardian. In these cases, the individual will have to take the application home to get signed or their signature is void. If the signature is void, the company is not liable for hiring the individual since it was under false pretense.

In addition, applications and resumes can be somewhat of a struggle for those with ASD. Tailoring a resume to fit a specific employer's needs can be a difficult task for many people, disabled or not (Wilczynski, Trammel, & Clarke, 2013). Gaining experience in any field has also proven an incredibly difficult task for applicants with autism spectrum disorder. Focusing on the overall skill set rather than experience will prove most beneficial, especially when hiring individuals with ASD. One challenge for organizations interested in expanding their applicant pool for those with ASD is the legal restriction of sourcing candidates based on a disability or other protected class status. While an organization cannot include criteria that candidates with specific disabilities are preferred, the organization can work to create a positive work climate for those with ASD by shaping itself to highlight inclusiveness for all individuals, regardless of a disability. Developing community partnerships with organizations

that may be connected to the regional autism community is another way to expand the applicant pool. For example, sponsoring a resume workshop or attending a job fair where individuals with ASD may be looking for jobs is another way to develop a reputation as an inclusive work organization.

#### *Interview Process*

Many individuals with autism struggle in social environments, especially high-stress situations. One of the biggest obstacles is the hiring process itself. Interviewing candidates requires a great deal of social interaction and communication that is often lacking in adults with autism (Hendricks, 2010). It is very difficult for a Human Resources Manager to get to know the strengths and skills of a candidate when they are put in an uncomfortable, strenuous environment. Regular structured interviews can be very intimidating and elicit feelings of discomfort and nervousness, creating opportunities for the individual to emotionally shut down. Instead of utilizing standard interviews, there are other alternatives that can help keep these interviewees calm and relaxed, while still getting to know the individual. For example, conducting a company walk through while interviewing can help put the candidate at ease and distract them from the interview itself. Visual aids and fidgets can also provide a discussion while the interviewer asks questions. Thorkil Sonne, CEO of Specialisterne utilizes Legos as a useful tool to assist in analyzing candidates. “I realized I needed a tool they would be comfortable with. We found that Legos could be used as a tool to identify their thought processes” (Saran, 2008). Many individuals struggle with structured interviews, so adapting to their needs is extremely important in gaining a better understanding as to what skills they do and do not possess.

### **Retention and Performance Management**

Once an organization determines that it would like to modify its employment practices to become more inclusive to employees with ASD, there are several adjustments both to the onboarding process as well as the workplace that should be considered. These are crucial not only for providing immediate success for these individuals, but also for creating an environment that can reduce unnecessary turnover or performance problems after hiring is complete.

#### *Orientation Process*

Large crowds of unfamiliar people can be overwhelming to anybody. For individuals with ASD, these large groups are most often intimidating and uncomfortable. When conducting an orientation for a newly hired employee with an autism spectrum disorder, exploring alternative orientation programs (designed for more individual attention) can be very beneficial. For example, providing a private one-on-one orientation option for all employees can ensure that the onboarding or orientation program is well understood and designed for everyone’s benefit (regardless of ASD). In addition, setting aside time during normal orientation to take the new hire on a private tour of the facilities to discuss questions and concerns can also help a new employee become acclimated with their surroundings and eliminate any potential discomfort.

Little things like introducing them to their supervisor and privately defining job tasks can support a smooth transition into new positions.

For most new employees, there can be an extensive amount of pre-hire paperwork that must be completed. Employees often have to complete the necessary tax forms, review the employee handbook, and complete benefit enrollment paperwork. Individuals with ASD may find the decision making and volume of information overwhelming so distributing any handouts for review prior to the first employment meeting is another tactic that can be used to provide a more welcoming climate to those with ASD.

### *Mentor*

One strategy that has proven helpful to any new hire is to assign the employee a mentor. In doing so, the individual has someone to turn to when any sort of question or concern arises. Utilizing a mentor allows an employee with ASD to have someone they can consider a friend or point of contact during employment. Often times, employees do not consider it appropriate to turn to their immediate supervisors with initial questions. Therefore, utilizing a mentor can help to eliminate the opportunity for unanswered questions and concerns that could negatively impact job performance. In addition to answering questions, mentors can also assist in defining work tasks and social norms. While that is typically the responsibility of the supervisor, it can also be that of the mentor. Oftentimes these individuals experience frustration over their inability to understand certain tasks or coworkers (Wilczynski et al., 2013). Utilizing a mentor who can reiterate directions and support their mentee through social interactions can decrease discomfort for an employee with ASD immensely. Having a mentor tasked to guide an employee with ASD creates an inclusive environment and promotes a team mentality. Mentors who are a part of the work environment have been found to increase social skills for an employee with ASD (Wilczynski et al., 2013).

### *Organization of Work Schedule and Tasks*

Difficulty in picking up on social norms is challenging to those with autism spectrum disorders. Many tasks considered to be “common sense” to most are not usually apparent to the majority of individuals with ASD. Those with ASD thrive in a setting where communication is direct and in writing. In some cases, written instructions may not be appropriate due to a lack of reading comprehension. The use of pictures to illustrate a task would be most effective in such situations; frequently verbal directions and cues are forgotten. With all the hustle and bustle of a work environment, it is easy for one to forget certain steps or become frustrated when minute details are forgotten. Step-by-step written/pictorial directions work extremely well considering the autonomy it allows in order to reference when necessary. Because of the literal nature of employees with ASD, they may need to be invited to extend themselves socially (e.g., lunches, breaks) and even be reminded to take scheduled breaks in their workday.

Once an employee has gone through the orientation process and is settling in, the day-to-day work week can begin. Expectations and guidelines have been communicated and the employee is ready to hit the ground running. However,

communication should not stop there. Thorkil Sonne describes the need for continuous communication: “It’s also about setting expectations when it comes to management style and adjusting behaviors, such as not using irony or sarcasm-saying what you mean and meaning what you say” (Dobson, 2013). These employees are very motivated to work, but don’t always understand the social norms and expectations surrounding an office environment. Often times, management styles need to be altered to better accommodate these employees and their understanding of company policies and guidelines. In addition to the day-to-day communication, organizational change should be proceeded with caution around these employees. Repetition and routine are very comforting to individuals with ASD. It is important to implement change with caution. Communicating change before it happens and keeping an eye on anxiety levels is crucial and continuous communication is key.

### *Coworker Training*

The success of an employee with ASD can hinge on compassionate coworkers and immediate supervisors to provide a supportive environment. “Employment retention may require flexibility and tolerance from individuals who supervise, interact, or collaborate with the person with ASD.” (Hendricks, 2010, p. 129). In order to provide such an environment, knowledge of the disorder as well as what job supports are needed are excellent ways to prepare coworkers. Training all employees as to what they can expect is critical in creating an inclusive environment that promotes comfort and support. It may be necessary to have a source of continued support or guidance for those who interact with the employee with ASD to address any unique challenges posed into the workplace. This source of support could be a resource for continued interpersonal and team building, beneficial for all members of an organizational team handling a unique or challenging situation.

### *Performance Management*

When hiring an individual with ASD, it is important to frame this initiative in light of the organization’s human capital strategy. If the organization’s strategy is to be more inclusive, then it is in the company’s best interest to continue to help these employees grow through the performance management process. One suggestion from the Dandelion Effect is to redesign work conditions in order to adjust to the talents and skills of a company’s workforce. This way a company is significantly increasing the amount of value its people create in such a way that far exceeds the overall costs of the changes themselves (Austin & Sonne, 2014). Creating an inclusive, knowledgeable workforce is difficult. Employees with ASD bring a lot to the table when it comes to having a differentiated skill set. The function of performance management may need to be revisited to determine if the necessary criteria are being appropriately evaluated relative to the job description. For example, what is the role of interpersonal communication in the job duties? This could be an area where an employee with ASD could prove deficient, however, what is the relative value on that skill in relation to overall performance? Once the employee with ASD and their coworkers adjust to new means of communicating, these deficiencies may not even exist; a new normal may develop for the entire workgroup.

### *Supported Employment*

Many companies utilize job coaches in order to provide substantial support for their employees with ASD. Job coaches can be used either for short- or long-term support with varying levels of hours, depending on the individual and organizational needs. In doing so, these employees are able to work independently as much as possible while being accommodated in the areas of most trouble such as social interactions. Garcia-Villamizar and Hughes (2007) found a positive correlation between supported employment and the cognitive performance of those employees with ASD. Utilizing job coaches through a vocational program allows these employees to be consistently monitored and supported without a negative impact on company time. Job coaches often range from full-time assistance to part-time, conducting weekly visits in order to provide the adequate assistance preferred by both the company and the employees.

The use of a job coach raises some organizational concerns and clear integration challenges for those employees needing this support. For example, how does an organization measure employee performance if the individual is utilizing a job coach? Who manages the relationship between the individual and the job coach? How is the workplace impacted by an additional resource to support this individual in their work performance? The challenge is creating an organization that can be flexible with this relationship as well as be open to this experience. If an organization is to be an inclusive workplace, then the presence of a job coach may not seem odd to the employment setting. The job coach could also serve to help educate the organizational community on how to best work with the individual in this work setting (beyond the initial training described earlier).

## **Total Rewards**

### *Motivation*

Motivating employees to remain productive on a daily basis can prove a difficult task, regardless of being on the autism spectrum. However, providing employees with exceptional compensation packages based on individual merit is a strategy utilized by many companies seeking to encourage superior performance (going above and beyond the basic job duties). One major challenge for organizations utilizing this type of incentive pay is that for individuals with ASD they do not always understand the subtleties of exceptional performance. In their often literal world, they may not seek and develop those type of responsibilities or consider monetary rewards in relation to job performance. The ability to work and perform a job is often the necessary motivation an employee with ASD requires to perform their job well. In their literal world, poor performance would more likely result from improper instruction or lack of ability, rather than poor motivation. Therefore, as with any individual, it is important to consider in the performance management process how each employee is motivated. For example, an employee with ASD may not be motivated to advance up the career ladder (which often includes increased interpersonal and management responsibilities). They may however, want new skills or tasks that are relevant to their interests and abilities, regardless of a promotion. Many organizations are using alternative career paths (i.e., based on technical skills rather than an interest in increasing management

responsibilities) and individuals with ASD would be good candidates for such a promotion system. Additionally, opportunities for training should be checked to ensure they are accessible to employees with ASD. For example, online training may be a great option for an employee with ASD to develop additional skills.

### *Benefits*

Most employees in full-time jobs receive benefits, medical or otherwise. Depending on an individual's level of functioning as well as financial situation, their benefit needs may vary differently than the neurotypical workforce. One thing all of these employees have in common is that benefits which are comprehensive to address overall health (both physical and mental) would be desirable for the entire workforce. Employees with ASD might just have to manage how employer provided benefits may accompany government benefits as appropriate. While an employer should not have to manage that balance, they should be able to provide an employee with ASD the resources to help self-manage that challenge and ensure their overall health care benefits are not in conflict.

## **Health and Safety**

### *Office Layout*

Office layout is very important. As defined by the DSM-5, one diagnostic criteria of an individual with autism spectrum disorder is to have a hyper- or hypo-reactivity to sensory input such as apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, and visual fascination with lights or movement. High noise levels and uncomfortable lighting can make individuals with ASD very uncomfortable. Therefore, sound volumes that seem normal to those not on the spectrum, may be extremely uncomfortable for employees with ASD.

Communicating the location of bathrooms and quiet areas is especially helpful when accommodating employees with ASD. Maintaining quiet areas for these individuals to utilize has proven very beneficial to their comfort and safety. Often times individuals with Autism Spectrum Disorder experience sensory overload where they become overwhelmed. Providing such an environment could help to eliminate any feelings of anxiety and discomfort. Many organizations now have private spaces for nursing mothers or personal breaks (given the new trend in more open office layouts). These existing areas can be utilized by employees with ASD when they may need to be alone to deal with sensory overload.

### *Breaks*

When it comes to providing reasonable accommodation, one of the biggest issues is the amount of breaks that are acceptable for a person to take on a daily basis. Feelings of being overwhelmed are commonplace for individuals with ASD. While allowing for breaks is completely acceptable, it is also important to communicate the use of excessive breaks. Many of these individuals have never had the opportunity to be employed. It is not an issue of abusing a privilege, but of not knowing a privilege is being abused. When hiring an individual with ASD, it is crucial to work together to develop a reasonable

accommodation plan that is comfortable for both the employee and their supervisor. Once a plan has been accepted by both parties, continuous review and communication will help to reduce opportunity for abusing such a privilege. The issue of employee scheduled breaks may raise the question of reasonable accommodation as well. If a modified work schedule is requested on the grounds of reasonable accommodation (under the ADA) then that individual will have to disclose their disability (often this is administered through a third party vendor). If an individual requests a modified break schedule, this will have to be considered in light of a reasonable accommodation under the ADA.

## Implications

When it comes to today's workforce, it is rather obvious each employee brings a different set of skills to the table. Individuals with autism spectrum disorder are no different. Many of these individuals are high functioning and motivated to work when given the opportunity. According to the article, "People with Autism Ready to Work," Thorkil Sonne stated that, "a lot of people with autism have an attention to detail, a good memory and a very structured way of thinking and working. They like the repetitive elements in jobs and some are very creative, finding new solutions to existing ways of doing things" (Dobson, 2013). Sonne, as the founder of Specialisterne, hires individuals with ASD to work alongside business consultants on tasks like software testing, programming, and data entry. Today, about 75% of Specialisterne's skilled employees have some form of Autism Spectrum Disorder (Austin & Sonne, 2014). Through effective assessment and training, Specialisterne has been able to successfully comprehend what employees can accomplish and how to sustain a comfort zone in which they can excel. Sonne and Specialisterne have been able to foster an extremely productive work environment by adapting their management style and designing a work environment from the employee's perspectives (Austin & Sonne, 2014). Sonne is one of the few business owners to successfully utilize this population to a competitive advantage.

Adults with ASD may struggle with social interaction skills, but they excel with attention to detail, persistence, and strict compliance with instructions. With the right training and support, these individuals have the potential to be incredibly reliable employees who take pride in their work. There has been some recent research on the role of leadership in the employment success of individuals on the spectrum (e.g., Parr, Hunter, & Ligon's, 2013; Parr & Hunter, 2014). Parr and Hunter's (2014) interview study of 54 employees with ASD illustrates how organizational leadership must be sensitive to the style necessary for these workers' overall performance success. An organization's human resource management function can both guide leadership and workplace practices to provide a supportive workplace for adults with ASD.

Scholars interested in the effectiveness of these activities should work to generate meaningful findings. Future research should utilize larger sample sizes or include individuals in a variety of work settings. Studies should compare and contrast how an organization designed to be inclusive of employees with ASD impacts their neurotypical workforce. Experimental research using individuals with ASD could begin

to examine how differences in traditional human resource management practices will impact attitudes, experiences, and intentions to stay or leave an organization. While there has not been much evidence historically that federal legislation (specifically the ADA) plays a role in encouraging organizations to employ individuals with ASD, the Workforce Innovation Opportunity Act of 2014 should be studied for its organizational mandates regarding the employment of people with disabilities, specifically working-age adults with ASD.

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# Asperger's Syndrome and the Development of a Positive Work Identity

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*The development of a positive work identity is associated with stronger social resources and enhanced workplace performance. The development of positive work identity by adults with Asperger's Syndrome (AS) is a critical part of their long-term career success. This article focuses on the challenges that adults with AS experience with developing positive work identities. Research on positive work identity is integrated with a discussion of related issues of disclosure and ADA accommodation as they relate to the development of a positive work identity. The implications for practitioners are discussed.*

Approximately 1 in 500 adults have a higher functioning form of autism, making them capable of full employment while also presenting them with distinct obstacles (About Asperger Syndrome: FAQs, n.d.). Asperger's Syndrome, which is defined by noticeable difficulties with communication and social interaction, has an estimated prevalence of 3.6 to 7.1 per 1000 adults (Attwood, 2006; Ehlers & Gillberg, 1993; Fombonne, 1996; Higgins et al., 2008). In spite of their large numbers in the adult population, adults with AS are understudied in literature (Bonete, Calero, & Fernandez-Parra, 2015). Most of the research that has been done is outside of the management literature.

Adults with autism spectrum disorders, coupled with an average IQ, are at risk for worse employment outcomes than those with intellectual disabilities because their disorder may not be formally identified at work (Taylor, Henninger, & Mailick, 2015). Thus, they do not receive targeted support (Taylor et al., 2015). Less than half of adults with AS are employed, and they face significant challenges maintaining that status (Baldwin, Costley, & Warren, 2014; Lorenz & Heinitz, 2014; Richards, 2012; Roux et al., 2013). They are also more likely than non-AS adults to be unemployed or underemployed, especially in relation to their abilities (Baldwin et al., 2014; Krieger et al., 2012; Nord et al., 2016; Richards, 2012; Shattuck et al., 2012; Roux et al., 2013; Scott et al., 2015). They are more likely to be overeducated and overqualified for their

jobs, meaning that the work they do is beneath their capabilities (Baldwin et al., 2014). As many as 46% of adults with AS are overeducated, and they are overrepresented in temporary work (Baldwin et al., 2014). They also work fewer hours per week on average compared to the general population (Baldwin et al., 2014).

The experience of working and developing a work identity—the process of defining who one is in relation to work—is a psychological process that is a key part of the experience of adulthood (Dutton, Roberts, & Bednar, 2010; Gini, 1998; Kira & Balkin, 2014; Saayman & Crafford, 2011; Sveningsson & Alvesson, 2003). Working should ideally provide adults with an environment where they can have a sense of accomplishment and connection with other people (Krieger et al., 2012; Saayman & Crafford, 2011; Scott et al., 2015). Given the social nature of work, it is notable that many of the difficulties with career attainment and success for adults with AS are related to social concerns, rather than to actual job performance (Higgins et al., 2008; Scott et al., 2015). Work-related difficulties may include interacting and communicating with others, balancing multiple demands, adapting to change, and dealing with sensory stimulation (Baldwin et al., 2014; Higgins et al., 2008; Mynatt, Gibbons, & Hughes, 2014; Hurlbutt & Chalmers, 2004).

These challenges may be reduced with workplace accommodations, but access to accommodation depends on the disclosure of the condition (Santuzzi et al., 2014). AS is an invisible disability since it cannot be readily observed by others (Richards, 2012). Adults with invisible social identities, such as invisible disabilities, have the option to reveal or to conceal them from others (Clair, Beatty, & MacLean, 2005). The consequences of revealing invisible stigmatized identities in the workplace may be both positive and negative (Chaudoir & Fisher, 2010; DeJordy, 2008; Ragins, 2008). Adults with AS must weigh the potential pitfalls of disclosing their diagnosis against the potential gains in the development of a positive work identity.

A positive work identity is developed as adults leverage their strengths, position themselves to receive positive feedback, and seek alignment between themselves and their work (Dutton et al., 2010). The process of developing a positive work identity is one of developing stronger social resources so that employment outcomes are improved (Dutton et al., 2010). Therefore, it may be both a necessary and an inherently challenging process for adults with AS. Adults with AS have strengths that add value to workplaces. Employers, by working with adults with AS, can capitalize on these strengths while helping adults with AS to build a sense of belonging at work.

### *Asperger's Syndrome at Work*

Adults with disabilities have career experiences that differ from the mainstream populations that are commonly studied in the management literature (Heslin, Bell, & Fletcher, 2012; Zikic & Hall, 2009). Difficulties with social interaction may be particularly challenging as people with AS navigate their careers (Lorenz & Heinitz, 2014). The ability to solve problems and adapt in social situations may be limited (Bonete et al., 2015). Adults with AS may have trouble dealing with changing routines (Mynatt et al., 2014). They need clear, logical instructions for tasks and expectations (Fast, 2004; Richards, 2012 which may frustrate supervisors that expect adults to work with little supervision. They may also have a tendency to strictly follow rules without

regard for context (Bonete et al., 2015; Higgins et al., 2008; Hurlbutt & Chalmers, 2004; Klin, Saulnier, & Sparrow, 2007; Mynatt et al., 2014; Richards, 2012). Knowing when to apply the rules and when to bend or break them is an important social skill. Many workplaces function on unwritten rules, which adults with AS are not be able to fully recognize (Richards, 2012). Misunderstandings may arise from differing interpretations of expectations at work, many of which are not explicit.

Adults with AS may also struggle with routine aspects of communicating at work, including making eye contact and allowing two-way interactions in conversations (Bonete et al., 2015; Higgins et al., 2008). They may also have trouble following the norms of conversations, including talking too much about one topic (Higgins et al., 2008; Hurlbutt & Handler, 2010; Mynatt et al., 2014). Speaking too formally or using inappropriate volume, tone, or inflection, are also common concerns (Higgins et al., 2008). When these differences in communication practices are interpreted as rude or odd by neurotypical coworkers and supervisors, adults with AS may find themselves becoming socially isolated at work.

In some circumstances, adults with AS may want to have some personal space at work. Many of them are bothered by sensory disturbances such as noise or bad lighting that are common in many work environments (Lorenz & Heinitz, 2014; Mynatt et al., 2014; Richards, 2012; South, Ozonoff, & McMahon, 2005). Working in an open plan office space may also be distracting for them (Lorenz et al., 2016; Wilczynski, Trammell, & Clarke, 2013). This heightened sensitivity to environmental stimuli may decrease productivity (Mynatt et al., 2014). When productivity is lower than expected, this can become the basis of legitimate concerns for employers that are not aware of the employee's disability status.

Adults with AS frequently experience bullying or harassment at work because they do not always blend well with others (Attwood, 2006; Higgins et al., 2008; Richards, 2012). Even coworkers who are not bullying may view adults with AS negatively (Bliss & Edmonds, 2008; Higgins et al., 2008; Richards, 2012). When adults with AS experience difficulties at work, they are more likely to become depressed (Baldwin et al., 2014; Higgins et al., 2008). Depression then adds to the problems that they may experience. When faced with challenges at work, adults with AS are more likely to become angry and less likely to ask for assistance (Meyer, 2001; Richards, 2012). All of these work-related issues complicate relationships with supervisors and peers (Mynatt et al., 2014).

When overwhelmed by conflict or stress at work, adults with AS may quit or miss work without prior notice (Richards, 2012). They are also more likely than their neurotypical peers to change jobs frequently, and, as a result, to experience higher levels of ongoing stress and financial concerns (Baldwin et al., 2014). While unemployed or seeking a change of employment, they are also less likely than adults without AS to use social connections to find new employment (Baldwin et al., 2014), perhaps because they tend to have smaller social networks (Higgins et al., 2008).

Having negative experiences at work may lead adults who differ from the norm to feel incapable of finding and keeping fulfilling employment (Heslin et al., 2012). This is particularly true of adults who have early negative experiences based on aspects of themselves that cannot be altered (Heslin et al., 2012). The combination of external

factors (like social ostracism), paired with internal factors (like communication difficulties), may be associated with an increase in feeling of discouragement about future employment prospects (Heslin et al., 2012). Adults who perceive that their opportunities are limited may simply retreat from the workplace (Heslin et al., 2012). Adults with AS may wish to work but give up on the possibility of career success after repeated negative outcomes in the workplace.

### *Asperger's Syndrome and Work Identity*

Identity, generally, is developed as adults continuously strive to maintain a balance between being a unique person and a person that fits with the larger social group (Sveningsson & Alvesson, 2003). Identities develop in an ongoing process of interacting with the environment, receiving feedback, and responding to it (Pratt, Rockmann, & Kaufmann, 2006). Identities are legitimized by members of one's social group (Pratt et al., 2006).

Work identity is the way people define themselves in relation to work (Dutton et al., 2010; Gini, 1998; Meister, Jehn, & Thatcher, 2014; Walsh & Gordon, 2008). The cycle of work identity starts with learning about the job (Pratt et al., 2006). Then, one receives feedback, which in turn, is used to improve their performance (Pratt et al., 2006). Self-assessments are formed by comparing oneself to their peers (Pratt et al., 2006). Work identity is created as people strive to reconcile who they are as individuals with who the workplace needs them to be (Pratt et al., 2006; Saayman & Crafford, 2011; Wallace, 2002). This process is social in nature, and thus may be discouraging for adults with AS, who by virtue of their disability may not receive affirmations or be perceived as fully competent due to differences in social functioning (Pratt et al., 2006).

Dissonance occurs when the way that a person perceives themselves and their contributions at work does not match the perceptions of others (Meister et al., 2014). This dissonance is associated with negative personal outcomes like stress and anxiety, which may then affect future performance and job satisfaction (Kira et al., 2014; Meister et al., 2014). Sometimes these differences in perceptions are intentional, as when a person deliberately conceals an identity or works to appear different from their true selves in order to fit in at work (Meister et al., 2014). For example, adults with AS may choose not to disclose their condition at work and may engage in behaviors aimed at trying to fit in socially. When perception differences are unintentional, the person may respond negatively or feel internal turmoil (Meister et al., 2014).

Several possible responses for reducing this dissonance are possible. One response is to try to improve performance (Kira et al., 2014; Pratt et al., 2006). If differences in perceptions of performance are due to social skills and misunderstandings in communication, the potential for improving performance may be limited. Alternatively, a person may work to correct others' incongruent views by pointing out their accomplishments (Meister et al., 2014). Another reaction is to redefine oneself according to others' perceptions (Meister et al., 2014). In the case of adults with AS, this could mean seeing themselves in a more negative light, which could lead to depression or discouragement. Another way is to accept that the perceptions of others do not match their own views of their capabilities (Meister et al., 2014). This acceptance may occur if other efforts to resolve the differences in perceptions have

failed. When people are able to align their own positive perceptions of their work capabilities with others' perceptions, the outcome is a positive work identity (Kira & Balkin, 2014; Meister et al., 2014).

### *Positive Work Identity*

Positive identity construction is studied less often than negative identity processes (Dutton et al., 2010). Research about positive work identity is valuable, given its ability to shed light on the mechanisms that adults may use to adjust to the work environment (Dutton et al., 2010). The development of positive work identity is associated with feelings of belonging to a larger group (Saayman & Crafford, 2011). It also provides adults with coping skills, flexibility, motivation, creativity, and access to knowledge (Dutton et al., 2010). The development of a positive work identity ultimately influences the way a person performs at work (Walsh & Gordon, 2008).

Much of the existing research about adults with AS emphasizes the negative antecedents and consequences of stigma and disclosure that adults with AS may experience. This article acknowledges these concerns while also discussing strategies that adults with AS may use in the process of developing positive work identity.

### *Positive Attributes and Feedback Loops*

Adults with AS tend to have a low sense of self-efficacy, or belief in their capabilities, when it comes to work (Lorenz & Heinitz, 2014; Lorenz et al., 2016). One element of developing a positive work identity is recognizing one's strengths and using them to create a positive sense of work identity (Dutton et al., 2010). For example, though they may work in many industries and job types, adults with AS may be highly skilled at visual and technical tasks (Baldwin et al., 2014). They may also have positive qualities like "honesty, efficiency, precision, consistency, low absenteeism, and a disinterest in 'office politics'." (Baldwin et al., 2014, p. 2440; Richards, 2012). Recognizing and using these positive aspects of themselves is one way that adults with AS can enhance their work-related social identities (Dutton et al., 2010). This includes positively framing the personal traits that differentiate them from others while reframing or minimizing negative traits (Clair et al., 2005; Dutton et al., 2010).

Self-selection plays a role in work identity development (Gerber & Price, 2003; Walsh & Gordon, 2008). Adults with AS need to find workplaces that fit them well (Fast, 2004; Richards, 2012). Seeking out work that better fits with the strengths and weaknesses of AS reduces the effort that has to be expended on strategies to align internal and external perceptions of one's work (Meister et al., 2014). The types of jobs applied for can be chosen based on requirements that play to the strengths of adults with AS while minimizing exposure to duties that relate to one's weaknesses. Work that requires careful attention to detail, sequencing of tasks or strict adherence to deadlines and schedules may be preferred. This may increase positive relationships at work as hurt feelings and discomfort over competing views of oneself decrease (Meister et al., 2014).

Adults with AS may also choose the jobs and organizations with which they affiliate, focusing on those with attributes that seem most likely to enhance development of a positive work identity (Madaus, Gerber, & Price, 2008; Walsh & Gordon, 2008). They can investigate a company's reputation for inclusion of adults with disabilities, which

could impact the choice to apply for positions. Given the relationship between positive work identity and characteristics that relate to stronger work performance, aligning themselves with employers that are known to be supportive of disabled adults could result in improved performance outcomes.

Employers are increasingly including disability in their definitions of diversity, which may be viewed as a positive sign of progress (Shore et al., 2006). It is also notable that larger companies have better track records for ADA accommodation (Gerber & Price, 2003). Fortunately, some employers also pride themselves on their inclusion of adults with disabilities (Gerber & Price, 2003). Identifying companies with strong inclusion and accommodation practices may help adults with AS to self-select potential workplaces.

Adults with AS without a college degree or with a history of job changes may have limited options for self-selecting into careers or organizations that fit their positive traits. One alternative may be self-employment, which would allow the adult with AS to have greater control over their work environment. For those that have the resources to pursue jobs that capitalize on their abilities, the opportunity to channel their efforts into work that emphasizes their strengths can enhance the work identity process. For those that do not, the development of positive work identity will hinge on decisions about how to deal with the work environment that is accessible to them.

Working toward establishing a better fit with internal and external requirements is also part of the developmental process (Dutton et al., 2010). The development of positive social identity involves a continuous feedback loop based on interactions with others (Walsh & Gordon, 2008). This implies that adults with AS may need to seek explicit feedback more often to help identify and manage unnoticed behaviors that are impacting their work. This could help bridge the gap between internal and external perceptions, providing a basis for improvement in the workplace. This does imply reaching out to supervisors more frequently, which may be difficult for some adults with AS to do.

Alternatively, they may seek support and feedback by working with a mentor (Skelton & Moore, 1999), which could be set up by a trusted friend or family member. Mentoring enables adults to learn adaptation skills from others who have successfully navigated the workplace (Skelton & Moore, 1999). Adults with AS may be able to find mentors inside the workplace, though targeted mentoring is also available through autism-specific support organizations.

### *Disclosure and Stigma*

Meshing aspects of multiple identities is also part of the process of developing positive work identity (Dutton et al., 2010; Ramarajan & Reid, 2013). This involves reducing conflict between one's personal and work identities so that they are in harmony (Dutton et al., 2010). One way to do that is by expressing one's genuine personal identities in the workplace (Dutton et al., 2010). The ideal outcome is increased disclosure and authenticity, though for adults with AS this issue is complicated by a number of contingencies.

Unlike most physical disabilities, AS is not readily apparent to others (Santuzzi et al., 2014). The need to make a conscious choice about whether or not to disclose

a stigmatized invisible identity is a unique concern not faced by most adults with physical disabilities (Clair et al., 2005; Ragins, 2008). The decision to disclose a hidden disability such as AS at work has been compared with the challenge of revealing other hidden identities (Davidson & Henderson, 2010).

Most adults with invisible disabilities do not choose to disclose them at work (Madaus et al., 2008; Neely & Hunter, 2014; Parr, Hunter, & Ligon, 2013). Adults with invisible disabilities may try to hide them to avoid stigma and potential misunderstanding (Clair et al., 2005). Stigmas are negative, undesirable associations that are made with a group of people who differ from the norm in some way (Heslin et al., 2012; McLaughlin, Bell, & Stringer, 2004). A stigma may impact adult acceptance and therefore should be considered when making the decision to conceal or disclose AS in the workplace (McLaughlin et al., 2004). The stigmas associated with adults with autism may make adults with AS reluctant to disclose their disorder at work (Davidson & Henderson, 2010; Krieger et al., 2012). Choosing to disclose a potentially stigmatized invisible identity like AS may also be associated with increased concerns about discrimination at work (Johnson & Joshi, 2014; Ragins, 2008).

Adults with AS also may be reluctant to disclose their disability at work because of concerns about reputation and retaliation (Krieger et al., 2012). Many adults either do not believe that brain-based disorders like AS are "real", or they have irrational fears about people with neurologically-based disorders (Patton, 2009; Ragins, 2008). One study found that 33% of surveyed adults attributed brain-based disorders to "emotional weakness" rather than biological brain development (Patton, 2009). This misattribution may be a source of discomfort for adults with AS and a reason to conceal their disability.

Some adults with AS choose to "pass" by making a careful study of the behavior of neurotypical individuals and then copying their behaviors (Davidson & Henderson, 2010). However, concealing an invisible identity can have a negative psychological impact (Ragins, 2008). The decision to pass, while influenced by concerns about stigma and acceptance, can have unintended negative consequences on performance (DeJordy, 2008). Social isolation may occur when adults choose not to disclose hidden identities (Clair et al., 2005). Social isolation is already a key concern in the workplace for adults with AS, so it is possible that hiding their disability compounds it. Hiding an invisible identity is also associated with an increased risk of stress, depression, and other health concerns (Santuzzi et al., 2014). Efforts to "pass" may also deplete cognitive resources that are needed for work productivity (Beatty & Kirby, 2006; Clair et al., 2005; DeJordy, 2008; Dutton et al., 2010; Santuzzi et al., 2014). Given the cognitive basis of AS, disclosure may be an essential part of increasing positive work outcomes.

Being able to safely disclose and then define the disorder to others may help to clear up misconceptions (Gerber & Price, 2003). This may be particularly important, given the lack of awareness that others may have about adults with AS. Highly functional adults are perceived by their coworkers as essentially "normal", and their negative behaviors are often incorrectly attributed to character flaws rather than to neurological differences (Patton, 2009). In a recent study, 66% of respondents with AS say that they would like to have more support in the workplace, including more understanding and

respect (Baldwin et al., 2014). Disclosure has the potential to help with acceptance at work and may make it easier for supervisors and peers to separate the work from the person (Davidson & Henderson, 2010; Gerber & Price, 2003; Meister et al., 2014). Disclosure may also pave the way for training supervisors and peers about the needs of the employee with AS (Wilczynski et al., 2013).

Of particular concern is the need for people with a disability to be perceived as capable of performing a job well (McLaughlin et al., 2004). Proactive disclosure may yield positive results, while reactive disclosure may lead to negative results (Gerber & Price, 2003). The distinction between these two concepts is that proactive disclosure precedes work-related issues, and reactive disclosure follows work-related issues (Madaus et al., 2008). Reactive disclosure could pose a problem for adults with AS who choose not to disclose their disability early in their employment. Should they display the characteristic social issues prior to disclosure, the odds of gaining acceptance after disclosure could be reduced. People with invisible disabilities may therefore wish to proactively disclose their status in order to maintain control over the perceptions of others (Clair et al., 2005). People with AS may also prefer to disclose it since authenticity tends to be a highly regarded value among adults with AS (Krieger et al., 2012).

However, due to the stigma already attached to AS, early disclosure could negatively impact views of the competency of adults with AS. The more negative the stigma surrounding an invisible identity, the more negative the likely result of disclosing that identity (Chaudoir & Fischer, 2010; Ragins, 2008). Adults with AS should therefore consider the goal being sought and the potential negative impact of disclosure on their work identity (Chaudoir & Fischer, 2010; Learmonth & Humphreys, 2011).

When adults with AS decide to disclose it at work, disclosure is complicated by struggles with social and communication skills (Davidson & Henderson, 2010; Johnson & Joshi, 2014). Knowing when and to whom to disclose may be even more challenging than for a neurotypical person with a different type of hidden identity (Davidson & Henderson, 2010). It may be helpful to recruit a neurotypical family member or friend to assist with the decision and plan how to carry out the disclosure (Davidson & Henderson, 2010; Hane, 2004).

The context of the individual work environment should be weighed into the decision about whether or not to disclose a person's disability status. Certain aspects of the workplace are cited repeatedly for fostering positive reception of disclosure. A supportive organization that enforces strong anti-discrimination policies can encourage disclosure (Clair et al., 2005; Chaudoir & Fischer, 2010; Ragins, 2008). Company culture that actively promotes diversity may also be important (Gerber & Price, 2003). Having a positive, trusting relationship with a manager or having a manager that is known to have the same disorder could also impact an adult's disclosure decision (Clair et al., 2005; Chaudoir & Fischer, 2010; Ragins, 2008). The presence of coworkers that are known to have AS and have been accepted could also signal that the workplace is safe for disclosure (Clair et al., 2005; Ragins, 2008).

#### *ADA Accommodation*

One can disclose an invisible disability without requesting accommodation, but actually receiving accommodation can help adults with AS improve their work

performance. To receive workplace accommodation and protection from discrimination under the Americans with Disabilities Act of 1991 (ADA) and the ADA Amendments Act of 2008, a person must have a diagnosis of autism spectrum disorder prior to having problems on the job, and the employer must be aware that the person has autism (Santuzzi et al., 2014). Thus, adults with AS are responsible for disclosing their condition at work in order to receive protection under the ADA (Madaus et al., 2008; Neely & Hunter, 2014; Santuzzi et al., 2014).

Accommodations for physical disabilities may be more obvious than those for invisible disabilities such as AS (Neely & Hunter, 2014). Each adult with AS has a varying degree of symptoms which interact with different work environments in unique ways. In general, adults with AS tend to prefer work environments where the instructions and expectations are clearly defined (Lorenz et al., 2016, Wilczynski et al., 2013). Putting performance expectations, work assignments and deadlines in writing may be helpful. The freedom to focus on one task at a time, rather than multi-tasking, is also important (Lorenz et al., 2016). Being placed in a job that is a good fit and in a structured environment contributes to job satisfaction and positive outcomes at work for adults with AS (Scott et al., 2015; Wilczynski et al., 2013).

A comprehensive list of potential accommodations that can be offered to adults with AS in the U.S. are outlined by the Job Accommodation Network (Higgins et al., 2008; Office of Disability Employment Policy, 2013). Some suggestions are simple and free, such as giving adults with AS breaks away from their work area and dividing work assignments into smaller tasks (Higgins et al., 2008). Allowing flex-time and working from home could also improve performance for some adults with AS. Other accommodations, like installing cubicle walls, providing coaching, or conducting company-wide training on disabilities, are more expensive and time-consuming. Employers may resist providing accommodations to adults with AS because in a tight job market it is less expensive and easier to simply hire a qualified person that does not have a disability.

Some of the suggested accommodations, like allowing adults with AS to use noise canceling headphones and communicate in writing, are well-suited for office environments. These accommodations may not be feasible in jobs where ongoing verbal communication is required however. Adults with AS who lack post-secondary training or education may not have the qualifications to work in office settings where the environment can more easily be altered. Perceptions of fairness may also be an issue when accommodating adults with all types of disabilities (McLaughlin et al., 2004). Disabled workers who request workplace accommodations may be seen as weak, which can increase their stigmatization (Baldrige & Swift, 2013). This is pronounced when accommodations are made for adults with invisible disabilities, who may be perceived as receiving preferential treatment (Clair et al., 2005; Patton, 2009). Providing a private office or allowing a person with AS to work from home, for example, may be viewed as a privilege in some workplaces. Without an explanation—which privacy concerns dictate that coworkers are not entitled to receive—jealousy may arise. Given the tendency of people to discount invisible disabilities, this may occur even when coworkers are informed of the reasons for the accommodation. Accommodation may include training coworkers, which may increase awareness and sensitivity around

issues of disability in the workplace (Neely & Hunter, 2014).

Employers, however, may not want to spend extra time assisting people with AS with socialization, communication, and instructions, or providing sensory accommodations (Biggs et al., 2010; Richards, 2012). Helping managers to see the positive aspects of employees with AS plays a role in the accommodations that could be provided (Higgins et al., 2008). Employers are more likely to approve of disability accommodations for employees with solid records of good performance (Patton, 2009). This suggests the benefit of raising the issue of accommodation early in the working relationship. Employees are more likely to form a positive work identity when their leader shows compassion toward them, and desirable work outcomes are then more likely to follow (Moon et al., 2016). When disclosure is met with accommodation, and that accommodation occurs without resentment, employees and their supervisors are more likely to benefit than when the accommodation is grudging.

## Conclusion

Within the autism spectrum, adults who have higher IQs and thus higher intellectual functioning are less likely than adults with lower intellectual functioning to be employed or involved in a meaningful daytime activity (Taylor & Seltzer, 2011). Having a higher IQ and being perceived as more capable, which is the case with adults with AS, may limit access to support systems that are designed to help adults on the autism spectrum transition into employment (Bonete et al., 2015; Wilczynski et al., 2013). That leaves them to wade through concerns about job selection, disclosure, and accommodation on their own.

Adults with AS who are able to successfully compensate for their disability through self-initiated strategies that focus on strengths are able to develop positive work identities without disclosure and accommodation. In that case, they may be well-advised to conceal their AS at work (Krieger et al., 2012). For other adults with AS, their peers and supervisors may notice that they are different from the norm (Davidson & Henderson, 2010; Johnson & Joshi, 2014). In that case, disclosure may be helpful. Either way, the appropriate balance between the need to avoid stigma and the desire to enhance work performance must be determined by the individual (Dutton et al., 2010; Shore et al., 2011).

Although employers may be concerned about the capabilities of adults with AS, research suggests that both affected adults and their employers can bridge gaps in ability by working together to leverage strengths and minimize weaknesses. Human Resource managers are largely unaware of invisible neurological disorders (Patton, 2009). Creating a supportive workplace rests on understanding the makeup of the human capital in the organization. The prevalence of AS and its impact in the workplace implies a need for better understanding. The need to train managers and supervisors at all levels in organizations about AS and the handling of disclosure and accommodation is apparent, but it must be preceded by training employees in the HR department. The development of strong policies supporting inclusion of adults with invisible disabilities is also warranted. As HR practices are formalized to comply with laws, historically marginalized groups should have greater career opportunities (Fuller,

Edelman, & Matusik, 2000; Konrad & Linnehan, 1995; Yang & Konrad, 2011).

Many of the costs affiliated with accommodating adults with AS to improve performance are nominal. Given the potential for a high return on investment due to increased productivity, employers should be interested in providing accommodations for adults that need them (Gerber & Price, 2003). The ability to perform detail-oriented work that has been reliably demonstrated by many people with AS, as well as their tendency toward values like honesty and loyalty, should inspire employers to view adults with AS as potential assets. Employers that have already established mentoring programs, social support systems, counseling, and accommodation practices should publicize these services to raise awareness of their availability.

Work identities collectively impact the performance of an organization, implying that organizations benefit from enhancing the development of work identities for adults with AS (Walsh & Gordon, 2008). Positive work identity is more likely to develop when both the employee and the employer strive to integrate both work and personal identities in the workplace (Ramarajan & Reid, 2013). In the case of adults with AS, strategies that include aligning strengths with job requirements, finding an employer receptive to employees with disabilities, and receiving environmental accommodations are all elements that can lead to the development of a positive work identity.

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# Autism at Work: Calvin's Journey of Living and Working with Autism

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*Calvin took a deep breath and steadied himself as he prepared to enter the interview. "This one is big." As he thought about his efforts in college, part time work, and internships during school, he was cautiously excited to share his unique approach to life with a new company. Diagnosed with autism spectrum disorder (ASD) at the age of 5, Calvin's journey to this moment had not always been easy, but with the support of family, friends, and many others, his dream was almost a reality. "I have always enjoyed helping people, feeling that making their world happier was not just a courtesy, but a responsibility." He was ready to fulfill that responsibility.*

Transitioning from high school to university to career life is a daunting journey for any young adult, but more so for an individual living with autism. With over half a million people diagnosed with ASD entering adulthood (CDC, 2015), as well as an increasing number of adults who hide their diagnosis, organizations need to address the growing issue of autism in the workplace. The limited understanding of autism and the characteristics of those diagnosed has led to significant underemployment of those on the autism spectrum. These employees are not currently being utilized effectively, with estimates of total unemployment or underemployment as high as 90% of the adult autistic population (Autism Speaks, n.d.). Roughly half of all young adults with ASD work outside the home within eight years of finishing high school (Roux et al., 2013). With improved diagnostic attentiveness, increased acceptance of diagnosis, and advances in preparing autistic individuals for the workplace, there exists an influx of potential employees with autism. As such, the general understanding of the effects

of ASD on individuals and organizations keep pace with this reality so practicing managers can better comprehend the nuances of those on the spectrum and also how to maximize their motivation and performance.

The goals of this project are twofold. First, it will hopefully increase the understanding of how autism affects those transitioning into the workforce. Second, the paper aims to better prepare those affected by autism in the workplace, whether that be employees on the spectrum or those who manage and work with autistic employees. These objectives will be accomplished by taking dual paths. A synopsis of several key components of management study that relate to autism in the workplace is provided. By focusing on employees with autism as well as those who manage these employees, coverage includes the changing perspective of autism in organizations, autistic employee motivation, ASD diagnosis disclosure, and the job search process for individuals with autism. Next, the case narrative of Calvin and his life is integrated with autism as he shifts his focus from academic to career pursuits. Everyone with ASD is unique in their perspective and how they are affected by autism. Following a real-life example, particularly in this relatively new research area, can provide valuable insight into the nuances and potential of these employees (Eisenhardt, 1989). The ongoing narrative follows Calvin from his diagnosis, to therapy, to academic endeavors, and ultimately, to his job search. The story leans heavily on Calvin's own words in order to give as much transparency as possible into the point-of-view of someone living on the autism spectrum. Calvin, a disguised name, provided his thoughts via phone interviews, e-mail correspondence, face-to-face discussions, learning journals, and video logs.

This paper has the potential to contribute to the small, but growing number of voices discussing the intersection of autism and the study of management. Little is known about the experiences of those with ASD at work (Johnson & Joshi, 2016), but even less is known about autism and job search behaviors. This paper will provide just such a glimpse. This integrated coverage of the challenges and opportunities facing those with autism seeks to add some clarity to a slowly progressing area of note for scholars and practicing managers. Overall, this story of Calvin and the accompanying coverage of autism-related topics can help build on this limited progress.

### *Calvin and Early Diagnosis*

Calvin's earliest memories of his life with autism are as a five-year-old being pulled out of class to undergo a variety of tests. "Walking around a ball pit, standing on a balance beam, answering some lady's questions. Lots of tests and questions and physical challenges—sometimes it was fun, not always. I'm not entirely sure of the symptoms I displayed that led me to get tested." Although his parents knew of his ASD diagnosis, Calvin would not have a name for the differences he was starting to notice between himself and his peers for many years. "The goal was to treat me as a normal child, neuro-typical." In order to facilitate this, Calvin engaged in about three years of sensory integration, speech, and physical therapy. He did not necessarily remember these as therapy sessions, just as more of the many specialists he visited and different activities they had him try. These therapy sessions began to take a toll on Calvin and ultimately ceased. "My mother tells me that after my diagnosis...at some point I said 'I didn't like feeling different.' I wasn't able to understand at such a young age that I was different, only that I was treated differently."

At this point, Calvin's parents stopped the private therapy in hopes he would feel normal. However, he still saw the potential consequences of appearing different than his classmates and he worked to reduce the appearance of those differences. "Fitting in is very important at a young age because kids feel an instinctive need to be part of a social group without understanding why they do or how they can fulfill that need. Kids [with autism] can function similarly [to others], but they don't always understand that they aren't threatened, so sometimes actions [can be perceived as] hurtful bullying. I think my parents wanted to shield me from that, and my objection to the sessions was probably an unconscious, instinctive fear of that, too." Calvin appreciates his family's support and the decisions they made in his best interest. "They always do what they think is best for me... They were able to work with my autism without making me feel different from other people."

### *Autism Overview*

Autism is a term for a group of complex disorders of brain development. Although these disorders initially were recognized as distinct subtypes (e.g., autistic disorder, Asperger syndrome, pervasive developmental disorder-not otherwise specified [PDD-NOS], etc.), they were merged into one umbrella diagnosis of ASD with the May 2013 publication of the DSM-5 Diagnostic Manual (Autism Speaks, n.d.). ASD refers to "neurodevelopmental impairments in communication and social interaction and unusual ways of perceiving and processing information" (World Health Organization, 2013, p. 7). It manifests itself, in varying degrees, with difficulties in social interaction, nonverbal and verbal communication, and repetitive behaviors (Autism Speaks, n.d.).

According to the U.S. Center for Disease Control and Prevention (CDC), 1 in 68 American children is on the autism spectrum. Autism is more common among boys than girls. In particular, it is estimated that 1 in 42 boys and 1 in 189 girls will be diagnosed with autism in the United States this year. Moreover, ASD currently affects 3 million children and adults in the United States. Research suggests that the prevalence of autism has continued to increase by 10% to 17% each year, making it one of the fastest growing developmental disorders. There is no definitive explanation for this growth in ASD diagnoses. However, many researchers believe improved diagnosis, increased acceptance of diagnosis, and environmental influences have contributed to the growing rate of autism (Autism Speaks, n.d.).

Because it is a spectrum, each individual with autism is different. Some have a significant disability and are unable to live independently. However, approximately 40% have average to above average intellectual abilities. These individuals can have exceptional academic, visual, and music skills. (Autism Speaks, n.d.). In addition, they often have a passionate interest in or fixation on different idiosyncratic items. This manifests in a mechanical focus on how things work, rather than a psychological focus on how people work (Baron-Cohen & Wheelwright, 1999). Their distinctive abilities and atypical worldview are a source of pride for many individuals on the spectrum (Autism Speaks, n.d.), but many others are confused about autism. This spectral nature of autism leads many to assume that one person with autism is like everyone else on the spectrum, but in actuality, "if you've met one person with autism, you've met one person with autism" (Shore, 2003).

### *Calvin's Teenage Years*

Throughout junior high and high school, the differences Calvin was noticing with other kids became more pronounced. “I looked at things differently than everyone else. I do not like surprises, even good surprises. Anything that is not preplanned really threw me off...I like to be prepared for the day, having a schedule or expectations helped that.” The complexities and unpredictability of teenage years led to a few minor incidents that highlighted Calvin's unique perspective and difficulty with unanticipated actions or events. In particular, he finds social situations with unwritten social norms and unclear messages difficult to navigate. “I would not understand social rules and so obviously would not follow them. This caused a few problems at times...Things like personal space, bad manners, missing social cues. I did not do these things on purpose, I just did not understand. Now I know better how to interact with others.”

As he aged, communication challenges also hindered his ability to fully grasp the nuances of social exchanges. This led him to never fully understand what was going on and to sense that he was missing something much of time. “I still have trouble with sarcasm and metaphors. Sometimes in classes or in conversations I would misread a situation because I did not notice someone was being completely sarcastic or I missed an innuendo that everyone else got. I'm getting better at reading other people's expressions and gauging their reactions, but none of it comes naturally to me and I still miss a lot of things.” Calvin's approach to problem solving and academic work helped him earn his Eagle Scout and International Baccalaureate designations in high school. Ultimately, he went on to a nationally-ranked private university in the lower midwestern United States to begin his college career.

### *Shifting Attention to Autism*

As previously stated, one of the proposed reasons for the increasing prevalence of autism is improved diagnosis. This suggests that many adults with ASD have been living, and ostensibly working, without a diagnosis that might explain some of their strengths and weaknesses. Autism in the workplace is nothing new. However, some organizations recently have recognized that employees with ASD are valued human capital that should be managed appropriately. A survey by the National Autistic Society found that only 15% of adults with autism are employed full-time, but more than 60% of those who are unemployed would like to find a job, making high-functioning autistic individuals an untapped resource for talent.

The leaders of Winston Capital Management believe the highly developed analytical skills of some people with autism can give their organization a valuable competitive advantage. Similarly, Goldman Sachs has been actively recruiting individuals with ASD since 2003 for internships, which have resulted in permanent employment contracts for some (Tickle, 2009). In 2015, Microsoft created a pilot program to focus on hiring individuals with autism. According to Mary Ellen Smith, Vice President of Worldwide Operations, “[p]eople with autism bring strengths that we need at Microsoft, each individual is different, some have an amazing ability to retain information, think at a level of detail and depth, or excel in math or code” (Autism Speaks, n.d.). Similarly, Walgreens has championed autistic employees as well, exemplified by their South Carolina distribution center that employs a number of employees with disabilities like

autism (Autism Speaks, n.d.). A growing number of employers are taking advantage of the diversity provided by employing those on the spectrum.

### *Calvin Discovers His Diagnosis*

During his sophomore year in the engineering program, Calvin experienced an event that would shape his outlook on his interactions with others and life in general. “My partner disappeared the night before an engineering competition, leaving all our work locked away in his room. Not only did I design an entirely new contraption from the materials in my room, I also outperformed most of the students at the competition the next day, achieving third place overall.” This experience was a double-edged sword for Calvin. He knew his work performance at a difficult task was high compared to his peers—peers that had worked with a partner with better materials, for a longer time. However, shortly after this event, Calvin found out about his autism diagnosis, nearly 15 years after his initial testing.

“When I found out later in college, I was very relieved this time to know that I was different. I was much more mature intellectually than I was as a small child and thus, better equipped to understand this information.” Calvin, with the help of his parents and others, was able to utilize resources to help him understand his method of thought as well as handle social situations. “Finding out gave me the tools I needed to work with it to the benefit of my schoolwork and personal life.” Calvin switched from the engineering program to being a Human Resources major in the College of Business, which is a very people-oriented discipline. As he pursued his degree, he worked various jobs on and off campus and had multiple summer internships. With newfound insight gained from his diagnosis, Calvin was able to predict and even take advantage of potential conflicts at school and work that were caused by his autistic outlook.

### *Managing Those with Autism*

Although managers may be anxious, ignorant, or even prejudiced about hiring people with autism, those making hiring decisions should recognize the current reality that job seekers with autism provide tangible benefits to organizations. The National Autism Society’s training and employment service is called Prospects. According to Prospects employee David Perkins, “when employers realize reasonable adjustments for our guys boils down to good management practices, they see there can be wider benefits” (Tickle, 2009).

In order to attract, select, and retain qualified applicants with ASD, managers must think about their recruitment policy and evaluation process. It is important to be precise in the job description because applicants with ASD likely will interpret words and phrases literally. In addition, organizations should evaluate the emphasis that is put on communication skills for all jobs. During the interview, managers must be aware that individuals with ASD may not demonstrate positive body language and may struggle with hypothetical interview questions. Furthermore, a thorough and realistic job preview can enable the job seeker to ascertain if they would be a good fit for the given position. Once hired, managers must be very clear about the task, the expected standards, and the deadline for completing it. In addition, training and mentoring may help employees with ASD understand their jobs and the nuanced social

climate of the organization, and give insight to other employees about working with someone with ASD. Managers also should be willing to make minor adjustments for qualified employees who may be over-sensitive to workplace stimuli (e.g., bright lights, background noise, etc.). Finally, managers should not force employees with ASD into unnecessary teamwork or social gatherings without their consent (Tickle, 2009).

#### *Calvin at Work*

“I have to regularly adjust my behavior to match what people expect of me, based on what I’ve learned from past experience since most people don’t understand how an autistic person is best managed. For example, one of my duties at the Fitness Center is to clean the exercise equipment regularly and I have to clean ‘everything’ on each machine. Normally, I’d assume that ‘everything’ literally meant every part of the machine that I could reach needed to be meticulously clean until nothing perceivable was left...[O]bviously I don’t need to be as thorough as I’d reflexively think.” In addition to his job at the fitness center, Calvin has worked as a desk clerk for a legal clinic, a ranch hand, a database analyst, and as an independent study coordinator (i.e., tutor) at a literacy center. Similarly, Calvin was active in student service organizations and volunteering efforts, which provided many opportunities to interact with others. These work experiences coupled with his solid academic performance (GPA of 3.2 and 4.0 in his major) provided confidence in his capabilities, but he knew there was one more hurdle to overcome.

#### *Autism and Job Search*

Like any job seeker, individuals with ASD must prepare for the job search. It is important to understand one’s strengths and weaknesses, the requirements of the job, and how they interact (they being the strengths and weaknesses). In recent qualitative research, one respondent with ASD said, “I was born too early to get diagnosed as a young person, so that I could get an appropriate career, work, and guidance. And now I have had a career in something that I was actually suited to instead of struggling along in a lot of jobs where the best I could do was get along” (Johnson & Joshi, 2016, p. 435). Individuals with ASD often have limitations in their ability to communicate and interact with others at work. For some, jobs with limited social interaction may be a good fit. However, this qualitative research suggests that some individuals with ASD actually prefer jobs with social interaction as long as it is not overwhelming. These respondents appreciate social interactions at work if they were scripted, did not involve crowds, and/or were not face-to-face. Not only did this type of work help them avoid social isolation and its negative consequences, but it showed them that they could overcome the constraints associated with their disability (Johnson & Joshi, 2016).

In addition to finding the right type of job, individuals with ASD must prepare for the interview process, which can sometimes put them at a disadvantage because of their inappropriate affective expressions and social skills (Baron-Cohen, 1997; Mak & Kwok, 2010). Most major organizations use structured interviews that include a set of job-related questions to assess relevant knowledge, skills, and experiences. Structured interviews either include situational interview questions, which ask job applicants what they would do in a hypothetical situation (McDaniel et al., 2001), or behavioral

interview questions, which ask job applicants how they have handled a situation in the past (Campion, Campion, & Hudson, 1994). Individuals with ASD often have problems projecting themselves into imaginary situations (Tickle, 2009), so they must prepare themselves for these situational and behavioral-type interview questions. Human Resource practitioners recommend reviewing the job description to understand the requirements of the job, researching potential situational and behavioral questions that might apply to the job, and brainstorming personal experiences that could be used to answer those questions before the interview.

### *Calvin's Job Search*

Calvin prepared for his post-graduation job search like any dutiful business undergraduate, attending many workshops held by the very active College of Business Career Center. Workshops on resumes, business attire, social networking, dining etiquette, and many more provided a structure to help Calvin prepare for the unpredictability of the job interview. "I prepare by reviewing the description of the job I'm interviewing for plus what the company stands for. Then I review my resume to make a short list of skills and experience that would apply to the job or the company in general. The most important thing is to make a list of about three good questions to ask my interviewer." This preparation can help any job applicant be more grounded in the interview process, but for someone on the spectrum who can be discontented in unpredictable social situations, there are other considerations.

The pre-interview anxiety and ongoing over-analysis during the interview make it challenging. "There is always some level of discomfort during an interview because the stakes feel higher than perhaps they usually are, and my autism is partly responsible for that. The nature of autistic thinking is often an all-or-nothing perspective where the idea of failure is magnified to disastrous proportions. Autism can also affect an interview because I may interpret and answer a question differently than the way it was asked. Since my perspective is so different from other people, I often have to put a lot more thought into what I'm about to say so that it makes sense in the context that they asked the question and not just the context in which I interpreted the question. Again, I probably attribute more weight to [a] question than there really is; they may even appreciate a real answer more than a canned answer to their canned question." Calvin tries to mitigate these parallel thoughts during the interview process by remembering the big picture and that he sees things through a different lens than those interviewing him.

### *Disclosing an Autism Diagnosis*

A related issue to this topic is whether or not to disclose an ASD diagnosis during and/or after the interview. In the United States, the Americans with Disabilities Act (ADA) prohibits organizations from discriminating against individuals with disabilities in employment decisions. Once qualified individuals disclose their disability, the ADA also requires organizations to make reasonable accommodations so these individuals are able to perform their job. Unfortunately, individuals who disclose their disability during the interview process may give the organization a reason to eliminate them from the applicant pool, regardless of the legality of their decision. Employment experts advise individuals to disclose their disability only after they have been given a job offer (Ryan, 2004).

Once hired, individuals with ASD must decide if it is in their best interest to disclose their diagnosis. Recent qualitative research suggests that respondents with ASD have overwhelmingly tried to pursue nondisclosure. For example, one respondent avoided disclosure because of the detrimental stereotypes about autism. She said, “I do not want to be perceived as what I feel is a stereotype of—I think people think they’re rude and mentally slow—I do not want to be perceived as a stereotype” (Johnson & Joshi, 2016, p. 436). Similarly, others worried about the career consequences of disclosure. One respondent said, “I guess one obvious example is a tendency to think you are going to be evaluated poorly, that supervisors are going to say hurtful things” (Johnson & Joshi, 2016, p. 437). If individuals chose to disclose their diagnosis, they shared this information with close friends or in workplaces that were perceived to be accepting and educated about autism (Johnson & Joshi, 2016). The authors of the study encouraged individuals with ASD to find extra-organizational support (e.g., employment counselors, job coaches, etc.) to identify the appropriate targets of disclosure at work.

#### *Calvin and Diagnosis Disclosure*

Acknowledging the importance of employees’ fit within their organization, Calvin is interested in seeking out autism-friendly businesses that may appreciate and maximize the input from individuals on the spectrum. “I recently read an article about Marvel Comics and how they used a team of autistic employees to work on a popular movie. There are other companies that see the advantages of people like me. We are very detail-oriented, comfortable with repetitive, even monotonous or menial tasks, and follow instructions well. There are a few companies in my area, like Walgreens, that look for autistic employees, but I have not yet come across opportunities with those companies that match my career goals and skills.” While there are a growing number of organizations that actively seek out employees on the spectrum, Calvin anticipates there will be many more opportunities as people have a more accurate awareness of autism. The reality for Calvin is it is difficult to know how organizations will react to the knowledge of a potential or current employee’s ASD diagnosis. Ultimately, autistic job applicants face a difficult decision when it comes to making the choice to disclose their diagnosis or not.

“I would only tell an employer about my autism if I knew that it was something specific that they were looking for in candidates, which some companies do. Otherwise I would keep it to myself because they may see it as a disability that they need to pay for without fully understanding the many benefits that an autistic worker can provide.” The decision not to disclose his diagnosis is made more difficult because Calvin acknowledges that he likely would be better accommodated if he shared this information with his future employer. There are potential benefits and disadvantages to sharing one’s diagnosis, but currently the negatives are more pressing for Calvin. “It would help [if employers knew about ASD diagnosis] because it increases the understanding for both sides, and it leads to better interaction and more patience for all involved. Unfortunately, there still exists a stigma with autism that is hard for neurotypical people to understand what it is like. When you hear the term ‘retarded’ or anything negative related to autism it is offensive. Autism doesn’t mean I’m mentally

unstable or challenged, it just means I think differently. Autism, except in extreme cases, is not a disability.” The fear of being stigmatized is the primary reason for Calvin’s decision to withhold his diagnosis from employers. Coworkers and customers are also not usually aware of Calvin’s autism. “As for telling coworkers, I will not tell them unless they are also very close friends or absolutely need to know. I can’t think of any likely scenarios where the latter would come up.”

### *Motivation of Autistic Employees*

To gain a better understanding of employees with autism, it is important to evaluate their source of motivation, which may be different than other individuals. The Job Characteristics Model (JCM) (Hackman & Oldham, 1976) provides a theoretical framework for this purpose. The JCM identifies critical psychological states (i.e., felt meaningfulness, felt responsibility, and knowledge of results) as precursors to positive work outcomes such as increased job satisfaction, lower absenteeism and turnover, and higher performance (Renn & Vandenberg, 1995). In turn, these psychological states are derived from characteristics of the job itself. The five core characteristics of the job are skill variety, task identity, task significance, autonomy, and feedback. Examining some of these characteristics and how they differently affect the motivation of employees with autism is a beneficial exercise for managers.

Meaningfulness of work, or felt meaningfulness, indicates that the work means something to the employee and is important. This meaningfulness is vital for intrinsic motivation. According to the JCM, meaningfulness is affected by skill variety, task identity, and task significance. Skill variety is especially relevant to managing employees with autism. Typically, jobs that require different types of skills and abilities are more meaningful than jobs that are routine or menial. However, employees with autism often derive significant meaning in repetitive tasks that other employees may perceive as demeaning. Too much skill variety can be overwhelming for any employee, particularly one diagnosed with ASD. In general, the best way to find the proper balance of skill variety is to work directly with the individual to understand the nuances of their motivation.

Responsibility for work outcomes is another critical psychological state in the JCM. Felt responsibility is driven by autonomy, or the degree to which the task provides freedom and independence to plan and complete the work. The theory indicates that the more autonomy or decisional control that an employee has over the work itself, the more motivating the work will be (Hackman & Oldham, 1975). However, for employees on the spectrum, too much autonomy may be demotivating. One autistic individual notes, “[m]any autistic persons face a similar problem: the inability to stand up as their own persons under the pressure of personal social autonomy of normal persons” (AutismOne, n.d.). Providing increased autonomy to autistic employees in accordance with the JCM may have a deleterious effect on the motivation of these unique employees.

The third critical psychological state in the JCM is knowledge of results, which is facilitated by feedback. Clear, detailed, and actionable feedback about the effectiveness of employees’ performance leads to an understanding of their work’s impact, as well as how it can be improved. Feedback can come from the work itself or external agents

(e.g., managers) (Hackman & Oldham, 1975). For autistic employees, feedback is likely to be the most critical of the five job characteristics of the JCM. One characteristic of autism is the need for structure and clear details of what is expected in a given situation (The National Autistic Society, 2016). Feedback can provide a person on the autistic spectrum these important details in terms of what is expected in addition to how well the employee has fulfilled those expectations. Feedback should be direct and delivered consistently, yet sensitively, in order to maximize the knowledge of performance for employees on the spectrum.

### *Calvin's Advice*

Calvin knows that everyone with ASD is different and that every situation is distinct and complex. He also knows he has a unique perspective on autism and work, which may be beneficial to employers, coworkers, and others with autism. For employers, he focuses on awareness, consistency, and clarity of communication. "Advice I would give to employers would be to educate themselves on what autism is and how it can benefit them. Like any other employee, some strategies are more effective than others for getting the best work from me. A tip is that ambiguity should be minimized when possible and specific instructions alleviate confusion in situations that are open to interpretation. For situations that are ambiguous, a framework to start from is helpful. Also, frequent or sudden changes to a plan or goal can be especially unsettling for someone who values order. Be sure to explain the reasoning behind any change, provide warning if other changes are likely, and respect any input the employee has." For coworkers, patience and mutual understanding is key. "Be patient if a misunderstanding occurs and be sure to clear up all the points where the confusion originated." Although Calvin is not sure what others can learn from his situation, he shares advice for those who are on the spectrum as they try to enter the workforce and manage their careers. "Ask a lot of questions, don't make assumptions when a question will clear it up, and try to look from the perspective of your coworkers. Don't be discouraged. You have the skill to get a job and the ingenuity to become self-employed. It's about what's important to you and what works for your situation."

## **Discussion**

The convergence of topics relevant to autism and work is extensive and continuing to grow. At this point, the in-depth study of many of these topics is in need of further investigation. This project offered insight into a few of these concepts that can advance the overall knowledge of maximizing the potential of all employees, including those with ASD. This paper took a dual focus of looking at one individual's story coupled with coverage of a few relevant topics related to autism in organizational life. Hopefully this can engender continued inquiry into this overlooked, but pertinent area of study.

The insight offered by Calvin's story provided a look into one individual's life with autism. Those with ASD who are transitioning from student life to their career have similar concerns as other job seekers: performing well in the interview, finding the right fit, and being prepared. But like anything in life for those with autism, the job search process is different because they see things uniquely. Calvin's narrative provided

powerful insight into these similarities and differences. This case and the accompanying overview of topics offered some clarity to the complex processes associated with autism in the workplace.

While limited, this project provided several implications for management research, practice, and education. Research on autism in the workplace should consider the multiplex nature of the disorder and how it interfaces with the work environment. These issues of motivation, search behaviors, communication, interview process, etc. are relevant to all employees, regardless of their ability. However, the general understanding of how they are distinctively affected by autism is limited, albeit growing. As research on these and other issues lag, the ability for practicing and prospective managers to better understand and manage employees on the spectrum is incomplete. Business education can be updated to better incorporate these ideas not only to maximize the potential of employees with autism, but also to educate students with autism about themselves as well. The influx of new potential employees on the spectrum into the job market is logically linked with an influx of business students that are on the spectrum as well.

### *Future Research*

As mentioned above, much more in-depth and generalized analysis is needed to enhance the knowledge of autism and its effect on the workplace. This study, while a small step in that direction, did not focus on several key characteristics that should be considered. While numerous, a few that are notable include topics of social interaction (e.g., teamwork), mentorship, and training and development. A key characterization of those on the spectrum is difficulty with social interaction, including verbal and non-verbal communication challenges (Autism Speaks, n.d.). Understanding the perspective of those with autism and how to best manage team processes and construct work in teams is important. Another aspect of the study of work that is meaningful is mentorship and autism. Many organizations that have successfully employed those on the spectrum stress the importance of providing a mentor, or champion for that employee (Autism Speaks, n.d.). This provides someone that can offer structure, establish expectations, and clarify any misunderstandings. Also, research on proper training and development protocols best suited for individuals with autism will be useful in maximizing performance and satisfaction. Numerous training programs exist that can facilitate autism awareness training for the managers and coworkers of those with autism as well as the onboarding of new employees that are on the spectrum. Ongoing training and development of an employee with ASD can provide structure and manage expectations on a continuing basis.

## **Conclusion**

By the publishing date of this article, Calvin was in the second round of interviews with an organization and position that excites him. He is trying to stay level-headed and de-emphasize the importance of the meeting, but admittedly it is difficult. His story is as unique as each individual on the spectrum, but his point of view illustrates the reality of living and working with autism.

This study extended the research on autism in the workplace, specifically related

to job search and interview behaviors. It is hoped that the information contained in this paper will benefit future and current employees with ASD, their managers, and ultimately their organizations.

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# Person-Organization Fit and Autism in the Workplace

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*Social interactions and social contexts are a particularly relevant and problematic issue for those with autism. The impact of the behavior of an individual with autism cannot be understood without understanding the organizational context in which he/she resides. Workplace cultures differ greatly and behaviors which are problematic in one organizational culture may be acceptable in another organizational culture. The organizational construct, person-organization fit (PO), provides a framework for understanding how social interactions may affect those with autism in the workplace. This paper will do this by a) describing the social interaction patterns of those with autism; b) describing organizational culture as a social environment and how PO fit operates to affect the performance of those within an organization; c) using the construct of PO fit to contextualize the social interactions of those with autism in a workplace; and d) discussing the human resource and legal implications for dealing with autism in the workplace.*

Bowen, Ledford, and Nathan (1991) proposed a "new model of selection" in which employees are hired to fit the characteristics of an organization, as well as the requirements of a particular job. This notion is based on the idea of hiring a "whole" person who will fit well into the specific organization's culture. They proposed the selection process should achieve two types of fit (Bowen et al., 1991). First, the selection process must match the knowledge, skills, and attitudes (KSAs) of the individual and the task demands of the job (i.e., person-job fit). Second, organizational processes attempt to match individual dispositional variables and the culture of the organization (i.e., person-organization fit). These two forms of fit define person-environment fit (Kristof, 1996).

**Person-job (PJ) fit** is concerned with the degree to which there is a match between an employee's skills and abilities and the requirements of the job the employee holds

(Kristof, 1996). The better the match, the more likely the employee is to be successful. As this match decreases and employees do not have the needed skills and abilities to perform the job, employees tend to become frustrated and dissatisfied which can lead to a decrease in organizational performance. This concept of fit is consistent with traditional approaches to human resource practices (e.g., selection and performance evaluation). Defining person-job fit is done in traditional ways by matching the needs of job analyses to the knowledges, skills, and abilities of applicants. From a legal perspective, PJ fit is concerned with the essential job functions as defined in the Americans with Disabilities Act (ADA) (cf., Gutman, Koppes, & Vodanovich, 2011).

**Person-organization (PO) fit** is concerned with the match between employee characteristics and the characteristics of the organization (e.g., organizational culture) in which the employee works (Kristoff, 1996). The better the match, the more likely the employee is to be a successful employee. For example, some organizations value teamwork and some organizations value individual accomplishment. Individuals with a high need for individual accomplishment will have good fit with an organization valuing individual accomplishment; however, their fit will be poor in an organization valuing teamwork. As this match decreases and employee characteristics and values do not reflect organizational characteristics, employees tend to become frustrated and dissatisfied, which can lead to a subsequent decrease in organizational performance. This concept of fit may impact traditional human resource practices. However, this impact is much more complex and not as well-defined from a legal perspective. The primary organizational variable PO fit relates to is organizational culture. Organizational culture is defined in part by the social interactions among workers. These interactions, in turn, affect performance and related concepts covering social interactions such as a hostile work environment (cf., Gutman et al., 2011).

Social interactions and social contexts are a particularly relevant and problematic issue for those with mental or psychiatrically defined disabilities. Stefan (2002) stated that individuals with such mental and psychiatric disabilities interact with the organizational environments of the companies in which they are employed. The impact of the behavior of an individual cannot be understood with understanding organizational cultures. Stefan (2002) noted that workplace cultures differ greatly and that behaviors which are problematic in one organizational culture may be indicative of creativity in another organizational culture.

Therefore, understanding the impact of a mental or psychiatric disability requires that both the behavior patterns of the individual with such a disability, the organizational culture in which the individual resides, and the potential fit (or misfit) of these cultures be understood. This is particularly important because organizations are required to balance the needs of members of different protected groups. For example, the behaviors exhibited by an individual with a mental disability may disturb a member of another protected group (e.g., a woman) and the organization must come to a decision regarding these two individuals. This decision must be made carefully with a full understanding of the nature of the mental or psychiatric disability and the part played by that disability in social interactions.

## Social Interaction Patterns and Autism in the Workplace

Individuals with autism have deficits with social skills that may be markedly different depending on the functioning level of the individual which can affect their participation in employment (Chiang et al., 2013). Although social deficits are more apparent with individuals who have intellectual disabilities, it is important that employers understand that individuals with autism with normal or above-average cognitive abilities will be impacted by impairments in their social repertoires. For example, social-skills deficits may manifest as impairments in conversation skills, detecting and responding to subtle social cues, and developing and maintaining appropriate relationships with coworkers, bosses, and customers (Howlin & Goode, 1998).

A variety of social skills are necessary to perform work-related interactions and professional social requirements at or above employer's expectations. The employee needs to be able to respond to subtle social cues from his/her bosses, coworkers, and customers. These social cues can include facial expressions that indicate signs of emotional states (e.g., frustration, confusion, happiness, and boredom), the amount of personal space to provide another person (e.g., standing too close to others when talking), posture, and body language (e.g., slouching). Individuals not only need to be able to detect such changes in facial expression and body language, but also need to know how to respond to these cues given the context of an organizational culture. This knowledge of proper responses is critical for successful transition to, and performance within, an organization.

In addition to understanding social cues related to facial features and body language, individuals with autism can have difficulties understanding situational social cues. This could include situations where a person in the social environment needs help (Reeve et al., 2007). This could be, for example, peers in the organization and customers of the organization.

Individuals with autism may struggle with conversation skills, including answering questions directly, engaging in casual chit-chat exchanges, greeting and departure skills, and having meaningful, context-appropriate conversations with bosses, coworkers, and customers (Bates, 1980; Hughes et al., 1995). Eye contact may be sporadic, nonexistent, or too intense, resulting in awkward social interactions with others. In addition, individuals with autism may have difficulties with perspective taking, resulting in difficulties understanding how they might be viewed by others. These difficulties with conversation skills can negatively impact how well individuals perform their work responsibilities or how positively others view them and want to engage with them.

Social-skills deficits can interfere with the working relationship with an employer. Individuals with autism may lack imitation skills needed in social situations to help them acquire skills through observational learning or to inform how to respond in a novel or difficult situation by watching a coworker. In addition, they may have poor self-management skills and as a result, may engage in off-task behavior or prolonged conversations that can impede productivity. Individuals with autism may have difficulties engaging in problem-solving skills, including defining the problem, perspective taking, considering consequences and choosing the best option, developing

a plan of action, evaluating one's actions (Bonete, Calero, & Fernández-Parra, 2015). They also may not know when or how to request assistance, resulting in a situation when the individual either stops the work behavior (i.e., he waits until a supervisor comes to check-in with him) or performing a skill incorrectly (Bonete et al., 2015). Individuals with autism may also have difficulties expressing differing opinions and accepting criticism (Bates, 1980), making it difficult for supervisors to provide feedback and for the individual with autism to incorporate that feedback into effective behavior change. Finally, individuals with autism may have challenges with self-advocacy and negotiation skills (Quinn et al., 1992), making them more susceptible to abuse in the workplace or unfair work distribution.

The individual with autism faces a number of challenges in the workplace. The inability to perceive social cues and learning to respond appropriately may adversely affect the influence of the organizational culture on them. Organizational culture and PO fit are two important constructs relating to the effect of social interactions and careers in organizations. These two constructs are discussed in the next section.

### PO Fit and Organizational Culture

Person-organization fit has been defined as "the congruence between patterns of organizational values and patterns of individual values, defined here as what an individual values in an organization, such as being team-oriented or innovative" (Chatman, 1989, p. 459). Kristof (1996) defined PO fit as the fit of the person not with any specific subgroup, job or vocation, but the organization as a whole. Cable and DeRue (2002) described PO fit as the judgment of value congruence between the organization and the employee.

The emphasis in these definitions is on the match of an individual's values, when considered along with the value system in a specific organizational culture, and the potential effects that this match (or lack of match) has on that individual's subsequent behavior, attitudes and career in the company. Person-organization fit has been shown to be related to a number of organizational variables including (1) job choice decisions by organizational applicants (Cable & Judge, 1996); (2) organizational attraction of applicants (Judge & Cable, 1997); (3) selection decisions made by recruitment interviewers (Cable & Judge, 1997); (4) employee job satisfaction, job tenure, and career success (Bretz & Judge, 1994); and (5) employee's level of task and organizational citizenship performance (Goodman & Svyantek, 1999).

An important thing to note, however, is that, even when controlling for PJ fit, PO fit may result in positive or negative work outcomes which affect the success of the employee (Bretz & Judge, 1994; O'Reilly, Chatman, & Caldwell, 1991). When Lauer and Kristof-Brown (2000) investigated the distinction between PJ and PO fit, they found that the two constructs weakly related to each other ( $r = .18$ ), implying that employees distinguish between the types of fit in the work environment. The findings of Kristof-Brown, Zimmerman, and Johnson (2005) supported the idea that job-related constructs are most strongly associated with attitudes about the job, while organization-related constructs are related to organizational attitudes (Shore & Martin, 1989). This is evident in job satisfaction's high correlation to PJ fit and organizational

commitment's relationship with PO fit. Positive outcomes of person-organization fit include more commitment, more satisfaction, and less intention to quit (Bretz & Judge, 1994; Chatman, 1989; Meglino, Ravlin, & Adkins, 1989; O'Reilly et al., 1991). Therefore, for any employee, including those with autism, careers in an organization are affected by both the ability to perform essential job functions and to adapt to the organizational culture.

**Organizational culture** may be defined by a set of shared values and norms, held by employees, which guides employees' interactions with peers, management, and clients/customers (Morgan, 1998). A major reason for the formation of organizational culture is the creation of social order (Trice & Beyer, 1993). Organizational culture allows recurrent behavior patterns among people to develop within organizations.

Organizational culture affects behaviors within an organization. Organizational culture defines a strong situation (Mischel, 1977) for individuals residing within it. A strong situation provides people with generally accepted rules and guidelines for appropriate behavior. The rules that are present in strong situations constrain people from acting in a manner inconsistent with accepted conduct and behavior. Organizations develop values and norms to set parameters on the behaviors exhibited within an organization. Understanding these parameters becomes critical for employees within the organization.

The process by which person-organization fit may come to maintain an organizational culture across time; influence organizational human resource practices; and affect employee behavior is illustrated in the Attraction-Selection-Attrition (ASA) model (Schneider, 1987a; Schneider, 1987b; Schneider, Goldstein, & Smith, 1995; Schneider, 2000). Schneider proposed that "attributes of people, not the nature of the external environment, or organizational technology, or organizational structure, are the fundamental determinants of organizational behavior" (i.e., "the people make the place") (Schneider, 1987b, p. 437). The Attraction-Selection-Attrition (ASA) framework is a mechanism for explaining the homogeneity of organizational level variables such as organizational culture found in organizations. Schneider (1987a) stated that this homogeneity is due to three main processes. Firstly, it occurs because people are attracted to places that they prefer (Attraction). People will seek out organizational environments in which they are comfortable being a member. The primary human resource practice affected by this is recruitment and there are potential legal implications for organizations here. Secondly, homogeneity results from people being placed into settings to which they are perceived to be compatible (Selection). Organizations tend to select certain individuals who appear to fit with those already there. The primary human resource practice affected by this is selection and there are potential legal implications for organizations here as well. Thirdly, if people manage to enter an environment that is not a fit for them, they are more likely to leave it (Attrition) or the organization may terminate them. The behaviors exhibited by individuals with lack of fit may come to be dysfunctional (Svyantek & Brown, 2002) and may potentially be grounds for dismissal from an organization (Svyantek, Cullen, & Doerr, 2015).

Arthur et al. (2006) stated that PO fit may also be used to make decisions about the termination of employees. The question remains whether or not such

termination decisions are defensible. Svyantek et al. (2015) provided a model showing that undesirable behaviors may be grounds for dismissal of employees exhibiting problematic behavior.

There has been a growth in research on dysfunctional behavior in the workplace (Griffin, O'Leary-Kelly, & Collins, 1998). Much of this research has focused on how individual differences in employees relate to dysfunctional behavior. Griffin et al. (1998), for example, developed a model of the dynamics of dysfunctional behaviors in organizations that is concerned with individual differences and individual pathologies as antecedents of behavior. This model, however, also includes organizational characteristics (e.g., norms, culture, reward and control systems) as potential influences on employee behavior in general.

Person-organization fit is a critical variable in understanding the relationship between organizational culture and dysfunctional behavior as PO fit is for desirable behavior (Svyantek et al., 2015). Not all individuals are equally suited to all organizations. The performance of dysfunctional behavior may be a matter of a poor fit between the individual and the situation and not just a set of individual and/or organizational variables considered in isolation from each other. Dysfunctional responses to poor fit, however, include increased stress, burnout, cynicism, role ambiguity and role conflict among employees. Poor fit is not necessarily a deficit of either the person or the organization. Rather, misfit occurs when there is a mismatch between employee value systems and organizational culture. This misfit, however, leads to issues which the organization may be required to address because of decrements in performance found. Behaviors may be seen as socially deviant in a particular organization or for a particular group within an organization. Refusal to change these, when given feedback about them, may lead to termination. The key here for the decision to terminate is not necessarily that the behaviors are simply observed. Rather, the decision to terminate should be based on the response of the employee to feedback about the appropriateness of the behavior in the current context.

In addition, it has been proposed that misfit has the potential to lead to decreased employee and organizational performance (Svyantek et al., 2015). This proposal is based on the work of Steiner (1972). Steiner proposed that, for any job in which groups were involved:

$$\text{Actual Productivity} = \text{Potential Productivity} - \text{Process Loss}$$

Process involves the people in an organization. Therefore, the human element in this model is a source of error. Process loss involves communication, interpersonal dealings with others, and discussing and making decisions for situations where there is no clearly superior solution. Individuals who lack person-organization fit will cause disruption and process loss. This decreases the performance of the organization in which they reside. The greater the misfit, the greater the process loss and probability of termination of the employee.

There is an interesting conundrum in studying PO fit. This construct is recognized as an important construct in predicting employee well-being and performance criteria. However, there is a paucity of work on PO fit's legal standing and legal implications

for human resource management practice. Svyantek et al. provided a logic for the use of PO fit in human resource practice. Their work helped address the issues involved in identifying the implications of PO fit for organizations for making human resource decisions involving individuals with autism in the workplace. Interestingly, analysis of the available legal decisions on mental disabilities in the workplace also inform the legal standing of PO fit as a viable factor in employment decisions.

## **Autism and PO Fit in the Workplace**

There are many ways in which the social interactions of those with autism may affect their PO fit. This section addresses some of the potential issues that may arise for those with autism in the workplace. In addition, legal decisions which relate to these social interaction issues for those with autism are also looked at.

### *Autism and Workplace Interactions Issues*

The need to understand social cues and appropriately respond is an integral part of performance in organizations. Individuals with autism need to be able to respond to these cues given the context (i.e., discriminate the social cue and the person engaging in the social cue). This is important in interactions with superiors, peers and customers/clients of an organization.

The interaction with supervisors is a critical social situation in which all employees are placed. If a supervisor is displaying a downturned or thinned mouth, flared nostrils, and lowered brows that all indicate frustration and has his arms crossed across his chest, this might signal a number of things, including 1) that the employee needs to discontinue what he is doing immediately; 2) that his performance is poor and that he needs to adjust his behavior to please his boss; or 3) that his boss is simply having a bad day. Those with autism may have difficulty selecting which response is appropriate in these types of situations.

Such social understanding difficulties may occur for the peers of those with autism as well. Individuals with autism may lack imitation skills needed in social situations to help them acquire skills through observational learning or to inform how to respond in a novel or difficult situation by watching a coworker. Often coworkers, for example, ask for help indirectly through verbal statements. A coworker may state, "I don't know how I am going to get all these papers filed, copies made, and write the report in time to make my deadlines." Although the coworker did not directly ask for help, based on her statement, one might offer to help file papers to assist the person in completing her responsibilities within the timeline. Lacking discrimination and imitation skills, the individual with autism has not acquired the proper response for this organization. Alternatively, someone may require help based on the physical arrangement of the environment. For example, a coworker carrying a large stack of papers down the hallway who drops some of those papers and a coworker setting up for a meeting and having technology difficulties are situations in which it would be appropriate to offer assistance. Individuals with autism may have difficulties understanding indirect verbal statements and physical cues that indicate situations in which one should offer to provide assistance. This difficulty may lead those with autism to have problems

performing appropriate organizational citizenship behaviors and helping their peers. In addition, they may have poor self-management skills and as a result, can engage in off-task behavior or prolonged conversations that can impede productivity.

One particular area of potential problems is that the deficits in social skills can result in strained relationships with coworkers. Individuals with autism may have difficulties detecting humor and sarcasm and thus might respond to their coworkers literally when a coworker attempts to make a joke or a nonliteral statement. Individuals with autism may have difficulties telling innocent white lies (e.g., saying “yes” when someone asks if she looks okay regardless of how she actually looks). They also might have difficulties interacting with others during breaks and over lunch due to lack of appropriate conversation skills or leisure skills during those periods of unstructured time. Because of such social-skills deficits, individuals with autism may have difficulties forming meaningful relationships with their coworkers. Repeated negative interactions can even result in the development of hostile relationships with coworkers. This is a particular issue for organizations if the interactions of those with autism affect members of another protected group (e.g., women) adversely.

Finally, those with autism may have difficulty interpreting the same cues from members of a different group. For example, if a customer is engaging in those same facial features and body language as described for the supervisor above, then this should signal that the employee needs to provide assistance or to communicate with the customer to reduce the negative feelings. This may be difficult. In many situations, the individual with autism must use contextual cues with social cues to determine how to respond. However, they may have not yet developed the skills to perform such contextualized responses fluently.

Social-skill deficits can interfere with a working relationship with the employer. The next section looks at some of the legal decisions that have been made which impact the requirements of the employer to accommodate those with autism.

### *Legal Issues and Workplace Interactions*

Accommodations for those with mental disabilities in the workplace are a unique challenge for individuals requesting such accommodations. There are few accommodations that may be requested as a matter of law. Rather, accommodations which are reasonable must be determined on a case-by-case basis (Gutman et al., 2011). This is particularly true for accommodation requests made by those with mental disabilities in regards to the social environment of the workplace.

This means that accommodations that aid those with mental disabilities that on the surface seem reasonable (e.g., transfer away from a supervisor who shouts at workers), are not necessarily required. Being in an environment where shouting occurs does not necessarily constitute a hostile work environment. The Supreme Court has recognized that the right to work in an environment that is free from intimidation, insult, and ridicule exists based on membership within a protected class (Stefan, 2002). Stefan (2002) noted, however, that this is very different from recognizing a right to work in an environment that is free from these things as being universal. Therefore, hostility by a supervisor which is indiscriminate is not hostility based on a protected class and may be considered part of the working environment to which an employee must adapt.

Stefan (2002) summarized court decisions which were relevant to the degree in which those with autism may successfully work within an organization based on their fit with organizational and work characteristics. These rulings have been based on properly conducted job analyses which show the importance of variables related to fit as essential to job function. First, social skills may be essential to job function. These include such social skills as ability to accept and follow instructions, the ability to refrain from arguments, and insubordinate conduct with supervisors, peers, or customers. Second, attendance is an essential job function. Individuals with mental disabilities like autism are still required to fulfill all attendance policies laid down by corporate policies. This includes policies related to shiftwork and overtime. Third, the ability to handle stress may be seen as an essential job function if this is derived from a job analysis. Courts have held that all jobs and/or employment may be inherently stressful. Therefore, a supervisor shouting at all employees may be an element of the organizational context to which all employees must adapt. Fourth, the ability to get along well with others (e.g., supervisors, peers, or customers) is necessary for almost all occupations. Therefore, not getting along well with coworkers is not necessarily a reason to request accommodations by those with autism. Finally, employees may be ill-suited to some work and poor fit will create stress which the employee must accommodate. For example, downsizing in an organization may lead to a situation where the nature of all jobs must change or work shifts must change. These organizational changes, which can affect all employees, are sometimes required by business necessity and may greatly impact those with autism who may be required to adapt to them.

Gutman et al.'s (2011) analysis of court cases supported Stefan's summarization of the legal decisions vis-à-vis those with mental disabilities. Employers do not need to fundamentally alter job duties but these duties must be justified by a proper job analysis. Gutman et al. (2011) provided findings of several court cases showing this. First, requests to be able to leave a room when an employee has conflict with a supervisor have been held to be unreasonable as a matter of law. Second, a similar request to be shifted away from coworkers who caused an individual prolonged stress was also held to be unreasonable as a matter of law. Finally, requests to choose one's own supervisor have been found to place an undue administrative burden on employers.

Most people with mental disabilities seek jobs with which they have good PJ fit (Stefan, 2002). They look for jobs where they can perform the essential job functions. The nature of the essential job function, however, goes beyond task KSAs to include social interactions in the workplace. Court decisions have altered the definition of essential job functions to include the social environment of work as well as the actual knowledge, skills, and abilities (KSA) to perform the actual job (cf., Stefan, 2002; Gutman et al., 2011). This is consistent with development in selection where the old acronym, KSA, has become KSAO. The O indicates other characteristics related to the job (Levy, 2013). In essence, the other characteristics as noted above, come to be part of the essential job functions. The degree to which an employee has these other characteristics may be as relevant as the KSAs they possess for the performance of such essential job functions or duties. This means that PO fit for those with autism may lead to either positive or negative employment outcomes as it does for all employees (cf., Svyantek et al., 2015). PO fit, therefore is an important determinant of career success

for those with autism. The next section reviews some proposals for how individuals with autism may be have improved PO fit.

### Improving PO Fit in the Workplace

The social environment of work may be a problematic issue for those with autism. The social environment has been found, by courts, to be a relevant, essential component of the workplace. Several general and specific approaches are proposed for helping those with autism integrate themselves into the workplace. Two important considerations for employers are that, 1) it is always legal to exceed the requirements of the ADA and the case law decisions in making accommodations (as long as these accommodations do not discriminate against another protected class, violate a union contract, etc.) (Gutman, et al., 2011); and 2) the accommodations, particularly the general recommendations that are typically requested, are often those which make good human resource management practices for all employees in an organization.

#### *General Recommendations for Aiding Integration into the Workplace of those with Autism*

Research about PO fit and its outcomes is important for organizations hiring any individual. The practices outlined here are relevant to all employees, not just those with autism. Given the change to a KSAO model in court decisions, the social environment, the employee, and the interactions between them are particularly relevant for those with autism. Some general practices which aid the integration of those with autism into the workplace include:

**Recruitment.** As noted earlier by Stefan (2002), those with mental disabilities typically seek jobs which fit their KSAs. It is the social environment which remains unknown. Therefore, PO fit may be used to inform recruitment practices. Organizations should make sure that prospective employees have a realistic overview of the organizational values and practices so that applicants may make informed decisions on whether or not they wish to be a member of the organization. Organizations should ensure that prospective applicants from all groups have the same information and that these individuals have access to this information in some manner. This information should provide a valid description of various elements of the job such as the social environment (e.g., relationship among supervisors and subordinates, among coworkers, and among employees and customers) and the pace of the work (e.g., constant versus varied). This information may be used by all, including those with autism, to make a decision on joining an organization based on the fit with their other characteristics.

**Selection.** There are things that organizations may do in their hiring practices based on PO fit research. Organizations should take steps to ensure that all individuals assessing PO fit have a common framework and understanding of the culture and of the complex set of KSAO characteristics that make up the employees in the culture. In addition, organizations using PO fit must understand that selection based on traditional testing methods (e.g., paper and pencil instruments) is complex. PO fit requires that measures of both employee and organizational variables (e.g., personality and organizational culture) are required. It is a violation of the ADA to inquire about disabilities before an employment offer has been made (cf., Stefan, 2002; Gutman et

al., 2011). However, organizations can use personality tests which are not diagnostic of psychological or mental disabilities for pre-employment selection. Arthur et al. (2006) proposed that the use of PO fit requires local validation studies demonstrating criterion-related validity. Organizations which conduct a valid job analysis for the other characteristics needed to succeed in them, may be able to use such personality tests to assess the fit of all employees, independent of the issue of disability.

**Work Policies.** Carling (1994) proposed that many of the accommodations requested by those with mental or psychological disabilities do not impose undue hardships on the organization. In addition, he noted that the reasonable accommodations that are requested are examples of effective management and supervisory practices which have the potential to impact the overall culture of an organization positively. These general policies include a) emotional support systems; b) employee support systems for assistance with things like child care and proper procedures for dealing with grievances at work; c) flexibility in setting work hours; d) effective supervision; d) proper training; and e) mechanisms for dealing with issues between coworkers.

These policies are in place in many organizations. Employee Assistance Programs are one example of such employee support systems. Therefore, many of the accommodations requested are in place in progressive organizations. Organizations without such policies might improve both the quality of life for their employees and the organization's performance by adopting such practices.

Finally, the courts have held that social environments where behaviors that some might consider abusive (e.g., yelling supervisors) are not grounds for reasonable accommodation (e.g., such as transfer from such a supervisor to another) if all employees are treated this way. Two points must be made here. First, requested accommodation such as this are common personnel practices for other circumstances (e.g., change of supervisor for sexual harassment or part-time work for mothers) even if courts hold these as not required for mental disability (Stefan, 2002). Therefore, while not required for mental disability, such a policy would show that the organization is going beyond what is required. This is an option that every organization could take, however (Gutman et al., 2011). Second, it is believed that organizations which argue undue hardship for such transfers are not realizing the full potential of their employees. Such organizations could actually improve their organizational culture by improving the culture for all employees by eliminating such potentially abusive practices. Thorough audits of the culture of an organization, and the adherence of all individuals to the cultural values espoused, is a practice which has the potential to improve the quality of work life for all employees, not just those with autism.

**Termination.** Svyantek et al. (2015) proposed that lack of fit may be enough of an issue for an organization to decide to terminate employees because of their poor social interactions. Organizations have the right to eliminate low performers based on PO misfit. However, such decisions must be 1) based on a job analysis describing the other characteristics needed to perform the job; 2) be able to link these other characteristics to some performance criteria (e.g., disruption of group processes lead to decline in productivity); 3) these decisions should be made on an individual basis; and 4) follow the tenets of progressive discipline. Once again, this termination process described is appropriate for all employees. The primary difference for those with autism is that

the organization and the individual with autism will also follow the legal procedures described in the ADA for flexible interaction and reasonable accommodation (cf., Gutman et al., 2011) at some point in the process.

#### *Specific Recommendations for Aiding Integration into the Workplace of those with Autism*

Although individuals with autism may have an array of social skills deficits, the key is whether with reasonable accommodations these individuals can be productive members of the organization. It is important for employers to note that each person with autism is an individual and will have his or her own strengths and weaknesses, as is the case with any employee. Under the ADA, each individual with a disability must be treated on an individual basis.

There are also more specific recommendations for work policies and processes to aid the integration of those with autism into the workplace. These are more personalized accommodations for those with autism. Organizations which attempt to make such accommodations are demonstrating that the company cares about employees and, if ever sued for an ADA issue, are clearly demonstrating that they have attempted to make all reasonable accommodations for those employees with autism.

**Social Skill Issues—Recruitment and Selection.** The most common complaint employers have when hiring individuals with autism is the lack of social skills and how such deficits inhibit their hiring, promotion, or tenure in a position (Chiang et al., 2013). Therefore, employers should consider using interviews or a pre-evaluation of the social skills needed in a current position to help identify what additional support an individual may need in order to be successful. After an employment offer is extended, if an individual with autism identifies themselves as having a disability (cf., Gutman et al., 2011), a more specific discussion of the social supports needed by those with autism can occur. Employers should plan to provide instruction and feedback to help develop the social repertoires of all individual employees and be willing to develop more specific programs for those with autism. By being proactive with instruction, support, and coaching, an employer can help teach the individual with autism the necessary social skills so that he/she can perform at or above expectations in their position. In addition, proactive approaches to social skills can help prevent awkward or negative interactions with the individual with autism and others (coworkers, bosses, and customers) that could lead to termination of the employment.

**Social Skills Issues-Training.** As part of the proactive approach in addressing social-skills deficits, employers might develop a system of embedding instruction into the orientation period or training regarding the expectations in social situations and step-by-step instructions for how to handle common social situations. This kind of training has potential benefits for all employees. Similar to how individuals with autism perform better with explicit instruction on vocational tasks, explicit instruction on social skills will improve the overall professional behavior of all employees, not just those with autism. Employers should also consider developing visual aids and written instructions (task analyses) to help outline social skills that will be needed to perform regularly (Cuvo et al., 1992). These aids may include textual prompts or pictorial prompts to help support employees who have limited reading skills. For example, the employer could have written instructions next to the phone that help

guide the individual with autism through the steps of a phone conversation or how to take a message. Employers can also consider training coworkers how to provide praise for correct work-related skills, and how to provide prompts (e.g., instructions, models, and gestures) and feedback to improve performance (Likins et al., 1989).

The training area of an organization should understand that didactic instruction alone is insufficient to consistently improve social skills in those with autism. It is insufficient for individuals with autism to simply be able to label social cues or situations or be able to state how to respond in those situations; this does not consistently translate to appropriate responses when actually faced with those social situations. For example, Peters and Thompson (2015) taught children with autism to label their conversational partner as being interested or uninterested. However, this training was not sufficient enough to improve conversational exchanges. Instead, the experimenters had to explicitly teach individuals to ask a question or change the topic when the conversational partner was uninterested.

Instead of relying on instructions to promote behavioral changes, employers are encouraged to take a behavior skills training approach that involves instructions, modeling, role play, and feedback (Bates, 1980; Lerman et al., 2013; Nuernberger et al., 2013). Using this model, employers should have their employees with autism explicitly practice the skill until the individual can consistently and correctly perform the skill. Training does not need to exclusively involve direct supervisor training. Instead, employers may opt to supplement the training with video modeling. Video modeling is a procedure that involves a videotaped response that outlines the target response and can include voiceover or written instructions to help facilitate acquisition. The video model is shown to the individual before he or she is expected to engage in the relevant behavior and can help the individual learn appropriate workplace behavior, including responses in social interactions (e.g., Hitchcock, Dowrick, & Prater, 2003; LeBlanc et al., 2003) and helping to promote generalization (Jones, Lerman, & Lechago, 2014). Once again, as noted for all accommodations described, these training methods have the potential to benefit all employees.

**Social Support.** Employers should plan for some level of ongoing support, structure, and feedback for employees with autism. The frequency of coaching, supervision, and feedback will depend on the individual and the degree of social-skills deficits. With adequate training and continued support, individuals with autism can be productive and valued employees that contribute to the workplace (e.g., Burt, Fuller, & Lewis, 1991; Mawhood & Howlin, 1999). Such support can be incorporated into either training or Employee Assistance Programs at an organization.

## Conclusion

Unemployment can unfortunately be an important part of being disabled in the United States (Carling, 1994). Individuals with autism want to work and enjoy the same career paths of those without autism. The stigma against individuals with psychiatric mental disabilities, however, may be greater than the stigma associated with other more visible disabilities (Carling, 1994). Individuals with autism, in particular, face challenges in organizations because of the importance of daily social interactions

that occur in a work environment. They may need accommodations to address the correct behavioral patterns expected within the organization. As noted earlier, however, two important considerations for employers are that 1) the legality of exceeding the requirements of the ADA and the case law decisions on making accommodations; 2) making accommodations that exceed what is required by the ADA and case law provides a good defense for showing attempts at reasonable accommodation; and 3) the accommodations that are typically requested by those with mental disabilities (e.g., autism) are often those which create good human resource management practices for all employees in an organization.

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# Working Toward Neurodiversity: How Organizations and Leaders Can Accommodate for Autism Spectrum Disorder

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*In an increasingly relationship-oriented working world, social skills can be essential for job success. However, there is a growing number of working age adults who do not possess these heightened skills. Autism spectrum disorder (ASD) is characterized by specific difficulties with social interaction, and employers have legal obligations to reasonably accommodate for the particular needs associated with this disorder. To date, research has generally focused on identification, treatment, and prevention in children. Much less research has been devoted to the issues of ASD in adulthood, in particular in employment situations. An exploratory investigation was conducted to discover strategies that managers and organizations can use to accommodate for employees with ASD. From the research emerged five distinct themes: understanding, flexibility, motivation, direct communication, and ongoing support. Using this framework, several theoretical propositions are made and theoretical implications and avenues for future research are discussed.*

The working world is focused on relationships. Much research has shown that social capital and social ability are essential to career success (Ferris, Witt, & Hochwarter, 2001; Seibert, Kraimer, & Liden, 2001). However, many individuals entering the workforce do not have the benefit of heightened social ability because of distinct disorders. Individuals with ASD typically exhibit impaired comprehension of others' thoughts, intentions, and emotions as well as difficulty understanding and regulating their own (Bruggink et al., 2016; Samson, Huber, & Gross, 2012).

Lewis (2014) identified brain differences as the next frontier in organizational

diversity. More recent theoretical perspectives emphasize progressing beyond outdated medical models that conceptualize the individual with a disability as “flawed” and needing alteration or improvement to fit better within existing societal frameworks. Newer models view disability as a social construct, like gender or ethnicity; these theoretical perspectives place the onus on society to eliminate the barriers that create “ability” gaps (social model of disability), and/or conceptualize disability as a distinct cultural group (cultural model of diversity), equally worthy of representation and inclusion (Barnes & Mercer, 2001). Cultural models draw parallels with other “minority groups”, positing that individuals with disabilities face discrimination, prejudice, and segregation for involuntary membership in a socially constructed group that is viewed by the majority as having negative traits and are consequently unable to enjoy “ableist” privileges, comparable to white or male privilege (McDonald, Keys, & Balcazar, 2007).

Much of the research on ASD in the workplace focuses on helping individuals adapt to the working environment (e.g., Hendricks, 2010). This paper asserts that this is valuable for basic social interaction and task performance, but there is still a missing piece. More research is needed on how organizations and leaders may adapt to accommodate and gain competitive advantage from neurological diversity. Research on this topic is also important for organizations because there is a legal responsibility under the Americans with Disabilities Act (ADA) against discrimination on the basis of physical or mental impairment. Discrimination can come in the form of employment decisions based on the disability or a failure to provide reasonable accommodations (Americans with Disabilities Act, 1990).

## Background

ASD is a neurodevelopmental condition present from childhood that is characterized by difficulties with reciprocal social function and communication along with repetitive behaviors and restricted interests (APA, 2013). The Center for Disease Control reported that the diagnostic prevalence of ASD has increased over the past 20 years to 1 in 68 children at present (2014). Approximately 40%-60% of individuals diagnosed with ASD also exhibit cognitive impairment, separate from the impairments associated with ASD. However, roughly half do not and are of average intellectual ability (Buescher et al., 2014; Fombonne, 2003). The current study will focus on individuals with a diagnosis of ASD without intellectual disability and characteristics described will be traits associated with ASD specifically.

ASD has been associated with significant functional impairments that impact lifelong health, social, and financial outcomes for the individual, their family and society in general. For the individual, research indicates that adolescents with ASD experience lower satisfaction with overall quality of life and interpersonal relationships than neurotypical peers (Cottenceau et al., 2012) and there are higher prevalence rates for behavioral and emotional problems among adults with ASD than the general population (Gray et al., 2012). Estimates place the societal cost of supporting a single individual with ASD (without cognitive impairment) in the United States at \$1.4 million (Buescher et al., 2014). Calculated into this figure are costs specifically associated with childhood (special educational services and parental productivity loss). However, adulthood costs

are even greater, with the highest costs being residential care, supportive living, and loss of individual productivity (\$10,718 annually). Loss of parental productivity is also found to extend into adulthood (\$1,896 annually) (Buescher et al., 2014).

These direct and indirect impacts of ASD, in conjunction with an increasing number of individuals receiving the diagnosis, emphasize the urgent need for discussion regarding possible societal changes to optimize economic resources and improve long-term quality of life for individuals with ASD. Addressing workplace barriers and creating work environments accessible for adults with ASD can begin to ameliorate both individual and some parental productivity loss, as well as potentially contribute to greater satisfaction and quality of life for the individual. Postsecondary education providers have been steadily devoting more resources to programming and accessibility services that will meet the needs of the increasing population of students with ASD enrolling in higher education (Cullen, 2015). When these qualified young adults graduate, employers will have access to this labor pool, which will have protections under the ADA.

Despite the enormous societal cost due to loss of personal productivity of individuals with ASD, the legal requirements and the sizable population of children with ASD who will ultimately reach adulthood and, ideally, join the workforce, there has been relatively little research examining how employers can best meet the needs of employees with ASD and create work environments that optimize employee success. The employment prospects for individuals with ASD are quite grim. Young adults with autism are significantly less likely to secure employment than those with other kinds of disabilities (Singh, 2015). Adults with autism also experience high levels of underemployment and high rates of job switching, along with difficulty adjusting to new work environments (Hendricks, 2010).

To date, research has generally focused on training and fit with the organization and position. Hendricks (2010) published a review of research on employees with ASD and found that current studies focused on job placement, behavior of supervisors and coworkers, on-the-job training, workplace modifications, and support systems. The studies cited in the review mark the beginnings of research on ASD and employment distinctly from the perspective of developmental disorder research. Researchers have yet to utilize leadership and management research to scaffold theory on employees with ASD.

Prior to embarking on this research, individuals in the ASD community provided anecdotal support asserting that there may be best practices waiting to be identified through evidence-based research. Given what was found to be a dearth of research on this topic from an organizational science perspective, an exploratory study was designed to find how leaders, managers, and organizations can better accommodate employees with ASD and diminish workplace barriers.

## Methods

### *Research Approach*

The study was designed to explore the leader and organizational characteristics that influence levels of success or failure for employees with ASD. For the data collection, a small organization was selected that offered both in-house vocational training as

well as off-site community job placement with job coaching. The organization was unique and highly individualized in its offerings to clients, and the organizational members often worked more closely with individual clients than in comparable job placement organizations. In-depth, semi-structured interviews were conducted with five key employees in the organization who worked directly in vocational training and employment placement for clients with ASD. Each employee was asked a series of questions relating to their observations and experience working with clients with ASD. An inductive approach was chosen for exploring the research questions and drew from established methodologies and assumptions used in similar research (Bryman, Stephens, & Campo, 1996; McAlearney, 2006).

### *Sample*

In order to gather the most robust information, employees who worked directly and consistently with clients with ASD were interviewed. Each of these employees had a minimum of 1 year of experience in the organization, and had worked with a minimum of 24 clients. Employees in a range of positions were spoken with, including a program director, job coach, job developer, and in-house manager. The total number of clients that all respondents had worked with was estimated at about 650. The average organizational tenure of respondents was 3 years and 8 months. Thus, although the organization was small, each employee who participated brought a wealth of experience to the interview, and each interview was considered “information rich” (Patton, 1990). As Sandelowski (1995) noted, “experiences, not people per se, are the objects of purposeful sampling” (p. 180).

### *Semi-Structured Interview Design*

Prior to designing the study, the Director of the organization was spoken with in order to shape the open-ended questions that would be asked during the interviews. The semi-structured interview guide was designed to frame the interview while allowing for additional probing of topics that seemed of particular interest to interviewees (Miles & Huberman, 1994). The specific purpose of the interviews was to explore, in as much detail as possible, the interviewees’ experiences with leadership and management for employees with ASD. Interviews were recorded then transcribed verbatim so that software could be used to methodically analyze the raw data collected.

After gathering demographic data (organizational tenure, experience, number of clients), the interview guide was used to ask a series of questions in roughly the same order. Each general question had a series of possible follow-up questions that could be used depending on the direction the interviewee took the answer. These follow-up questions were designed to elicit richer details and/or more specific descriptions.

### *Analyses*

During data collection and analysis, the grounded theory approach developed by Glaser and Strauss (1967), which requires a constant comparison of data and theory, was followed. The contents of the interviews were also discussed as they were ongoing, to ensure responses matched the theory and evolved it to fit the data being collected. It was an iterative process that allowed for a better exploration of emerging themes in

the data. The transcripts were read closely, using an inductive approach to develop a coding schema (Miles & Huberman, 1994). The coding process involved categorizing the data based on recurring themes, which referred to the patterns observed in the transcript data. Once all the data was collected, a final list was compiled of categories and compared for agreement. These categories were used to code the data. An independent reader who was not involved in the project was chosen to read selected excerpts and identify the corresponding codes in order to test the accuracy of coding. This resulted in a 90% agreement. To confirm the findings, the qualitative analysis software ATLAS.ti (version 7.5) was used (ATLAS.ti, 2014).

### Results

Through the analysis, 5 unique themes were identified that emerged from the data regarding the leadership and organizational environment that worked best for employees with ASD. All of these themes related directly to leader or managerial characteristics and behaviors. The coding process revealed that each of these themes occurred in multiple statements, and in the majority of interviews. Only 2 of the themes were not discussed by every interviewee (these were each discussed in 4 out of 5 interviews). Tables 1 and 2 provide verbal and numerical summaries of these themes, respectively. Table 1 includes definitions and selected representative comments for each of the themes. Table 2 includes the total counts of representative comments for each of the themes across interviews. Below, each of the themes are discussed in greater detail and these themes are connected to current leadership literature. There is also a focus on the aspects of the themes that are not currently addressed with extant leadership and organizational theory. Theoretical propositions relating to each theme will be presented as well.

**Theme 1: Understanding/Education.** The most common theme that emerged across respondents was the idea that, in order for an employee with ASD to succeed in an organization, the leader or manager within that organization must have a certain degree of compassion or understanding for this specific diagnosis. Respondents all noted that the level of understanding could essentially make or break an employment situation. One respondent described it as follows:

I also think that managers and leaders should also be able to be extremely understanding. A lot of individuals with autism deal with certain things, they need routine, they need to be made aware of changes that are possibly coming up, and I think an understanding leader or supervisor that is working with them should know that and be understanding to that to make sure they are better preparing the individual.

Respondents noted that this understanding can often come from personal experience with autism. Managers who had family members or other close relationships with individuals with ASD were, according to respondents, more likely to act with understanding toward their clients. As one interviewee explained, “We have had a lot of success with [managers] that have experience or have a sibling or a relative, or whoever it may be, that they know that has autism. And they are personally invested.”

**Table 1: Definitions and Selected Representative Comments**

	Definition	Selected Comments
Theme 1	<i>Understanding/Education:</i> Managers must have compassion along with specific knowledge about the disorder or individual	"Someone who is...educated on characteristics of individuals with an ASD diagnosis."  "I also think that managers and leaders should also be able to be extremely understanding."
Theme 2	<i>Flexibility/Individualization:</i> Flexibility in rules and policies and adaptability in leadership style	"For our clients I think that the most successful ones are the managers that are able to adapt."  "I think that if every rule has to be followed exactly to a T, we're gonna have a few issues here and there."
Theme 3	<i>Willingness/Motivation:</i> Possessing the motivation to include employees with ASD in the workforce and accommodate for their needs	"If those leaders and those people in those positions are willing to work with individuals with autism, then we are set up for success."  "So, those ones that are not willing to really not work with them and give them leeway and understand that this is their disability. Those would be the harder ones."
Theme 4	<i>Direct communication/Instruction:</i> Providing direct communication, clear instruction, and limiting extraneous conversation and micromanagement	"I think being direct, in terms of, this is what needs done, we need this done at this time...I think is a good thing."  "The constant verbal instructions doesn't always work. And, but then, just standing there and watching them and not giving any direction doesn't work either."
Theme 5	<i>Ongoing support:</i> Allowing for job coaching and providing supervisor and coworker support	"That job coaching may need to be an ongoing situation for this person's entire career."  "But, I guess it's mostly I would say the fellow employees those natural supports around them that, they have more interaction with the people than the managers."

Another interviewee further rationalized why this personal experience helps managers understand their employee with ASD:

So, people that know someone, have someone in their family, maybe has a kid of their own, where they kind of understand that they are absolutely capable of work, and that they have abilities, and they have strengths. Especially like in certain fields, they may have this one very high level specialty that they're very good at, and they may struggle in some of the other basic areas.

Another common aspect of this theme was the usefulness of education intended to promote understanding. Respondents emphasized both the importance of learning about the particular employee's needs as well as learning about the condition of ASD more generally. Another respondent stressed the following regarding ASD education generally:

I think employer education is a neglected piece, and that needs to come not only from the university level on up with new managers, especially human resource or training individuals or who would be in training positions. Public policy to understand, you know, some of the differences and similarities of individuals on the autism spectrum, or any neuro-developmental disorder.

Traditional leadership research has explored aspects of this theme, such as a leader's ability to empathize with employees. Empathy is considered a critical component of emotional intelligence (Goleman, 2006; Salovey & Mayer, 1990), and is defined as a person's "ability to comprehend another's feelings and to re-experience them" for themselves (Salovey & Mayer, 1990, p. 194). Wolff, Pescosolido, and Druskat (2002) found that higher levels of empathy predicted better performance for leaders in the form of enhanced perspective taking, which, they argued, should lead to better problem solving. For those managing employees with ASD, empathy is a form of understanding that would allow them to see problems from the perspective of a person with this particular disability.

What the idea of empathy or compassion misses is the element of understanding that relates to specific knowledge or learning. The concept of understanding that emerged from the data seems to have 2 necessary prongs: empathy and knowledge. Because ASD may be foreign for many managers, empathy will only make up one piece of the understanding puzzle. In other words, empathy will not be useful unless combined with specific knowledge. This may be why so many interviewees linked the idea of understanding specifically with education or learning. As one respondent put it:

To say the truth, in our state, employment for autistic people is...kind of [a] new thing, you know. And most managers may be not really aware what people with autism can perform on the job site. And sometimes I think it takes a little time for coworkers and managers at the job site to figure out how special the person is, what to expect, and you know, how to deal with this person. So, I would say sometimes some information would be helpful for those managers because each person with autism [is] very unique. You have to know how to view them.

As such, the following propositions are offered:

*Proposition 1a: Managerial understanding includes the elements of empathy and knowledge.*

*Proposition 1b: Managerial understanding will increase success for employees with ASD.*

**Table 2: Total Counts of Representative Comments**

	R1*	R2	R3	R4	R5	TOTALS:
Understanding/Education	8	7	5	4	2	26
Flexibility/Individualization	4	2	7	2	5	20
Ongoing support	1	2	2	1	4	10
Willingness/Motivation	2	2	3	0	1	10
Direct communication/Instruction	0	2	1	1	3	7

\*R = Respondent

**Theme 2: Flexibility/Individualization.** All of the interviewees also commented on the importance of flexibility on the part of those who are managing employees with ASD. They noted that, while structure is often beneficial to employees with ASD, an adherence to strict, one-size-fits-all rules will often lead to failure in the employment environment. One individual recounted an example as follows:

I think that if every rule has to be followed exactly to a T, we're gonna have a few issues here and there. We've had a situation where the client that was hired and employed was taking a transportation company, and regardless of how many times she called to set her appointment, the transportation company messed up a few times, and so she was getting points taken off of her attendance because she was late due to her transportation. So, I think going in and kind of talking to them, most managers are willing to work with that, and say, "Ok, we understand that it's not her fault. Maybe we should do this, this, and this." I think the ones that are so rule-oriented and extremely rigid in their thinking are going to be the ones that are, like, "No, sorry, she was late, she's gone anyway."

Respondents also brought up the significance of managerial adaptability. They explained that managers who are able to adjust their leadership styles to fit the needs of the employee helped make for more successful employment situations. There is an inherent interconnectedness between understanding and flexibility, but for interviewees, these concepts were brought up with distinction. For them, understanding refers to the experience, knowledge, and learning, while flexibility is the ability to apply that understanding to a particular person with unique needs. One interviewee described ideal leaders for employees with ASD in the following way:

Leaders that are willing to direct and adjust. Because not everyone on the autism spectrum learns the same, or works the same, so you need to adjust how you're

giving instruction, you need to adjust how you're teaching. You can't just have one way of doing things and say, this is it, go to work now. You have to be willing to make changes.

The quality of flexibility that was described by the interviewees is related to what Dansereau et al. (1995) defined as Individualized Leadership. The theory promotes the idea that leaders and followers make relationships with each other independent of their relationships with others. Leaders can thus adjust based on a specific follower's characteristics or needs, rather than a relativist assessment compared to other followers (Dansereau et al., 2013). The distinction here is that Individualized Leadership (along with many contemporary leadership theories) focuses on the relationship between leader and follower, and this is what allows the leader to identify the particular needs and strengths of the follower. The flexibility described by interviewees often refers more to the individualized structure a manager can provide for an employee with ASD; it is a more direct dealing with follower needs, which does not rely on the strength of the relationship. Although these concepts may share significant overlap, it is worth distinguishing, especially in light of the theory that relationship-oriented leadership styles may not have the same effectiveness for employees with ASD as for those in a traditional workforce. Given the evidence presented above, the following propositions are offered:

*Proposition 2: Managerial flexibility will increase success for employees with ASD.*

**Theme 3: Willingness/Motivation.** Another managerial characteristic that many of the interviewees described of successful employment situations for their clients included the willingness to work with an employee with this kind of disability. The sum of the data indicates that it may not be enough for a manager to understand the particularities of ASD, but also to be motivated to include them in the workforce. When asked about managers who make for successful work situations, one interviewee said simply, "willingness to accommodate." Another interviewee stated, "If those leaders and those people in those positions are willing to work with individuals with autism, then we are set up for success." On the other hand, interviewees also described managers who may have been able to accommodate their clients, but who were just not willing to put forth any effort. These were the situations they expressed were unsuccessful. One such example is as follows:

I have a client who would have been great at the bagging. He would have loved to stand there and like organize and put different things in, and he would be great with customers. But, he hated cleaning the bathroom, so he couldn't get that job. So instead of finding maybe, you know, where he could kind of bag, and he could also maybe stock a little bit of shelves here and there on the downtime, you know, kind of carve out the job that he could do, they, you know, he wasn't able to get the position, which is unfortunate because he's able to do so many things, just not everything in that specific job. So, those ones that are not willing to really work with them and give them leeway and understand that this is their disability; those would be the harder ones.

Interviewees described managers who were unwilling to accommodate to, arguably, a baseline of accommodation required by the ADA. In situations like those, their clients were either not able to get a position or did not succeed in the position. An example of this was recounted by an interviewee:

We can go in the interview and help them in the interview process. And I've had employers tell me I can't come into the interview with them. And I'm like, well, that's illegal, but I'm not going to tell you that because we're already starting off on the wrong foot. So the ones that don't allow job coaching and try to move around that, that makes it very, very difficult for them, because they don't have the extra support that they need and are searching for.

The interplay between ability to accommodate and willingness or motivation to do so in this context may be compared to the distinction that Mintzberg (1985) drew between political skill and political will in organizations. In order to engage in political behavior, one must have sufficient willingness to expend such energy to achieve personal or organizational goals. It is both the skill and the will that make the behavior effective (Mintzberg, 1985; Treadway et al., 2005). In the case of political behavior, there may be some external reward that drives the political will. However, in the context of a willingness to accommodate for an employee with ASD, the rewards of that behavior may not be readily apparent for managers, and they may thus lack the motivation that would be essential to the success of that employee.

Motivation has been defined as “a process governing choice made by persons, among alternative forms of voluntary activity” (Vroom, 1964, p. 6). Traditional value/reward notions of organizational motivation may not apply to managers who are asked to accommodate employees with ASD because, unless organizations are specifically and explicitly aiming for higher levels of neurodiversity, there may be little benefit for the hiring manager. Most traditional theories of motivation rely on the value of an outcome, a reward, or goal achievement (Kanfer, 1990; Steers, Mowday, & Shapiro, 2004). For managers accommodating employees with ASD, these immediate drivers may not be present.

Some studies have argued that leaders can be motivated by altruism, while still maintaining some self-interest (Avolio & Locke, 2002). This argument rests on the idea that altruism may involve some immediate self-sacrifice, but it can be done with a view of the benefits to the greater good. “Taking a utilitarian viewpoint, by giving up something in the short term, a leader may be given more respect and trust from followers for their self-sacrifices. Self-sacrifice is a way of showing others the importance of what you are working towards, or your commitment to ‘the cause.’” (Avolio & Locke, 2002, p. 176). From the data and theory presented, this paper can begin to provide a picture of the kind of motivation necessary for managers to accommodate employees with ASD: altruistic motivation. Managers may need to sacrifice time and effort to accommodate for an employee with ASD, where the motivation is the greater good related to disability accommodations in the workplace, recognition of social/cultural perspectives on disability, or the specific cause of neurodiversity. Motivation that flows from egoism may also be useful in the particular scenario where a manager may be expecting a

distinct valuable outcome from the accommodation, such as personal reward from the organization for promoting diversity, or the actual knowledge that the employee in question would perform well. This is not to say that, absent an organizational reward or perception of competence, accommodations essentially serve as charity. Rather, the issue of willingness to accommodate is viewed from the perspective of the manager who may not recognize the immediate benefit of such accommodation. As one respondent noted, to some managers the benefits of accommodation are quite obvious:

[The manager] said, 'you know, we know that there's going to be bumps along the road. we know that it's going to take some adjustment some times, and we know that, you know, they need maybe a little bit of extra accommodating, but we are willing to do whatever we can for them. So, because we know that they can do the work, and when they do get a position and do get in, they love a routine. So they're going to show up on time, the same time every day. You know, they're going to do their job to the best of their ability, and they're specifically going to pay a lot of attention to detail as well.' They can become some of the best workers, and they know that.

The following proposition regarding managerial willingness to accommodate is presented:

*Proposition 3: Managerial willingness to accommodate, either in the form of altruistic motivation or egoistic motivation, will increase success for employees with ASD.*

**Theme 4: Direct communication/instruction.** One very specific behavior that interviewees identified that helps employees with ASD is direct communication. On multiple occasions, interviewees also emphasized the importance of limiting extraneous instruction or conversation. In short, they advised giving brief, direct instruction, and then letting the employee get to work. One individual put it as follows:

I think talking and over-directing is another thing that doesn't make for a great leader. Once you tell them how to do something, most of the time, if they are shown or given some simple directions, they can complete the task and learn the work duty that they need to do. If you continue to talk and talk and talk and talk about what they're doing, how they can possibly do it better, they get confused and overwhelmed with that as well.

Respondents also stressed the importance of individualized instruction. One gave the example of providing one of their on-site supported employees with step-by-step instructions for a task, where each step appeared on a new page. The employee was able to easily complete the task, and it was done well. Another offered the following advice:

I think being direct, in terms of, this is what needs done, we need this done at this time, again if our client works better with lists, taking a few extra minutes to

create that list with them, I think is a good thing. A lot of individuals like it quiet, regardless of the situation that they're in. I think a lot of additional talking and conversation that isn't related to what they're doing, even if it's not with them, can sometimes confuse and throw the employee off. So I think trying to limit excess conversation is a good thing as well.

This particular behavior style is not well-researched in the leadership literature, primarily because it is so specific to the population of employees with disabilities like ASD. It may, in some cases, be a behavioral element of managers who use goal-oriented styles of leadership such as Initiating Structure or Path-Goal Theory. Initiating Structure refers to leadership that focuses on organizing work roles, providing clear channels of communication, and goal orientation (Fleishman, 1973). One could infer from a behavioral perspective that direct communication and clear instruction may fit within this paradigm. However, the theoretical basis for this leadership style lies in the assumption that leaders lead groups (Stogdill, 1950), so the definition of initiating structure misses the individualization of the instruction concept that emerged from the data.

Path-Goal Theory was developed by House (1971) to describe leadership that motivates followers through removal of barriers and rewarding goal achievement. The idea is that leaders should simplify and clear the path toward goal completion. Direct communication and clear instruction could be examples of behaviors that accomplish the directives of path-goal theory. However, there are any number of behavioral methods that managers might use when engaging this leadership style. Thus, because it is so specific, direct communication does not hold its own space in traditional leadership literature as a distinct style. For employees with ASD, this style of managerial communication may be essential. Therefore, the following proposition is offered:

*Proposition 4: Direct communication and clear instruction from managers will increase success for employees with ASD.*

**Theme 5: Ongoing support.** The theme of ongoing support was also recurring in interviews. Respondents commented that the time frame that they were allowed to job coach under the current state standards was often insufficient. Most remarked that continuing job coaching would make employees with ASD even more successful. As one respondent explained:

Where especially some of our higher functioning individuals would be able to fit into an organization if the organization understood, you know, what some of the repetitive behaviors were or if they understood why job coaching is more than just, you know, 90 days during training. That job coaching may need to be an ongoing situation for this person's entire career.

Respondents also brought up the idea that others in the work environment can provide much needed support for employees with ASD when the job coach is not

present or when job coaching has ended for that individual. Coworkers especially can act as what respondents termed “natural supports” in the workplace. The following example was offered in an interview:

So, for example, we have a client that was hired on at a thrift store, and she took very quickly to an older lady that was doing the same thing that she was doing. So she could learn very much from this older employee that had been there for years and years. And so not only when we faded out job coaching, did she still have a natural support in place, but it made her feel more comfortable. So I think in addition to having good leaders and good managers, finding a first kind of point of contact, the natural support, whether it be a coworker, another employee that is working around them, we've seen success in that as well.

There is a great deal of research identifying social support as a resource that employees may use to cope with stress (Seers et al., 1983; Soltis et al., 2013; Terry, Nielsen, & Perchard, 1993; Viswesvaran, Sanchez, & Fisher, 1999). Social support may include both instrumental support (providing tools, information, and feedback) and emotional support (providing sympathy and encouragement). Meta-analytical results found that both types of support are related to various employee outcomes, but that the relationships with those outcomes were generally stronger when the social support came from a supervisor rather than a coworker (Ng & Sorensen, 2008). For a traditional (non-neurologically diverse) workforce, supervisor support may indeed be viewed as a greater and more prestigious resource. However, for employees with ASD, it may be equally valuable to have the support of a coworker, who likely will have more contact and may even have similar responsibilities to the employee with ASD. As one respondent observed:

But, I guess it's mostly I would say the fellow employees, those natural supports around them that, they have more interaction with the people than the managers. The managers and the leaders are doing so much that they're, you know, they're checking in, but they're not with them as much as the coworkers are.

Another respondent pointed out that often managers and coworkers are so concerned with providing instrumental support to the employee with ASD, that they neglect to provide the emotional support to go with it. The respondent said, “And you have to give praise and appreciation. We all want that, and just because they're on the autism spectrum doesn't mean they don't want to be recognized for their work.” Thus, the following propositions are offered:

*Proposition 5a: Instrumental and emotional social support from managers will increase success for employees with ASD.*

*Proposition 5b: Instrumental and emotional social support from coworkers will increase success for employees with ASD.*

## Discussion

This exploratory investigation found evidence for 5 distinct methods that leaders and managers could use to accommodate employees with ASD and minimize workplace barriers. These include being understanding of the particular characteristics of ASD, being flexible and adjusting according to the varying needs of employees with ASD, having the willingness to put forth the effort to accommodate employees with ASD, providing direct communication and clear instructions, and allowing for ongoing instrumental and emotional support in the workplace for employees with ASD. Each of these may be addressed, in part, in research on leadership and management for a traditional workforce. However, each also has some elements unique to the population of employees with ASD that are not addressed in current literature. Although this study was exploratory in nature, it does provide a number of theoretical implications and fruitful avenues for future research.

### *Theoretical Implications and Future Research Directions*

Using the grounded theory approach, this paper discussed the research process of how the presented data matched the theory. Certain questions were chosen because it was expected that those being interviewed would offer substantive answers to them. It was found that when respondents were asked about organizational policies that make for successful working situations for employees with ASD, they often had trouble coming up with clear answers. The study elected to continue asking this question because it was found to be an interesting “non-finding.” Although it was not included as a distinct theme, many respondents noted that the characteristics of the organization were largely irrelevant. A couple respondents simply responded with “I don’t know.” But one respondent explained specifically why it was a difficult question to answer:

I get asked this a lot, you know, what are your most successful businesses that, you know, are most understanding, and it has absolutely nothing to do with the business name. It has everything to do with the managers. You know, I mean, someone may get hired at [supermarket chain] in one city and they do absolutely amazing, and it's successful, and the client is doing great, everyone loves them. Someone might get hired at [supermarket chain] at another place, and it just, it doesn't work because there's just not a whole lot of, I keep saying understanding, but that's really what it is.

In continuing this stream of research, a future avenue may include exploring how the organization may formalize the managerial practices suggested by the data so that organizational policies encourage the understanding, flexibility, and motivation required to make these employment situations successful. There may indeed be organizational policies that would be effective for those employees with ASD, but which are not currently formalized because of the lack of official initiatives promoting this particular brand of diversity (neurodiversity). Organizations that do hire employees with ASD seem to do so with piecemeal approaches to the unique needs of this population.

Respondents also recounted incidents where organizations were, at best, toying the

legal line of reasonable accommodations for their clients. The ADA requires reasonable accommodations that do not impose an undue hardship to the organization (Americans with Disabilities Act, 1990). The ADA covers both mental and physical impairment, so employees with ASD may avail themselves of this protection. The small body of current research on employees with ASD may not be covering the spectrum of organizational compliance with ADA. Even those organizations with which the interviewees have experience placing clients were often not aware of their responsibilities under the law. Future research may be able to follow the growth of organizational compliance as the issues of neurodiversity generally, or employees with ASD more specifically, get disseminated more widely. Publicly and privately funded advocacy groups, such as Autism Speaks, are actively increasing visibility and representation, bringing this issue to the forefront.

Finally, this exploratory research indicates that there are limitations to the extent to which traditional leadership and organizational research may apply to special populations of employees. If neurodiversity is the new frontier in organizational research diversity, lessons can be taken from the past. More than two decades ago, the American business landscape was on the precipice of a new era of globalization with the advent of the internet. Organizational researchers began questioning the sufficiency of current research, arguing that American researchers had developed the majority of organizational research without consideration of non-US contexts, models, research, and values (Boyacigiller & Adler, 1991). In the same vein, even contemporary leadership theory often ignores non-normative contexts, such as that of neurodiversity. Future research may begin to test the validity of organizational theories on neurologically atypical populations of employees.

### *Limitations*

Although this exploratory research uncovered distinct areas relating to accommodation for employees with ASD that remain unaddressed by current organizational research, it should be viewed in light of its limitations. The study consisted of five in-depth interviews. A greater number of participants to increase internal validity would have been ideal. However, an organization was chosen based on its unique interaction with clients with ASD, and because of its niche mission, is a very small organization. Purposive selection was used to ensure the richest data possible and key members of that organization with the closest interaction with multiple clients were selected. Purposive selection refers to the idea that, in qualitative research, the unit of study is not the number of participants, but rather experience and language (Polkinghorne, 2005). Participants should be carefully selected to ensure the researcher learns as much as possible from each one.

Because the goal of qualitative research is enriching the understanding of an experience, it needs to select fertile exemplars of the experience for study. Such selections are purposeful and sought out; the selection should not be random or left to chance. The concern is not how much data were gathered or from how many sources but whether the data that were collected are sufficiently rich to bring refinement and clarity to understanding an experience (Polkinghorne, 2005, p. 140).

The participants from the small organization that was chosen for the research had in-depth experience with more than 650 clients. Thus, the data was rich with experience, in spite of the small number of interviews conducted. Future research may further validate the findings and continue to explore how to accommodate and effectively lead a neurologically diverse workforce.

## Conclusion

Increasing neurodiversity in organizations presents unique challenges for organizational accommodation and individualized leadership, much of which is not addressed by current organizational research. This exploratory study shed light on specific ways that managers and leaders can accommodate for the unique needs of employees with ASD in order to eliminate workplace barriers and help them succeed. Organizations should encourage those in hiring and leadership positions to employ these characteristics and behaviors in order to realize the benefits of neurological diversity.

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