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LIFE IN THE UNCANNY VALLEY:
WORKPLACE ISSUES FOR KNOWLEDGE WORKERS ON THE AUTISM SPECTRUM

A Dissertation

Presented to the Faculty of

Antioch University Seattle

Seattle, WA

In Partial Fulfillment

Of the Requirements of the Degree

Doctor of Psychology

By

Christina H. Rebholz

November 2012

LIFE IN THE UNCANNY VALLEY:

WORKPLACE ISSUES FOR KNOWLEDGE WORKERS ON THE AUTISM SPECTRUM

This clinical dissertation, by Christina H . Rebholz, has been approved by the committee members signed below who recommend that it be accepted by the faculty of Antioch University of Seattle, Center for Programs in Psychology, in partial fulfillment of the requirements of the degree of

DOCTOR OF PSYCHOLOGY

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Mark Russell, PhD ----- Committee Chair
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Abstract

Life In The Uncanny Valley:

Workplace Issues For Knowledge Workers On The Autism Spectrum

Christina H. Rebholz

Antioch University Seattle

Many journal articles about autism spectrum disorders have been published. The definition of “high-functioning autism” used in these papers may need to be reconsidered, as a segment of the population may be more skilled than has been historically thought. A percentage of people on the autism spectrum work in a high-paying professional capacity, in industries such as computer technology and health care. Their intellectual capacities allow them to successfully perform the portions of their jobs that require deep technical knowledge. However, they struggle with the cognitive and social issues associated with the autism spectrum, such as: concrete thinking; literal information processing; contextual misunderstanding; and social misunderstandings. This qualitative study examines the issues encountered by high-functioning people on the autism spectrum who are in the top quartile of American wage earners. It also recounts the reaction of the participants to a major employment lawsuit filed by a knowledge worker with Asperger’s. In addition, the subjects describe what they believe are the strengths that they bring to the workplace that they do not perceive in people who are not on the autism spectrum.

The electronic version of this dissertation is at OhioLink ETD Center, www.ohiolink.edu/etd.

Dedication

To the Aspies in my personal life: Marvin, Rose, Eileen;

To the Aspies who participated in this study: Adam, Bill, Charles, David, Edward, Ford, Gina,

Hank and Ian;

To the Aspies who I worked with over the years;

And to the wonderful, critical (in both senses) one that will remain nameless,

I offer my profound thanks for being my teachers.

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Purpose Of Study

This study is an exploration of issues encountered by adults with high-functioning autism (HFA) who have sufficient social skills, intellectual skills and education to be able to hold jobs as knowledge workers (“white collar professionals”), with incomes in the top quartile of US wage earners. It examines problems that they encounter in the workplace due to the differences in their social skills and sensory functioning, and their experiences around divulging or not divulging their diagnosis to their employers, as well as their reactions to a discrimination lawsuit filed by a person diagnosed with Asperger’s syndrome. The study also touches briefly on the benefits that people with Asperger’s syndrome can bring to the workplace.

Introduction

As specified by the *Diagnostic and Statistical Manual, Fourth Edition, Text Revision* (DSM-IV-TR) (American Psychiatric Association, 2000), autism and Asperger's Syndrome are closely related developmental disabilities which are both classified as "Pervasive Developmental Disabilities." Their main symptoms are difficulties in social interactions and communication, as well as repetitive, often unusual behaviors and narrow interests. According to the definition by the DSM-IV-TR, the only differentiator in diagnosis is the age at which language acquisition and social functioning begins; there is no delay in Asperger's syndrome, while there is a delay prior to age three in autism.

Prevalence of Autism Spectrum Disorders.

The perception of the disorders' epidemiology has changed drastically since the DSM-IV-TR's publication in 2000. The DSM-IV-TR estimates the prevalence of autism (not Asperger's syndrome) as 5 cases per 10,000 individuals, with a diagnostic rate of 2 to 20 per 10,000 individuals, and states that "definitive data regarding the prevalence of Asperger's Disorder are lacking." (American Psychiatric Association, 2000, p. 82). Only 10 years later, the National Institute of Mental Health (NIMH) estimated the rate to be 1 person in 110, or 0.9% of the population, based on 2006 data (National Institute of Mental Health, 2010). The NIMH rate is comparable to the rate determined in a 2011 South Korean study (Kim, Leventhal, Koh, Fombonne, Laska, & al, 2011). Sufficient data was available on approximately half of the total population of the children in a community (n=23,337) between the ages of 7 and 12; 2.64% of the total population was diagnosed on the autism spectrum (both autism and Asperger's syndrome). Of the

children in the general school population (n=23,234), 1.89% were diagnosed as being on the spectrum, and of that percentage, 12% had IQs over 120. Of the children in special education or diagnosed with disabilities who were diagnosed on the spectrum (n=103, or .4% of the total population examined), 7% also had IQs over 120.

A third major study of autistic prevalence has recently been performed in North America and published in 2012. The U.S. Government's Centers for Disease Control (CDC) released its estimates of the prevalence of autism, based on data gathered across 14 sites in the country (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2012). A total of 337,093 8-year-old children (8.4% of the total US population of 8-year-olds) were tracked using educational (school) sources, medical sources or a combination of both. Of those tracked, 3,820 children (1.13% of the population were confirmed as meeting the CDC's surveillance requirements. Geographical areas in which both medical and school surveillance was performed had a higher estimated rate than those geographical areas in which medical surveillance alone was performed. One county in Colorado with both types of surveillance showed a rate of autism spectrum disorders (ASD) that was approximately twice as high as other counties in Colorado using medical surveillance alone; the CDC considers the county with both types of surveillance to have more accurate tracking than the other counties.

When all sites were combined, the prevalence of ASD was estimated at 18.4 per 1000 males (1 in 54) and 4.0 in 1000 females (1 in 252). Variance was also shown by race; the rate in non-Hispanic white children was 12 per 1000 children; among non-Hispanic black children was 10.2 per 1000 children; and among Hispanic children, the

rate was 7.9 per 1000 children. Estimates for Asian/Pacific Islander children ranged from 2.2 to 19.0 per 1000, depending upon the geographic reporting area.

Intellectual ability rates were determined from the seven sites which tracked both medical and educational data. 38% of the children were classified as intellectually disabled (IQ < 70); 24% in the borderline range (IQ of 71 to 85) and 38% had IQ scores of 85 or greater. In all sites, females with ASD had higher rates of intellectual disabilities than males with ASD,

The distribution of the ASD population with intellectual abilities in the South Korean study (12% with IQs over 120) cannot be directly compared to the results of the U.S. study (38% with IQs over 85). However, they are consistent.

Estimate of High Functioning Autism Spectrum Population in the U.S.

As of August 2011, the United States had an estimated population of 312 million people, and the world population is approximately 6.95 billion (U.S. Census Bureau, 2011). Using (a) the U.S. statistic of 1.84% of the general population as being diagnosable, and (b) the South Korean statistic of 12% of the diagnosable population having an IQ above 120, we can estimate that the United States has approximately 690,000 people on the autism spectrum with IQs above 120. To get a feel for the magnitude of that number, it is approximately the same number of people that are employed worldwide by McDonald's and Sears combined (712,000) (Fortune magazine, 2011). The estimated worldwide population of the diagnosable population having an IQ of 120 is approximately 15.3 million, which is approximately the same as the year 2000 population of the Netherlands (Coutsoukis, 2001).

Overview of Research Available on Highly Functioning People on the Autism Spectrum

Little research has been performed to understand the intellectually capable population of people with high-functioning autism who have IQs above 100. A 2004 journal article titled “Employment and Adults with Asperger’s Syndrome” opens on page 215 with the words, “There is a great deal of information regarding children with autism spectrum disorders, but very little regarding adults, particularly those at the higher end of the spectrum. Because the group of high-functioning adults has been ignored for so long, there is little information available to parents, family members, professionals, or the individuals themselves” (Hurlbutt & Chalmers, 2004). Little has occurred to contradict this statement since it was written.

As of the time of the literature search for this study, the group of people on the autism spectrum who are highly functional – enough to have the intellectual skills as well as adequate personal skills needed to hold salaried jobs without a government-funded social support system – had not been addressed in the body of scholarly publications.

To provide perspective, a 2001 study from the UK’s National Autistic Society (Barnard, Harvey, Potter, & Prior, 2001) reported a total of 160,100 adults with Asperger’s Syndrome or High Functioning Autism in the UK; at that time, only 12% of the adults with Asperger’s syndrome worked in full-time paid employment, and 6% worked in part-time employment. The population exists; the question is why it is not employed at a greater rate.

This study attempts to provide insight into the employment issues faced by some of the highest-functioning members of this minority. Specifically, it examines the needs

of people who, by many standards, would be considered to have successful careers – full-time working professionals in the top quartile of the American wage earners – and who also have Asperger’s syndrome or high-functioning autism. It provides limited insight into areas such as their skills, their own insights into their jobs, and how being on the autism spectrum affects their work lives.

Literature Review

Much is known about children on the autism spectrum; little is known about adults, especially those considered “high functioning.” The DMS-IV-TR diagnostic criteria for autism and Asperger’s Disorder, unlike those for personality disorders, are independent of age (American Psychiatric Association, 2000).

The primary issue of this study is how long-known qualities – which in fact define the diagnostic criteria – manifest in and affect people on the spectrum who have high levels of intellectual functioning.

Diagnostic Criteria of Autistic Disorder and Asperger’s Disorder

The diagnostic criteria of Autistic Disorder and Asperger’s Disorder as listed in the DSM-IV-TR are:

- (1) Qualitative impairment in social interaction, as manifested by at least two of the following:
 - a. Marked impairment in the use of multiple non-verbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
 - b. Failure to develop peer relationships appropriate to developmental level
 - c. A lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)
 - d. Lack of social reciprocity

(2) Qualitative impairments in communication, as manifested by at least one of the following:

- a. Delay in or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
- b. In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
- c. Stereotyped and repetitive use of language or idiosyncratic language
- d. Lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3) Restricted repetitive and stereotyped patterns of behavior, interests and activities

- a. Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
- b. Apparently inflexible adherence to specific, nonfunctional routines or rituals
- c. Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
- d. Persistent preoccupation with parts of objects

The DSM-IV-TR also notes the following qualities:

- The pitch, intonation, rate, rhythm or stress may be abnormal (e.g., tone of voice may be monotonous or inappropriate to context, or may contain question-like rises at ends of statements).
- Grammatical structures are often immature and include idiosyncratic language (i.e., language that has meaning only to those familiar with the individual's communication style).
- A disturbance in the pragmatic (social use) of language is often evidenced by an inability to integrate words with gestures or understand humor or non-literal aspects of speech such as irony or implied meaning.
- A markedly restricted range of interests; people on the spectrum are often preoccupied with one narrow interest.
- There is often an interest in nonfunctional routines or rituals or an unreasonable insistence on following routines.

Characteristics of People on the Autism Spectrum Not Specified in the DSM-IV-TR

Beyond the features listed in the DSM-IV-TR, a number of other distinctive characteristics of people with Asperger's have been noted in the literature. These include: "theory of mind" and empathy issues; literal thinking and difficulty with indirect communication; sensory processing difficulties; "systemizing" and the inability to generalize; mimicry as a communication strategy; and co-morbid diagnoses of anxiety disorders, ADHD, depression and anxiety.

"Theory of Mind" and Empathy Issues. "Theory of mind" is roughly defined as the ability to infer that another person's mental and emotional states are independent of the person perceiving them. Individuals with autism have limited theory of mind (Baron-

Cohen, Leslie, & Frith, Does the autistic child have a "theory of mind"?, 1985). They can understand stories and separate individuals within a narrative, but do not recognize when a social error (faux pas) has occurred in a narrative. This is similar to the behavior of people with bilateral orbitofrontal cortex insults (Stone, Baron-Cohen, & Knight, 1998). Because they do not understand when a faux pas has occurred, they can appear to not be empathetic to others.

Some of this may be attributed to abnormalities in the mirror neuron system, located in the inferior frontal gyrus (Williams, Whiten, Suddendorf, & Perrett, 2001). When examined using functional magnetic resonance imaging (fMRI), lower activity in this region of the brain is correlated to increased difficulties in social interaction (Dapretto, Davies, Pfeifer, Scott, & al, 2006) (Dapretto, Davies, Pfeifer, Scott, & al, 2006). Figure 1 shows brain activation differences between non-autistic and autistic children during emotional experiences. The mirror neuron system is a major neurological discovery of the last 20 years (Di Pellegrino, Fadiga, Fogassi, Gallese, & Rizzolatti, 1992). It is activated as one person views another person perform an activity or experience an event. The mirror neurons then cause the activation of the viewer's brain in other areas, such as the motor cortex, causing brain activity which emulates the type of neural activation that would occur if the view himself or herself were performing the activity or experiencing the event and feeling the associated feelings. For this reason, mirror neurons are considered likely to be a major element of the neurological basis for empathy. The mirror neuron system appears to be un- or underdeveloped in people on the autism spectrum. (Ramachandran & Oberman, 2006)

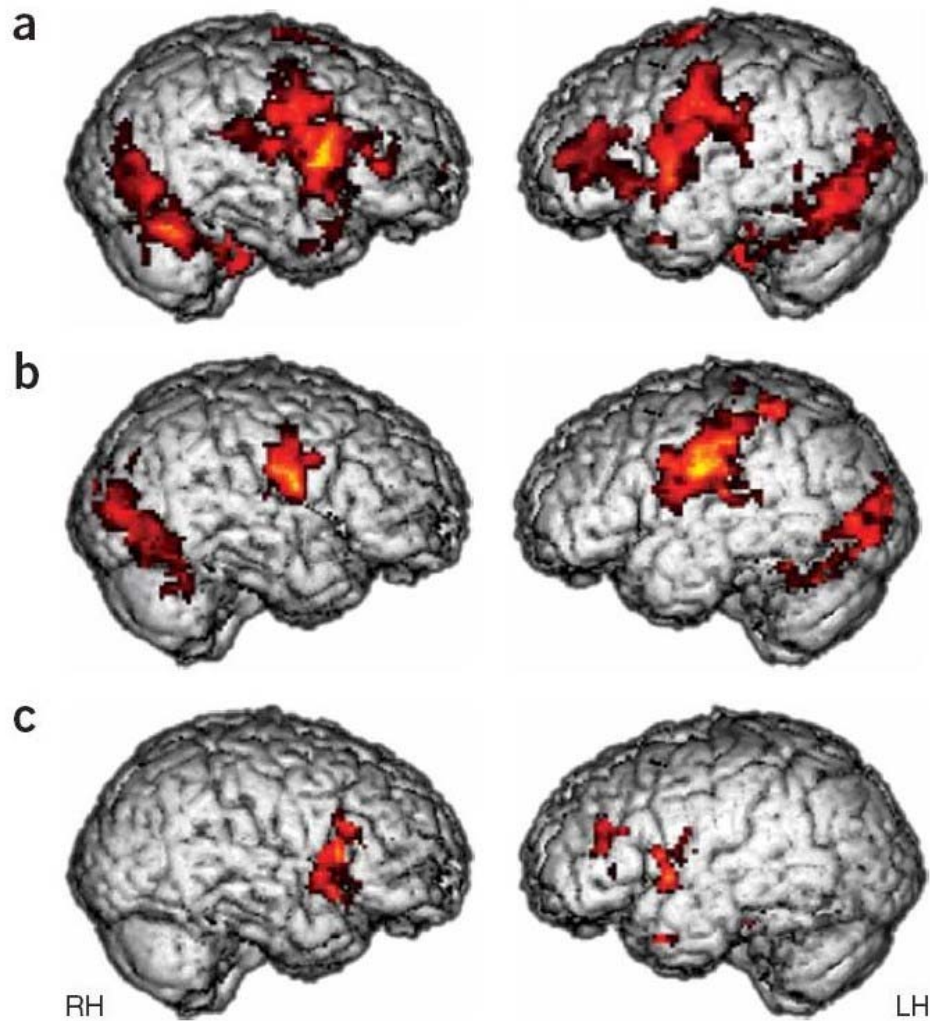


Figure 1: Reliable activity during imitation of emotional expressions. Group (a): from a group of typically developing children. Group (b): From a group of children with autistic spectrum disorders. Group (c): The differences between the two. (Dapretto, Davies, Pfeifer, Scott, & al, 2006) (Copyright permissions included in Appendix C)

Literal Thinking and Difficulty with Indirect Communication. One of the major issues in the qualitative issues of communication with high-functioning people on the spectrum is their inability properly to interpret what is said to them. They construe

verbal information literally (Rutherford, Baron-Cohen, & Wheelwright, 2002). Recent studies have shown the structure of the language tracts of the brain differ between people on the autism spectrum and those who are not.

Temple Grandin is likely the best known high-functioning American on the autism spectrum. HBO's 2010 film biography starring Claire Danes won seven of the fifteen Emmy awards for which it was nominated. Dr. Grandin is a Professor of Animal Science at Colorado State University and a life-long advocate for autism education and research. A video of a high-definition fiber tracking scan of Dr. Grandin using diffusion spectrum imaging (DSI) shows how the language tracts of Dr. Grandin's brain do not have the uniform quality of those of the non-autistic brain (CBS News, 2011). Dr. Grandin describes the differences in the following way:

“When I was two and a half years old, I had no speech. I can remember that I had problems getting my words out. There's now been some brain scan research at the University of Pittsburgh. It shows that the language output circuit is not all there. It's sort of like if you have a four lane highway normally, I've just got a one-lane highway.”

Leslie Stahl, a reporter for CBS News' "60 Minutes," describes it as, “She has one that goes normally, but the other three gnarl and break off and go off in all kinds of wrong directions.” While Dr. Grandin is one of the first people on whom this research has been performed, her results give an indication of the potential brain structural issues implicated in the linguistic difficulties of people on the autism spectrum. The complete mechanism for the literal thinking seen in people on the autism spectrum is not yet known.

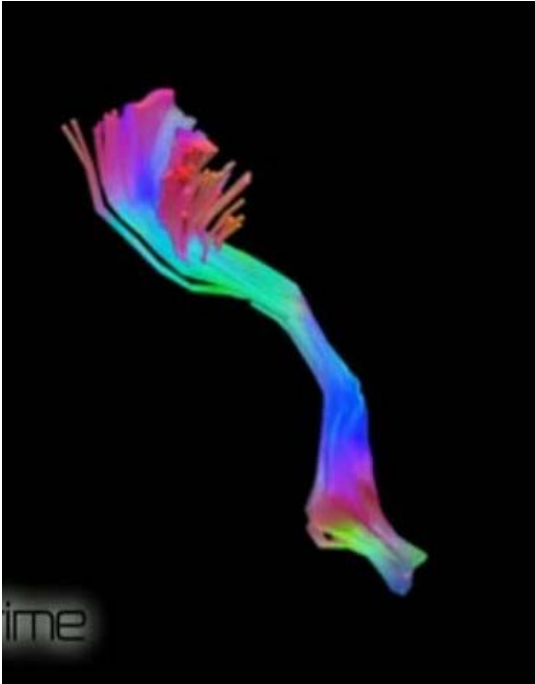


Figure 2: Normal brain language circuit.
(CBS News, 2011) (Copyright permissions included in Appendix C)

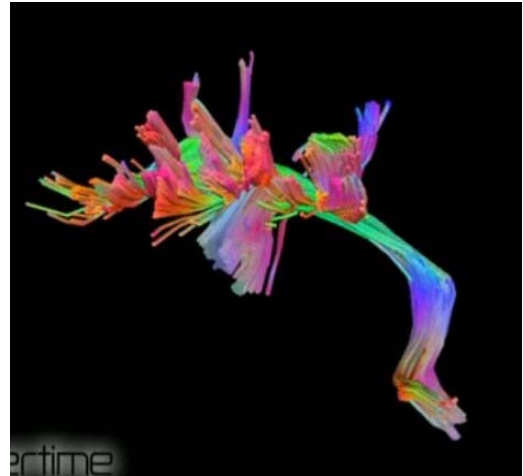


Figure 3: Temple Grandin's language circuit (CBS News, 2011) (Copyright permissions included in Appendix C)

Sensory Processing Difficulties: While the DSM-IV-TR diagnostic criteria do not include it, people with Asperger's syndrome have described feelings of sensory overload. They note physical discomfort due to stimuli such as specifically pitched sounds, fabric texture, or scent. (Attwood, 2007). Leo Kanner alluded to this issue in the original paper describing autism, writing, “

Another intrusion comes from *loud noises and moving objects*, which then causes the person on the autism spectrum to react to with horror. Tricycles, swings, elevators, vacuum cleaners, running water, gas burners, mechanical toys, egg beaters, even the wind could on occasions bring about a major panic. One of the children was even afraid to go near the closet in which the vacuum cleaner was kept.” (Kanner, 1943)

The etiology is unclear, and the type of sensory processing issues varies from person to person. There may also be a link between the autism spectrum and synesthesia, as the neural tracts of the brain for both groups differs from those of non-autistic people (Asher, Lamb, Brocklebank, Cazier, & al, 2009).

”Systemizing” and the Inability to Generalize. People with Asperger’s syndrome can have average to high IQs, as shown by the distribution of people with IQs above 100 by Kim et al (2011). However, IQs do not evaluate executive functions, which are typically performed by the frontal lobe. There is evidence for a lower level of executive functioning in people on the autism spectrum (Ozonoff, Pennington, & Rogers, 1991) (Verte, Geurts, Roeyers, Oosterlaan, & Sergeant, 2006). The inability to generalize is one of the manifestations of this population’s difficulties in executive functioning, as evidenced in by their performance in such neuropsychological assessment tools as the Wisconsin Card Sorting Test (Shu, 2001) or the Delis-Kaplan Executive Function System (Kleinhans, Akshoomoff, & Delis, 2005). *Systemizing* is described by Baron-Cohen et al as “the drive to analyze the variables in a system, to derive the underlying rules that govern the behavior of a system. Systemizing also refers to the drive to construct systems. Systemizing allows you to *predict* the behavior of a system, and control it.” (Baron-Cohen, Richler, Bisarya, Gurunathan, & Wheelwright, 2003) In people on the autism spectrum, systemizing also manifests as a need to systematically process information, possibly as a strategy to compensate for their difficulties in language processing.

Mimicry as a Communication Strategy. The “stereotyped and repetitive use of language or idiosyncratic behavior” described by the DSM-IV-TR is often seen in small

children on the spectrum as echolalia. Possibly because of their difficulties with communication, they mimic those that they see as successful communicators (Attwood, 2007).

Co-Morbid Diagnoses of Anxiety disorders, ADHD, Depression and Anxiety:

Anxiety disorders, ADHD and depression frequently accompany diagnoses of autism spectrum disorders. (Leyfer, Folstein, Bacalman, Davis, & al, 2006) Depression may be the most common co-morbid diagnosis in adolescents and adults (Ghazuiddin, Ghazuiddin, & Greden, 2002). A study of autistic children found that the higher the child's IQ, the higher the level of anxiety detected on the Child and Adolescent Symptom Inventory, an assessment tool completed by the children's parents. (Sukhodolsky, Scahill, Gadow, Arnold, Aman, & al, 2008). Another recent study found that a number of the genes implicated in ADHD are also implicated in autism (Lionel, Crosbie, Barbosa, Goodale, & al, 2011).

Differences in Adaptive Functioning versus Intellectual Functioning

According to the DSM-IV-TR,

Adaptive functioning refers to how effectively individuals cope with common life demands and how well they meet the standards of personal independence expected of someone in their particular age group, sociocultural background, and community setting. Adaptive functioning may be influenced by various factors, including education, motivation, personality characteristics, social and vocational opportunities, and the mental disorders and general medical conditions that may coexist with Mental Retardation. Problems in adaption are more likely to improve with remedial efforts than is the cognitive IQ, which tends to remain a more stable attribute." (American Psychiatric Association, 2000)p. 42

While difficulties with adaptive functioning are not explicitly stated in the DSM-IV-TR diagnostic criteria of autism spectrum disorders, they are one of the primary issues for this population. Multiple studies have examined the contrasts between intellectual and

adaptive functioning in the autistic population. A factor analysis study (Szatmari, et al., 2002) was performed with the goal of determining whether the phenotypic expression of autism was unitary or composed of different dimensions. The results of the Vineland Adaptive Behavioral Scales (Vineland) and Autism Diagnostic Interview (ADI) for 129 children diagnosed with autism were studied. Two factors were found: autistic symptoms and adaptive functioning. IQ was modestly correlated ($r = 0.49$, $p < .001$) with functioning, but not with symptoms ($r = .02$).

A 2002 study (Bolte & Poustka, 2002) assessed 67 German subjects with autism or PDD-NOS using the Vineland and the Wechsler Adult Intelligence Scales – Revised (WAIS-R). The difference in the tests' results comparing IQ with adaptive behavior in the high-functioning ($IQ \geq 70$) subjects was found to be statistically significant ($t = 9.1$, $p < .0001$); the IQ was the higher score. The difference was not significant in the subjects with mental retardation ($t = 1.2$, $p = .22$).

A 1985 study (Rumsey, Rapoport, & Sceery, 1985) examined 14 autistic individuals ranging from age 18 to 39. Nine of the individuals had both verbal and performance IQs above 80. Two had completed a year or more of junior college; four had completed regular high school; three had completed special education through high school; the remainder had attended only special education. All were assessed using the Wide Range Achievement Test (WRAT), the Wechsler Adult Intelligence Scales (WAIS), and the Vineland. On page 470, the study states, "...Social-adaptive functioning, as reflected in employment status, living arrangements, and Vineland SQs [social quotients], fell below expectation based on IQs." It also states on pages 470-471, "The Vineland SQs were generally low, relative to IQ, sometimes strikingly so. Low SQs

seen in high functioning patients primarily reflected deficits in areas of self-direction, socialization, and occupational treatments.”

In a 1989 Canadian study (Szatmari, Bartolucci, Bremner, Bond, & Rich, 1989) of 16 people who were diagnosed as being on the autism spectrum as children, six had IQ scores above 100, while one subject’s IQ was less than 70. On the Vineland, four scored more than two standard deviations below the mean (<70) on the Adaptive Behavior Composite, which is the Vineland’s equivalent to the Full Scale IQ, while six scored above the mean (>100). The area in which the group scoring above 100 performed the best was activities of daily living, where 12 of the 16 scored above the mean. However, the area in which all participants, including those with IQs over 100, scored the worst on the Vineland was socialization, where only four scored above the mean. Results are included in Table 1.

Table 1: Vineland and IQ results of the 16 subjects in the 1989 Canadian study by Szatmari et al.

Category	< 70	71-85	86-100	Greater than 100
Vineland – Communication	6	2	2	6
Vineland – Activities of Daily Living	3	0	1	12
Vineland - Socialization	4	2	6	4
Vineland - Adaptive Behavior Composite	4	1	5	6
Full Scale IQ	1	4	5	6

A 2003 Swedish study (Engstrom, Ekstrom, & Emilsson, 2003) of “high functioning adults on the autism spectrum” – a phrase which the authors recognize does

not have a generally agreed-upon definition – examined 42 individuals over the age of 18 with both autism and an IQ above 70, or with a diagnosis of Asperger’s syndrome. A subsample of 16 individuals was then examined more closely with at-home interviews; six had high-functioning autism, and ten were diagnosed with Asperger’s syndrome. None of the 16 were married or had children. Six of the 16 (four women, two men) had some form of partnership or had co-habited. Nine had their own homes, but only one lived independently of public or family support. The one individual who lived independently was also the only one of the sixteen to have a salaried job, and worked as an inspector in a factory. Three of the remaining 15 studied in-depth had “sheltered jobs;” six had no occupation; one was a student; and five went to daycare centers for personal support.

A U.S. study (Klin, Saulnier, Sparrow, Cicchetti, Volkmar, & Lord, 2007) of 187 male children in two sites (Yale University and the University of Michigan) with verbal IQs greater than 80 provided Vineland and ADOS normative data for the relatively large sample, as shown in Table 2. The table shows that the mean full-scale IQ (Yale: 99.8 ± 20.6) is over 2 standard deviations greater than the corresponding Vineland Composite Scale (Yale: 55.1 ± 10.7).

Table 2: Sample characterization of Vineland and IQ results from Klin et al. (2007).

	Mean - Yale	Mean - Michigan
Age	12.4±2.9	10.9±2.4
IQ – Full Scale IQ	99.8±20.6	99.0±17.1
IQ – Verbal IQ	104.7±21.3	101.2±18.3
IQ – Performance IQ	94.5±19.7	98.5±18.9
Vineland – Communication	72.2±17.1	83.5±20.0
Vineland – Socialization	52.0±11.5	67.0±15.4
Vineland – Daily Living	55.3±13.7	69.8±20.8
Vineland - Composite	55.1±10.7	68.2±16.8

In short, studies following people on the autism spectrum who are not intellectually disabled show that this population still encounters difficulties with social functioning and employment. While there appears to be some level of correlation between IQ and adaptive functioning, the scores are not reliably in the same standard deviation, with IQ being higher than adaptive functioning, especially in people with the IQ in the normal range.

Overview of Research Available on Highly Functioning People on the Autism Spectrum

Little research has been performed to understand the intellectually capable population of people with high-functioning autism who have IQs above 100. A 2004 journal article titled “Employment and Adults with Asperger’s Syndrome” opens with the words,

There is a great deal of information regarding children with autism spectrum disorders, but very little regarding adults, particularly those at the higher end of the spectrum. Because the group of high-functioning adults has been ignored for so long, there is little information available to parents, family members, professionals, or the individuals themselves” (Hurlbutt & Chalmers, 2004, p. 215).

Little has occurred to contradict this statement since it was written. An October 2, 2011 search of PsychInfo (American Psychological Association, 2011), using keywords *autism, autism spectrum disorders, Asperger’s Syndrome* and *autistic spectrum disorder* yielded 15,116 sources of information. When the search was limited to English language, peer-reviewed journal articles research subjects of adult age (greater than 18 years old), 2791 papers remained. When the search was further limited to research papers addressing employment issues, 25 articles remained. All of the papers assume the functionality of the people on the spectrum was low enough to place them in hourly wage earning jobs with the equivalent of a case worker providing continual support. A partial list of papers includes:

- The above-mentioned study by Hurlbutt and Chalmers, in which six Americans on the autism spectrum who held jobs were interviewed; all six had difficulty holding hourly-paid jobs (Hurlbutt & Chalmers, 2004).
- A follow-up study of 120 Swedish people diagnosed as children, which found that only four were independent when they were in the age range of 17-40 (Billstedt, Gillberg, & Gillberg, 2005).
- A study of 143 caregivers in families located in the American Midwest with an autistic adult offspring, in which caregiver responses showed that while 86% of the autistic offspring received weekly or daily care or

vocational training, only 21% earned a working wage; in addition, only 16% of the caregivers strongly disagreed with the statement, “My family member will require some assistance living out of home” (Graetz, 2006).

- A paper which discusses how social services can meet the Maslovian needs of adolescents on the autism spectrum who are transitioning to adulthood (Lawrence, Alleckson, & Bjorklund, 2010).
- A British study of the outcomes of a government-funded social support system for workers on the autism spectrum, in which government agencies found jobs for people on the spectrum and provided support for both the employer and employee. Only 8% of the jobs would be considered skilled, such as statistician, chemist, or research officer. The other jobs were unskilled, such as shelf stocking, gardening and doing data input. (Howlin, Alcock, & Burkin, 2005).
- A Japanese article which shows a correlation between the number of years of education completed people with high-functioning autism (IQ > 70; mean and range of IQ of the 22 participants was unspecified) and their ability to obtain an job (wage values were unspecified); the article did not show a correlation between their years of education and their ability to retain employment (Yokotani, 2010).
- A poster session at the 2010 conference of the National Academy of Neuropsychology which discusses how the neuropsychological evaluation

of six people on the autism spectrum was used to assist them in finding well-suited part-time work placement (Hart & Lavach, 2010).

- A study of 14 supervisors of successfully employed individuals on the autism spectrum, all of whom worked in jobs with hourly wages, which discusses how employing members of the autistic population required extra training and job adaptations on the part of their co-workers. All 14 autistic employees needed and used support services available to them for issues such as safety and social skills (Hagner & Cooney, 2005).
- A paper describing three interventions – self-monitoring of behavior, video modeling to perform repetitive skills, and individual work systems to aid in determining the definition, execution, and completion of tasks – which help people on the autism spectrum to gain independent skills. The paper describes a “best practice,” but does not include experimental data to validate the interventions’ usefulness (Hume, Loftin, & Lantz, 2009).
- A study in which two people with intellectual disabilities and one with autism were given covert audio coaching through a two-way radio system (“a bug in the ear”), which improved their work performance (Bennett, Brady, Scott, Dukes, & Frain, 2010).
- A study in which three participants on the autism spectrum (cognitive and adaptive functioning evaluations ranging from 75 to 88) were effectively taught, using videotaped modeling, to perform as professional sports mascots (Allen, Wallace, Greene, Bowen, & Burke, 2010).

In summary, research on people on the autism spectrum who are intellectually capable and have some level of adequate social skills to work in environments where their intellectual capabilities may be utilized has not been conducted.

Research Questions

One of the most important developmental achievements of adult individuals of any neurological status is the ability to be self-supporting economically. One of the most critical skills for success is employment (Goleman, 2000). The ability to work collaboratively is one of the most sought-after skills listed in job descriptions for knowledge workers. For example, an April 26, 2012 search of the jobs database Monster.com for Seattle, WA, jobs titled “software engineer” yielded a total of 425 jobs; of these 425 jobs, 104 job listings included the explicit phrase, “team player” (Monster.com, 2012)¹

People on the autism spectrum are known to have difficulties with social functioning (Rumsey et al, 1985). They are also known to have difficulties with anxiety and depression (Leyfer et al, 2006) which may cause difficulties in their abilities to cope with workplace stresses. There is also no available research on what can be done to assist this high-functioning but still disabled population for workplace success (per the literature search). These issues are the basis of the research questions of this study, which examines how individuals with the hidden handicap of autism function in a white-collar working environment which requires high levels of interaction:

- What is the importance of their job in their lives?
- What problems do they encounter in the workplace?
- What coping mechanisms do they have?

¹ Please note: searches such as “collaborate*” yielded results like “collaborative software” as well as “collaborative process, and thus were not as useful.

- What workplace accommodations do they wish would be done to assist them?
- What are their thoughts on how their disability should be viewed relative to legal case?
- What advantages do they believe they bring to the workplace?

Research Methodology

As a body of research on this population (particularly quantitative) was unavailable, and due to potential difficulties in finding research subjects, a qualitative research design was determined to be most appropriate. The study's design was approved by the Antioch University Institutional Review Board before execution began.

Solicitation of Subjects

Subjects were solicited via:

- Postings on *seattleaspergers.org/research.aspx*, an Asperger's support website specific to the Seattle metropolitan area (please note: the website has since been shut down by the moderator)
- Personal solicitations for diagnosed clients being treated by therapists known by the researcher (a convenience sample)
- An e-mail circulated to the Autism/Asperger's Research e-mail distribution list of a major technology corporation in the Pacific Northwest, U.S.A.

The solicitation wording is available in Appendix A. The volunteers were offered three choices of specific rewards: books, chocolate, or groceries.

Interview Tactics

Location. The interviews were held either: (a) face-to-face in the researcher's personal office, if the subject and researcher lived in the same metropolitan area, or (b) over Skype, without video, for the subject's comfort. Informed consent was obtained at the start of the interview. The interviews were tape recorded and transcribed. Identifying

information was removed during transcription. The subjects were aware of the tape recorder, the transcription, and the assurance of their anonymity.

Interview Strategy. A humanistic interviewing perspective was used in order to gain the participants' trust; as was verified by the interviews, people in the autism spectrum actively try to filter their responses in order to minimize social faux pas. At the beginning of the interview, each person was explicitly told that the researcher had members of her family (through marriage) that were on the autism spectrum. In addition, the subjects were informed that as a former professional in the computer science community, the researcher had also worked with numerous people on the autism spectrum. The subjects were told that due to these experiences, the researcher was used to working with people similar to them, and would appreciate hearing their honest responses to the research questions, rather than what they believed she would want to hear. Because subjects were told of the researcher's personal history, and the researcher used reflective listening, the participants exhibited a high degree of candor and several even thanked the interviewer for the experience of being heard when the interview had concluded.

Interview Questions. The participants were interviewed to obtain a brief psychosocial history (see the questionnaire in Appendix B). They were then asked the following open-ended questions:

- Tell me about what you do at your job.
 - What kind of work is it? What are your responsibilities?
 - What do you like most about your job responsibilities? What do you like least about them?

- What kinds of people do you work with? What people at work do you get along best and worst with? Why do you think that is? (These people could include your peers in your immediate work group, your supervisor(s), anyone who may report to you, and other people you interact with inside or outside your company/organization.
- Have you heard of the term “workplace politics”? What does that mean to you? What do you find hardest to deal with about workplace politics? How do you cope with it?
- What are the major workplace issues you encounter because of your Asperger’s syndrome?
- What are the top five actionable job accommodations which your employer could execute which would improve your work performance? How would each accommodation help your job performance?
- Have you divulged your Asperger’s syndrome to your employer? Why/why not?
 - If you have: what were the positive effects? What were the negative effects?
 - If you have not: what do you believe are the biggest negative outcomes that keep you from doing so? What would cause you to do so? What are the best positive outcomes you believe would occur in doing so?
 - What workplace changes would make it worthwhile to you to divulge your diagnosis?

- Suppose your employer believed that your social skills issues caused too problems with your peers and customers to keep you in your position. The employer offered another job comparable in pay scale and responsibilities which would lower the amount of contact you would have with other people, but was not in your primary field of interest. Would you take the offer? Why or why not? What if it meant the end of your employment?
- A rule of thumb in business is that the more someone earns, the less supervision they should require, regardless of whether they are a manager or an individual contributor. Unlike factory work, which tends to be repetitive, the requirements of a white-collar job frequently change due to restructuring, and employees are expected to be able to accommodate the changes with minimal explanation.
 - If your manager does not know all of the new functions and requirements of your job because of a division's restructuring or other such corporate issue, what can he or she do to help you learn to adapt?
 - Most of your co-workers are probably NTs (neurotypicals) and will thus take less time to adapt, which will require less effort on your manager's part. As someone on the spectrum, what are the characteristics that you have that a manager would want that will offset the amount of one-on-one time it takes a manager to provide you with supervision and explanation?

This list of questions may appear to be long. However, as discussed above in the “Literal Thinking and Difficulty with Indirect Communication” portion of the literature search, many people on the autism spectrum often may need explicitly phrased questions

and may become uncomfortable with questions which may have multiple interpretations due to a tendency of concrete thinking.

The interviews lasted between 1 and 2.5 hours in length. Restrictions were not placed on the subjects' time to answer the questions.

The author reviewed the interview transcripts and coded them, using techniques described by Richards (Richards, 2005), to find major themes relating to personal traits of the interviewees which affects their workplace performance, issues of the workplace, desired accommodations, and reactions to a legal case regarding a workplace issues of person with high-functioning autism. The quotes from different subjects relating to a given theme were aggregated to provide support for the theme.

Participant Demographics. Twelve people responded to the advertisements. One was eliminated due to not meeting the employment qualifications. A second did not arrive to two scheduled appointments. A third was eliminated because of the inability to maintain a line of conversation without decompensating.

Nine people were interviewed for this study. They have been given pseudonyms, which will be used throughout this study to maintain their anonymity. Their ages have been placed in brackets, also to maintain anonymity. Eight of the nine were male; one was female. The majority of the participants were in their 40s and 50s. Seven worked in computer-related jobs. Seven were raised in the US; one was raised in South America; and one was raised and currently lives in Europe. Seven are married. All seven participants who discussed their diagnosis process had been diagnosed for fewer than two years. Four were diagnosed subsequent to their sons' diagnoses. Seven divulged sensory

processing issues over the course of the interviews, even though the interview questions did not explicitly ask for this information. Six are taking psychotropic medication.

Education ranged from GEDs to doctoral degrees.

Table 3 lists the participants' basic demographics.

Table 3: Research Study Participants - Basic Statistics

Name	Meeting format	Age	Gender	Childhood spent in	Adulthood spent in	Occupation	Marital status
Adam	Face-to-face	Mid-50s	Male	US	US	Software developer	Married
Bill	Face-to-face	Early 40s	Male	US	US	Software product manager	Single
Charles	Face-to-face	Mid-50s	Male	US	US	Hospital pharmacist	Married
David	Face-to-face	Mid-50s	Male	South America	US	Software developer / tech writer	Married
Edward	Phone contact	Late 40s	Male	European Union	United Kingdom	Computer technology consultant	Married
Ford	Face-to-face	Mid-40s?	Male	US	US	Data analyst	Married
Gina	Face-to-face	Late 20s	Female	US	US	Software developer	Single
Hank	Phone contact	Mid-30s	Male	US	US	Computer technology consultant	Married
Ian	Face-to-face	Early 40s	Male	US	US	Account manager for consumer goods company	Married

Tables 4 and 5 list their psychological overview.

Table 4: Research Study Participants - Diagnostic Overview, Part I

Name	How long since diagnosis	What instigated the autism spectrum diagnosis	Co-morbid diagnoses	Treatment, if any
Adam	1 year	Job problems	Bipolar disorder	Medication; therapy
Bill	1 year	Limited effect of psychotropic medication for treating anxiety	Anxiety; sleep disturbance	Medication; therapy
Charles	6 months	No specific issue	Anxiety	Therapy
David	1 year	Decompensation at the office	Major neurological problem (affected motor skills)	None?
Edward	Withheld	Son's diagnosis	Uncertain due to hypochondria	Soft skills training at the office; nothing from health professions
Ford	Withheld	Son's diagnosis	Multiple; did not disclose	On medication; looking for therapist
Gina	1 month	Hospitalization for nervous breakdown	Anxiety; Depression Dyscalculia (abstract math is OK)	Medication; looking for therapist
Hank	6 months	Son's diagnosis	ADHD	ADHD medicated; looking for therapist
Ian	1 month	Son's diagnosis	Anxiety	Anxiolytics; psychotherapy

Table 5: Research Study Participants - Psychological Overview, Part II

Name	Children on spectrum?	Sensory processing issues?	IQ, if known
Adam	Yes	Hearing	Upper 130s
Bill	Does not have children	Hearing	
Charles	Uncertain		
David	No	<ul style="list-style-type: none"> • Hearing • Synesthesia: mixes colors and letters 	140 to 160
Edward	Yes	<ul style="list-style-type: none"> • Hearing • Smell 	
Ford	Yes	<ul style="list-style-type: none"> • Smell • Tactile issues • Taste 	152
Gina	Does not have children	Excessively heightened sense of smell	
Hank	Yes	<ul style="list-style-type: none"> • Certain pitches and noise levels are physically painful • Bright light • Tactile (sensitive to texture of clothing) • Sees the blink of fluorescent lights 	
Ian	Yes	Hearing	

Table 6 lists their educational achievement and employment statistics. The pseudonyms have not been used in Table 6, as the data may make it particularly easy to identify the participants; the data has been sorted by the duration of the marriage of the subject's parents.

Table 6: Research Study Participants - Educational Achievement And Work Stability

Note: The names of the participants have been omitted from Table 6 to help maintain the participants' anonymity. The rows have been sorted by the duration of the marriage of the subject's parents.

Childhood environment status	Highest Level of Education	Always worked in the same industry as an adult?
Ward of the state since infancy	G.E.D. plus additional college-level courses	No
Parents divorced when subject was young; remarried other people	GED and Associate's degree	No
Parents divorced at age 12	High school	No
Unstable two-parent home (substance-abusing parent)	High school	No
Parents divorced at age 12	M.B.A.	No
Stable two-parent home	Bachelor's degree + half of a master's degree	Yes
Stable two-parent home	Master's degree	Yes
Stable two-parent home	Master's degree	Yes
Stable two-parent home	Doctorate	Yes

Findings

Autism is “pervasive” by the DSM’s definition (American Psychiatric Association, 2000). It follows that its effects are evident throughout a wide set of issues in the working lives of the study’s participants.

The results will be presented in the following order:

- The importance of work in the lives of high-functioning people on the autism spectrum – which is perhaps the reason for the importance of this study
- An expansion of the primary issues which causes difficulty for people on the autism spectrum: interpersonal communication difficulties, sensory processing disorders, and executive functioning not commensurate with intellectual functioning
- The methods which people on the autism spectrum use to cope with interpersonal communication difficulties
- The issues faced in the workplace by people on the autism spectrum, including how the root causes of their difficulties affect their work lives and how their coping strategies may not be effective
- Issues regarding the subjects’ decisions on whether to divulge their diagnosis to their employers and coworkers
- The reaction of the subjects to a legal case involving disability accommodations for high-functioning people on the autism spectrum
- Personal strengths which the participants believe allows them to outperform people who are not on the spectrum in certain types of work

Many people with high-functioning autism refer to themselves as *Aspies*, which is short for “Asperger’s.” The term “Aspie” originated in the book *Pretending to be Normal*, the 1999 autobiography of Liane Holliday Willey (Willey, 1999), in which she describes the struggles she shares with her child due to their mutual diagnosis of Asperger’s syndrome. People on the spectrum refer to people who are not on the autism

spectrum as *neurotypicals*, or *NTs* for short. The terms Aspie and NT will be used primarily in the transcripts of the conversations with the study's subjects. This document interchangeably uses the terms *person with HFA* (high-functioning autism), *high-functioning person on the autism spectrum*, or *high-functioning person on the spectrum* in the text other than the quoted material.

The High Level of Importance of Work in the Lives of People with HFA

Temple Grandin, the “Patron Saint” of high-functioning people with HFA, has numerous quotes which succinctly summarize what motivates the population being studied:

- I like to figure things out and solve problems.
- I obtain great satisfaction out of using my intellect.
- If I did not have my work, I would not have any life.
- My life is basically my work. (BookRags Media Network, 2011)

The first two points in particular were echoed and expanded in the interviews of the subjects.

New challenges to his or her intellect are likely make a person with HFA feel most useful, and give him or her a feeling of self-worth. Adam stated:

Adam: [As far as] personal goals: I’ve actually told my boss in the past, which was probably a mistake, “I don’t need a promotion; just get me something good to do.” So (pause) ...

Researcher: So it’s the intellectual engagement that really keeps your engine going and keeps you motivated.

Adam: Absolutely. If I can be motivated, if you can pique my interest in something to be done – and by the way, I *love* to do problem solving – if it’s a problem that needs to be done, then I’ll solve that problem.

Ford had similar sentiments:

Ford: What do I really love doing? What do I really want to do? I now know what I really love doing. I love analyzing data. I love it. It makes me just...when I just figured out that little truffle at the bottom of the tree and go here’s your truffle. Oh...brrr....it just makes me....ecstatically, ridiculously, stupidly pleased with myself. And I’m enough of a child to

go I don't give a shit if that's childish. I, that's, everybody should feel that way all day long. If you can't, I'm sorry. But, I can and I want to be in a position where I do. I don't need to be a stripper and, you know, like have people giving me adulation as an emotional ATM.

Charles expressed how intellectual challenge elevates his personal status:

Charles: I do like the intellectual part of it. The learning part of it, and the variety that you get in a hospital setting, and within pharmacy circles and academic circles, drugstore people are looked down upon.

Ian concurred:

Ian: The ... thing [that I love in my job] is that if there's a challenge, I love taking on challenges. And throughout my career, I've created a couple of new business models for [the consumer product company he works for]. So I feel like I have a real good background and a good resume; it's the social part that I'm struggling with.

People with HFA generally love a job which allows them to be creative within defined parameters which are given to them. It is important to note that people with HFA love being creative, which should not be confused with being imaginative.

“Imaginative” often implies a lack of rules. “Creative” implies that rules can exist. Ian put it succinctly:

Researcher: You've described a little bit about your job responsibilities. What do you like the most about them?

Ian: You know what? I have the chance to get creative, and it's not process driven, which I know most Aspies like. But for me, I have the ability to get creative. I'm given just data and facts and figures, and then it's my job to put all of that into a presentation to sell [to a big chain store] on the benefits of doing business with [the consumer product company he works for]. So they're going to carry [the consumer product] as an everyday item in their stores, but what I do is develop marketing programs and promotions, but again, I have the chance to work independently. I think that's why I really thrive, as well.

David describes the appeal of one of his earliest jobs:

David: [My first time having a contracting job at my current company] was fun, because you had to be the very best at what you did. Some of the work I did was fascinating. I did the first on-disk help documentation. That had never been done. I did the first CD-ROM product; that had never been done before. About 5000 machines in the whole world got it. I've been fired three times from here. At first, it was real fun, because you had to be the best at what you did. We were having water balloon fights in the hallways. You know? It was a hoot. But then it got more and more about the money. People [today don't] have to be the best; you just [have] to *look* like the best.

Being told that a cognitive task is difficult or can't be done often motivates a person with HFA to try to tackle it. Hank succinctly stated:

Hank: [When asked what he loves the most about his job as a consultant:] Solving problems. That would be best. Give me a problem that no one's been able to solve, and let me noodle on it, and I'll have a eureka moment, and I'll just shout out, "Give me a napkin," and I'll just draw a whole architecture... If I'm at one place all the time doing the same thing, I get really bored because there's no new problems. I get unfocused. There's no new challenges, and so if I go to somewhere else and it's brand new, there's a whole set of problems that I can come in with gangbusters, with, "Yes, I'm here to solve it."

The intellectual challenge of learning the body of knowledge needed to become a pharmacist was one of the primary motivators for Charles to enter his profession:

Charles: My earliest memories of my brother was that he was already in high school. He took it under his wing that I was going to amount to something and go to school. He took me to the University of Washington, and we went to the medical school, the dental school, the pharmacy school, open houses and stuff like that. I looked around and got into the pharmacy thing with the lab and they had all these pills and medications all around and all this chemistry and all this time, I was thinking, "How can anyone learn all that?" I think I decided I was going to do that to prove to myself I could do it – although I think I really wanted to be a dentist. I wanted to combine art with science.

Researcher: But the intellectual challenge is what made you...

Charles: I think it was unconscious. I was unconsciously driven to see that I could do that, now that I think about it. And I did. Then my friend says, “Well, yeah. Dental school was easier than pharmacy school.” Well, that figures. I’ve always taken the hardest route possible.

Edward summarized the issue:

Edward: Every time somebody said, “You can’t do this,” I went the opposite way, to actually give evidence that I can.

To a person with HFA, a job without intellectual challenge is career misery.

People with HFA are not driven by prestige or money or emotional “stroking”; they are driven by the opportunity to maximize the talent which they can most typically rely upon, which is their intellectual prowess. A job which does not allow them to exercise this capacity is like putting a professional athlete on the bench. As Ford stated,

Ford: There are still tons and tons and tons for me to learn and all I, and I love learning. All I want to do is learn all day every day. Any day without some learning in it is a crap day for me. Although there are days when I want/need to take a break from it, but that’s by choice. I don’t ever want to be in a place in my life where I’m not learning something, or don’t have the opportunity to learn something new every day.

Gina concurred:

Researcher: What do you like the most about your job responsibilities?

Gina: I like that it’s interesting for me. I feel like it’s challenging. I feel like days go by quickly, whereas...I’ve had crappy jobs when I was a teenager, and I remember the day would go by, and I’d always be looking at the clock.

Researcher: What kind of jobs?

Gina: Just something stupid, like being a barista or something like that. Something that didn’t engage my mind. While even if I’m not doing something that’s personally interesting, just the challenge of working out the best way to do this, and I enjoy that it’s not, it’s not...I like being there. I feel challenged. It feels rewarding.

Charles described why he turned down a higher paying branch of his profession due to lack of intellectual challenge:

Researcher: This is just something I'm asking because I'm curious. Do you think it would be easier as a drugstore cowboy?

Charles: No, because I don't think I'd like it. I tried that; I worked in a retail setting as part of some clinical training I did through school. That was more than enough, the three months of that I did. Dealing with people. People, insurance companies, and the only thing that matters to people in a drug store is how fast you can get something done. "He's a good pharmacist; he got done fast." They don't care if I even got it done right. That's what you're judged upon. Just filling prescriptions. Filling prescriptions is the least of what I do.

The Primary Issues That Cause Job Difficulties for People with HFA

This section addresses the key features of being on the autism spectrum that cause difficulties in functioning in the workplace. They are ways that the traits of being autistic manifest in people with HFA, who have high intellectual capacity but less developed emotional and sensory capacities.

People with HFA are not able to understand subtle communication and context. As evidenced by the DSM-IV-TR definition of autism spectrum disorders (American Psychiatric Association, 2000), communication is one of the core issues of people with HFA, particularly in understanding non-verbal information. They are likely to interpret information literally (particularly verbally delivered information), and often misinterpret or interject subtext. They frequently ask for direct communication, particularly in praise and criticism. This trait occurs regardless of the high level of intelligence of people with HFA. It is one of the areas that are likely to cause the most frustration for people who are not on the spectrum as they interact with people who are, because the people with HFA are unaware of the internal processing of concepts of the larger ideas being conveyed when communicating. In common language, people with HFA tend to “see the trees and not the forest.” The inability to read context and subtext frequently makes it difficult for people with HFA to understand the greater meaning implied in another person’s line of thought, which creates misunderstandings. Edward knew that he was being humorous but accurate when he related a personal story:

Researcher: [during the initial interview for demographics and personal history]
 Now I’d like to list off some specific mental health problems, and if you can let me know what if any of these you have...

Edward: Well, I’m a hypochondriac.

Researcher: OK!

Edward: I've got them all! Seriously, go on, but I'll tell you a joke. It's not a joke; it really happened. So we got compulsory army in [the country where he was raised], or at least at the time. Conscription, you call that. So I had to go in and at some point, I had to go to see a neuropsychiatrist. It was labeled on the door. I said like, "Right. Now I will finally know. Now I will know everything I wanted to know." This guy asked me some questions, and one of the questions was, "Do you regularly have headaches?" I answered, "Yes. I regularly have headaches." He was asking me these kinds of questions, I was like, I kept on saying yes, thinking I'm finally going to know what's wrong with me. I can read upside down, and he said, "That's all very interesting." He wrote it down, and he wrote down, "Hypochondriac." I was just being agreeable and trying to figure out what potentially could be wrong with me. There you are.

A communication from another person that would be interpreted as blunt to the point of rudeness to a person not on the spectrum is likely to be acceptable to a person with HFA. This can occur particularly if the communication is an explanation about handling a social situation, rather than a comment on the intellect of the person with HFA. To explain the level of directness needed, Edward gave an example, explaining how his children need that style of communication.

Edward: Sometimes clearer instructions in the workplace would help as well. My wife implements that with our kids [who are people with HFA], where they're fidgeting on the chair, that kind of stuff, and not sitting straight and that kind of stuff. My wife would say, "Put your bum on the seat." She's not going to say, "Sit nice," or "sit straight;" she's going to say, "Put your bum on the seat." Oh yeah, I can do that one. Bum on the seat. Check the box! Which worked a lot better than saying, "Stop fidgeting," or "sit straight" or that kind of stuff. So clearer instructions, in certain cases, would help quite a lot.

If a person with HFA is asked to perform a task, and the person requesting the task perceives that the person with HFA is doing the task poorly, the person with HFA

may perceive the issue as a fault of the other person's communication skills. This may occur if the person with HFA does not believe that all of the task's parameters were explicitly conveyed by the other person; the person with HFA will likely not perceive it as their fault due to their difficulties in reading subtext and context. Edward once again used an example from his personal life to explain when, how and why this occurs.

Edward: So we're continuously trying to teach my son [who has been diagnosed with Asperger's] independence and stuff like that. We'll say to him [when at the grocery store], "I need you to get some mozzarella cheese," for example. Great. He might range a bit, but he'd get on that. You know what he does? He goes to a sales assistant, and asks where's the mozzarella cheese. That's fantastic, but that's not what I actually wanted him to do! (mutual laughter) I want him to think, "Hang on, mozzarella cheese is cheese, so that would typically be in with the milk products. It's probably in with the chilled products, so therefore, I can go on my own to the chilled products, go and have a look, oh yes, there are milk...yogurt...cheese! Mozzarella...local cheese, and so on...mozzarella! Thank you very much, here it is." Which is exactly the same thing, because I failed here. I don't tell him, "I want you, *on your own*, without any human interaction, to find mozzarella cheese, please, within the hour." That would have been the right instruction.

Researcher: Right.

Edward: He should not have felt offended by it. He would have been disappointed; he couldn't have used this very easy way of doing it, but this very easy way of doing it, I find extremely embarrassing because the woman looks around and thinks, "What on earth is a 12-year-old or 10-year-old, or whatever age he was then, asking me to find mozzarella cheese? Where are his parents?" And looks around, sees the embarrassed parents, "Oh, you're the parent? Can't you find the cheese, and you're sending your son to do it?" No, that's the embarrassing way. Do it on the normal way because I'm trying to teach you to be independent. So that could be an example? I'm actually giving my son the right instruction, but it's not complete.

Researcher: Correct.

Edward: At the same time, I'm also not telling him how to do it, leaving it too much open, but if I say, "The exercise is for you to be independent, and not need another human being. Go and find the mozzarella cheese." I'm still not telling him that he needs to look through either every thingy,

every stacked product or telling him it's in the chilled products, by the way. He'd say, "Of course I know in the chilled products! It's a cheese! Cheese goes woolly."

When a person with HFA has committed a social faux pas by the standards of someone who is not on the spectrum, the person with HFA often wants an explanation of the problem in language that would likely feel blunt to someone not on the spectrum. The person with HFA is likely to have difficulty understanding why an interaction would be offensive or problematic, since he or she probably would not see the situation that way due to a lack of understanding of context. The person on the spectrum thus may need a very direct explanation of what has gone wrong in the eyes of others. Charles describes his internal view:

Charles: I think, "Why should I have to stop and think about everything I say before I say it? Why can't I just say what's on my mind?" But then I'll think back. I've said some stupid things in my lifetime. But sometimes they'll come out of my mouth and before I even realize it, but I'm better at filtering it now. I'm just being aware of it. Being aware.

While most people with HFA think concretely, some can think in metaphor – sometimes beautifully – but mostly to explain things to other people. They are likely to interpret information from other people in a concrete fashion, which makes generalization difficult. Examples are used later in this study, particularly when explaining their inner lives.

Because people with HFA often think visually and literally and have difficulty controlling verbal output due to their issues with both executive functioning and ADD, they may have difficulties explaining their (often good) ideas in words. Examples will be discussed later in the "Issues Encountered in the Workplace" section.

It is highly likely that a person with HFA has a sensory processing disorder. While the issue of sensory processing disorder is known to occur with low-functioning people on the autism spectrum, an unexpected finding is the frequency of this problem in this study's population. All but one of the study participants acknowledged having some sort of difficulty in simply getting through the day because of difficulty in filtering stimuli that would be imperceptible to a person not on the spectrum. Five of the nine participants had hearing issues; they could hear sounds that would be imperceptible to most people, or would experience certain pitches as being like "fingernails on a blackboard." One participant described being able to see the constant flicker of fluorescent lights as though it were a continual flashing of low-grade strobe lights. Perhaps the most dramatic example was given by David, who deals with synesthesia:

David: I'm trying to slowly recognize that there are some things that are different. It's been a family joke how sensitive I am to sounds. My kids used to call it "Dad's supersonic hearing."

Researcher: And now you know!

David: Yeah, and now I know why. But I'm hearing things that people, that are making me crazy.

Researcher: The hum of the lights, things like that.

David: That and the color, because I'm synesthetic.

Researcher: What does the color correlate to?

David: Sound and color go back and forth. I mean, I'm sensing...I thought everybody's like this. I'm listening to a fan two rooms over. "Did you not hear that? Tic-tic-tic-tic-..." And it's a loose thing, and then go in and say, "You *heard* that?"

Ford gave a somewhat less dramatic description of his overstimulation from smell and taste:

Ford: [When explaining why he needs a quiet place to go to:] it's not, it's the, the feel of my pants under my hands. It's the smell of whatever's in the room, if there happens to be on. Which is probably why, you know, even though it's illogical to smoke, I smoke because it cuts down on the things that I can smell and taste. It stops the super tasting from preventing me from enjoying food. It's the feel of, you know, it's the feel of my socks on the ends of my toes and whether or not the seam is cross correctly. Because if it's not, I guarantee you I will stop in a bathroom some place and fix it, because it will drive me absolutely batty. To have my clothes in disarray. I'm better at it now than I was when I was kid. You know. But, but...my socks...better be pulled up.

People with HFA tend to process information differently than people not on the spectrum, and they know it. Because of their inability to read subtext and context, people with HFA tend to think in specific details and hear information literally. It is an element of their systemizing. Ford described how he saw this trait in one of his co-workers:

Ford: [The person I got along worst with was] about ten years younger than me. He got hired straight out of college. This guy was brilliant. He's still probably one of the smartest people I'd ever met. He may also have Asperger's. But, he was not capable of mimicry. He was not capable of putting aside his arrogance, his ego, his, his...I know what I'm doing and I'm smarter than you are. He just never could grasp the fact that while he might be the smartest guy in the room 90% of the time, there was still a good 10% that he needed to shut up and listen to somebody else. And he just could...not...do it. He also suffered from the exact same thing that many Aspies hate...or many Aspies have, which is that they hate the things that they see most in others...they hate the things in themselves that they see the most in others...or, or you know what I'm trying to say.

Researcher: Mm hmm. Yeah.

Ford: He couldn't see his woods for his trees. In fact, I don't think he even understood that he was in some trees. He thought he was standing in the middle of a vast plain of things and he could see everything. He reminded me of like a prototypical surgeon. Just God-complex asshole. But, brilliant.

The systemizing may contribute to the subjects' fixations in areas of deep interest, which is included as part of the DSM-IV-TR description of traits of people on the autism

spectrum (American Psychiatric Association, 2000). The participants in this study have largely been able to turn their intellectual fixations into careers. This is particularly true of the participants who make their living working in the computer industry; many of the participants stated that they knew that they were interested in computers before entering the field. The participant who works as a pharmacist (Charles) mostly entered the field due to the overall intellectual challenge of studying pharmacy; while growing up, he did not have a general interest in pharmacy or a general interest in the helping professions or health care.

Some fixations may be due to the application of the visual processing abilities of the participants. Two of the participants directly described thinking in very visual ways, although they are different from the process of visual thinking that has been described in the writings of Temple Grandin. Edward describes his cognitive process as follows:

Edward: Whatever problem I have, I see as three-dimensional blocks. I put that in my mind, so when people say, "How come you can solve problems so quickly?," I just see them as real. I see them in front of my eyes; I need to move this block to the left and right, and this goes down – ding, ding – and that's how I do with people as well, with people forces and how they behave. Reading ["The Art of War" to understand office politics], I could then bring that forth in my eyes: oh, he's like this, and he must move down like this. That's what I brought into action.

Ford describes his visual thinking in the following way:

Ford: You know what you're gonna need in here [the researcher's office]?

Researcher: What?

Ford: A white board.

Researcher: Okay. We've got paper if you want to write all over it.

Ford: No, that's okay. It's just sometimes, uh, I don't know if it's common amongst other people who are, are, uh, high-functioning adults, but

sometimes I think better on a surface than I can...I find it easier to explain things by drawing out relational charts.

Researcher: Well, makes absolute sense. You think visually, probably.

Ford: Um, not as visually as my wife does. Or not in the same way that my wife does. And that's a frequent thing that's gonna come up. I, I'm differentiating right now heavily between she and I, trying to figure out where her, where her issues...where her issues end and my issues begin. All right. And so she's a designer and a painter and all that other stuff. And she thinks visually like that. I think visually in like three dimensional flow maps. So to me, you put the fan at the bottom of the stairs and point it up to the second floor so that it blows cold air from the bottom up the stairs and pushes the hot air out the windows. To her, you put the fan in the window and suck cold air from the outside into the upstairs, hoping that somehow that hot air's gonna get forced downstairs, when actually you're probably just forcing it into another room upstairs. I think in flow maps.

How People with HFA Cope With Emotional Stressors

In general, people with high-functioning autism have few coping mechanisms to deal with the difficulties they face in both life and in the workplace.

Key coping mechanisms of people with HFA include placing a high value on their own cognitive achievements, and using their cognitive strengths to try to compensate for weaknesses in other areas. Cognitive achievements are often the primary area of mastery and control in the life of a person with HFA. Since they have difficulty understanding other people's emotions, they also tend to have difficulty in understanding their own, as they cannot readily learn by example due to lack of a well-developed mirror neuron system.

As a coping mechanism, people with HFA often state that they are smarter than other people, a statement which has elements of both truth and a lack of self-confidence. Cognitive and intellectual abilities, rather than emotional skills, define "smart" to a person with HFA. A co-worker with lesser problem solving abilities but better interpersonal skills will not be considered "smart" by the person with HFA. Charles gave an example of how it affects his work as a pharmacist:

Charles: I should really have been the doctor writing the orders. Sometimes I am. In other jobs I've, and in this one to a certain degree, I have prescriptive authority in certain areas, and I can manage certain things better than the physician does. They know it, so they say, "You just do that."

David showed how his powerful vocabulary can cause him frustration:

David: People don't know (the) words. I knew that growing up, I would always have to dumb down my speech. I mean, that even happens here (at the workplace). You go to a meeting here. It's an extraordinarily stimulating place. These are all A students. I'm competing with people that have master's and Ph.D.'s. I've got a GED and an associate's degree. I haven't

taken my first computer science class. Yesterday we were in a meeting and I mentioned that one of the guys was discomfited, and he didn't understand a word. I'm trying to explain it to them, and finally said, "Look it up." I doubt that people take that as funny.

Charles also gave an example of how his self-perception may cause him to be perceived as arrogant:

Charles: I don't believe my IQ can be measured. I'm about 5000 miles and steps above someone else in a split second, and then I'm already bored.

The educational achievements of people with HFA can be almost directly correlated to the stability of their childhood, not necessarily to their cognitive abilities. A review of Table 6 shows that the more difficult the childhood due to family instability, the lower the educational attainment. The more stable the nuclear family, the higher the level of academic achievement. With one exception, the people who did not come from intact families only earned high school degrees; the people with intact families earned at least a bachelor's degree. The one exception came from a family whose parents divorced when he was age 12. The possibly compensating factor is that he believes he received wider exposure to a variety of social situations than is the case for many people with HFA. His mother required him to socialize on a regular basis growing up. In addition, he was raised in a culturally diverse area and was exposed to many different ways of life, which caused him to learn to be more adaptive than many of the other people interviewed for this study.

When presented with an upcoming social issue with emotional implications, a frequent strategy of people with HFA is to over-prepare intellectually. This puts their systemizing into personal use. Because people with HFA lack a theory of mind, they cannot interpret how another person will react in a given situation. Consequently, the

person with HFA will typically use their most successful coping tool: cognitively analyzing a situation based on the system they intellectually developed rather than learned socially, and determining as many possible outcomes as possible. They will then rehearse multiple potential scenarios to predict what they believe to be the correct answer. The success rate for this strategy is not clear, but it is an important tool (or even the primary tool) that people with HFA have for coping. In Charles' words:

Researcher: One of the toughest things for any Aspie in almost any profession to deal with is the unexpected. How can a boss set your expectations and what's the best way for them to interact with you when something unexpected happens, that you have to deal with?

Charles: The best way for me is to be prepared for any situation.

Researcher: Can you do that?

Charles: (pause) To a degree.

Hank gave more expanded explanations:

Hank: [when asked what kind of co-workers he gets along with best:] Dorks. I like them best, because there's something to talk about. Like, I watch football because I know, and it's not that I don't enjoy it or that I do enjoy it. It's entertaining. It's more fun if I get to bet with my wife on who I think is going to win. But I watch it more from an intellectual standpoint so I can go into the office and the people that I don't normally, that I can't talk to, say, "Hey, did you see the game?" and I've pretty much memorized all the games because I watch them all at one time on my DirectTV. I know all the plays and what happened and what the sports announcer says and all that stuff.

Hank: I've always wanted to write a journal, with facial expressions and body postures matched with what's really the hidden meaning, and it's always confused me. It's easier in the technical industry, I think, but when you start getting into sales, and I'll practice scripts in my head on the way to work and stuff. If I'm really nervous about something, I'll practice it in my head like a role play. These are the four different ways, like chess, the four different moves that can happen. It's my response here, all right, practice what's going to go on next. And when it doesn't fall in the script, I get very, very anxious and confused. Sales guys and my wife just don't fall in the pattern. It causes me anxiety.

People with HFA often feel as though they're "faking it" throughout their lives. A number of the study participants discussed how they define themselves as human beings, because they have to play by (social) rules that they don't understand. They discussed living a life of mimicry. Of the participants, Ford gave perhaps the best metaphor to explain what life is like as a person with HFA: "the uncanny valley."

Ford: [Comparing interpersonal communication of facts vs. emotional states:] The same thing with the emotional states, or lack of emotional states that you do or don't have. If you can't explain those properly, then people are only let...and again...by explanation I mean all forms of communication. I mean verbal, physical, body language, what you write, the expression on your face, the lack of an expression on your face. All of that has to...all of that has to be correct, or you fail at that political game. You know what the uncanny valley is?

Researcher: No.

Ford: You'll love this. You should look it up at Google. I'll try my best to explain it. It's a science fiction slash computer animation slash video gaming kind of concept. Right? So an animatronics robot is not weird, because you can obviously tell that it's an animatronics robot. A perfect...a robot that looks so much like a human being that it, as to be indistinguishable...and I do mean, I, again, that's an important word, it has to be indistinguishable from another...is not. But there's this place, and it's an actual scientific thing. Where...as the...as the imitation gets closer to the reality, the discomfort that someone feels when observing that imitation grows. And it is a huge dip. And it happens like that (snap). It's like okay, okay, okay...oooh, that's a little weird, oh my God, oh, gee, I'm not very comfortable with that at all. It's important for people with Asperger's to have an idea of the uncanny valley. Because...if you can't mimic it to the place where it's indistinguishable from everybody else...you may be in the uncanny valley. People are gonna be very uncomfortable with you. You be better off not trying to mimic under those circumstances. If you can't mimic it pretty damn well, don't do it at all. And explain yourself. Because the uncanny valley is what causes that political correctness thing, or political stuff to fail. You just come off weird. It's like...

Researcher: That is an amazing concept. I really like that, I'm gonna dive into that more with, when I do my homework.

Ford: Right.

Researcher: Thank you for bringing that up for me.

Ford: All the animation on my face...all of the body gestures and the movements, well, first of all, this is just to control the flapping. But, I learned all of that before I got that concept, and it's from mimicking other people. It's from, you know, my heroes are Bugs Bunny and Hawkeye Pierce. And I can probably give you three or four other things, and you would go oh...oh, man, he stole a whole lot of his personality, didn't he. Wow. Thief. (whispering)Where does...where does Ford's mimicry stop and where does Ford begin. Not even Ford can tell you anymore.

Ford is referring to Masahiro Mori's paper, "The Uncanny Valley," (Mori, 1970) which is one of the classic papers studied and used by psychologists studying human-computer interaction. The *uncanny valley* is the point at which people experience discomfort because a robot with which they are interacting is very lifelike, but has enough features that are just imperfect enough to be noticeable. Masahiro shows the relationship with Figure 4. Ford's comment is notable not just for the strength of his metaphor, but as an example of how some people with HFA can actually think in metaphor, unlike most lower-functioning people on the autism spectrum.

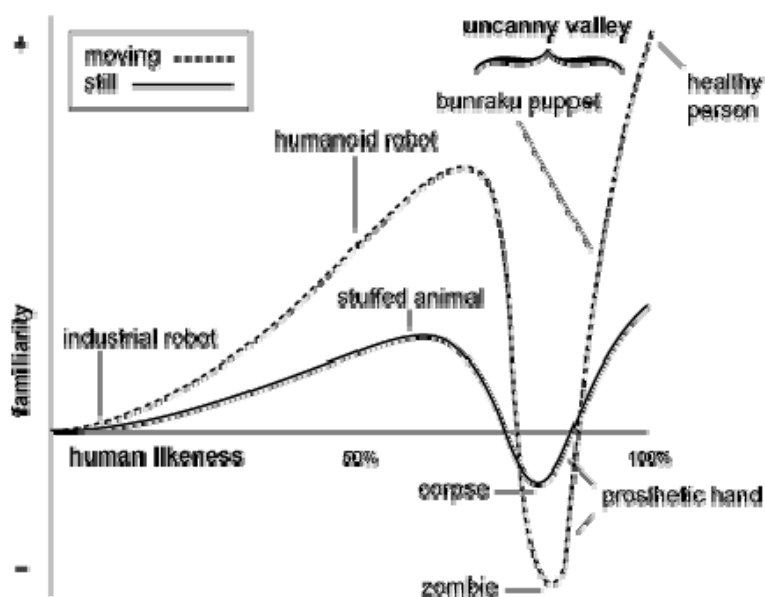


Figure 4: The Uncanny Valley (Mori, 1970) (Copyright in the public domain)

Hank provided an excellent example of how his mimicry affects his work life and his self-definition:

Hank: I'm a little bit weird when it comes to clothes. I've always been called a snob. The reason why is that the people who know me now didn't know me before my makeover. I used to look like a classic 1982 version of a Beatle. So I had the comb-over, the thick glasses, almost the pocket protector. I couldn't care what I looked like, and I thought I was dressed OK, but I didn't know better. Then I got told by my best friend, "You look like a little dork. And I love you because you're great, but you're going to need a makeover." So two friends of mine made me over, and told me where to shop and things like that. From then on, what I would do, was at first, I just wore different variations of the exact same thing, and I thought they were totally different, because they were different colors, so they were totally different. But they were still the same suit – same store, same year, same pattern. But they were different colors. I would only wear jeans from Express, because I knew that they looked good. Actually, maybe I do have a tactile issue, because I can't wear undershirts that are regular. I have to wear certain kinds of undershirts because they're softer. I *can't stand* the tag at the back of the neck. So...but then, I knew that there were certain stores that if you bought from there, it would look good. If you had fashion sense, you knew what to pick, but if you didn't have fashion sense, you could look really bad. So I would go to the nicest stores, and I would get what's on the mannequins or ask the associates, someone that I thought looked like they dressed nice, and I would ask them kind of what they thought, pretending that I knew what I was doing, and they were really pretty receptive and helpful, but that got me a reputation of being kind of a snob because I would only go to the nicer places...but for different reasons. And I didn't realize, either, because I did a lot of copying. I know what...I would look at people and walk like they walked or dressed like they dressed or talked like they talked, because I thought that I'd look at the people around them, and I'd think, "That's what I want to be." I would do a pretty good job at it. In the process, unfortunately, one of the things is that I don't know who I am. And so when I went to...I always question myself. When I went to the psychologist to get diagnosed, I had to say, "I don't know if this is really me. I'm trying to be as honest as I can, but I don't know if this is really me because of so many years of copying."

When children who are not on the spectrum are growing up, they internalize the messages of how to appear and how to behave with others, to the point where it is not differentiated from their self-definition; it is what turns into personal style. With people

with HFA, social rules are not internalized because they cannot be construed, and the opinions described above are similar to those of a young teenager who is still trying to fit into his or her peer group.

In short, people with HFA are likely to feel that they are living a false front in order to be accepted as professionals. Gina stated:

Gina: The hardest thing at my job is that I don't think anybody knows that I put on a really good act. Nobody knows that there's anything wrong, I think. Then when something goes wrong, they don't take into account that you're working 10 times harder. [I would like it if my peers could] respect that and maybe empathize a little more about how much more effort we have to put in for things that would come really, really easily to other people.

David similarly stated:

David: It turns out that a lot of us spend a lot of time and effort and energy trying to appear normal, neurotypical.

Researcher: NT. Yup.

David: A lot of us are fairly successful, at least at first. That would contribute to a misunderstanding, because these guys have got no idea what it takes to learn to say the pleasantries, smile when you're walking down a hallway, what to say in an e-mail, how to explain things to people.

Ford described his process:

Ford: [When asked how he sets priorities] That's probably part of the advantage too for me is...is um, having been a support program manager...I had to adapt, mimic. I was given the opportunity to learn to mimic...directors, from 15,000 feet. GMs [General managers], 10,000 feet. You know...what's, what's the directors, GMs...what do you, uh, uh,...program managers, shift leads, product managers, program managers. You know, 5,000 feet. IT guys, people who actually do stuff, design products, you know, they're like at 1,000 feet, people who actually deal with customers...like five feet away. Right? If you, if you've had to deal and adapt and mimic all of those things, it's not that hard to figure out what the priorities should be.

A person with HFA likely does not know who he or she is as a social being independent of the façade he or she uses as a social being to deal with people who are not on the autism spectrum. Both Ford's and Hank's quotes describe the relationship between mimicry and the inability to know who they would be without the continual pressure of having to adapt to changing social rules. They know the rules of mimicry, but not how they would act if they did not have to put on a façade for social engagement.

Emotional difficulties and dysregulation are common in people with HFA due to a lack of coping strategies. Cognitive overcompensation is not a completely effective strategy. People with HFA are often depressed and anxious, largely due to the emotional work they must perform in order to cope with their communications issues. Because they do not know the rules of social engagement, people with HFA are caught in a continual process of trial and error to determine how to interact; from the interactions, they create their own social rules to be used as a basis of internal judgment. Generalizations on social interaction which occur naturally for a person who is not on the spectrum are not internalized by people with HFA, due to the lack of a well-developed mirror neuron system. A literature search with the ISI Web of Science did not find journal articles specifically attributing a biological basis to the anxiety associated with autism spectrum disorders. One study has found a correlation among the level of anxiety in children on the autism spectrum and the total volume of the amygdala and the overall volume of the right lobe of the amygdala (Juraneck, Filipek, Berenji, Modahl, & al, 2006).

Ian described his experiences in on-the-job anxiety:

Researcher: What do you like least about your job responsibilities?

Ian: The social interaction part.

Researcher: OK.

Ian: That's what I like least, and also the – I'm trying to think of the best way to word this – the deadlines where I have a quick turnaround, and I can't control the timing on it.

Researcher: OK. Because...the reason this frustrates you so much?

Ian: I think the anxiety. I just spin and spin and spin.

Researcher: OK.

Ian: The other thing, too, is that I don't like – believe it or not – face-to-face meetings, and that's difficult for a sales person to say. But my hands sweat; I shake; I'm super-nervous when I go into a face to face meeting. But if I stay factual and I present, especially if I present over the phone or mail in a presentation, I'm really successful at it. Where I struggle is when I'm face to face with someone, and then there's a social component.

It is not unusual for professionals with HFA to have suicidal thoughts. One of the participants in the study (who preferred not to be named) had been hospitalized for a suicide attempt. A few others (who will not be named) have considered it from an intellectual perspective, but not attempted it. Edward provided insight into how he approaches emotional issues with his unique problem-solving styles of block manipulation:

Edward: There's this hidden part called despair. And that can be very dark. There have been moments I thought, "I'm just going to drive my car into this, and it's all going to be finished." If you ask, "Do you have suicidal tendencies?" No, not at all, because I actually believe it's the wrong thing to do. But there are these other– and they're probably one and the same, but they're more logical, and I find it very strange to explain, but there are these really despairing, dark periods. Nobody helps us with that, and we have to analyze ourselves out of it, or put a mental block on the analysis and just, I don't know, breathe and move on. I don't know whether that's normal or what. I don't know where to go with it. I just try to cope myself. I can imagine that, for some, if they are the same, it could be just unique for me, for some it must be horrible.

Researcher: So one of the things that I've kind of wondered is, in your case, what brings on the despair? Can you give me some examples of times...?

Edward: Oof. I try to forget these moments then as well. So that's not quite the answer to your question, but I definitely want to say that. When I'm in those moments, and I want to get through it, I almost reconstruct myself. I go back into the past, and every positive thing I've done. And luckily, I've got the capability of doing that. I bring up, and I rebuild myself. I say, "You've done this, and that was good. You've done this, and that was good." And it's almost, as I said, that three-dimensional way. It's not a couple of Lego blocks; it's a lot of Lego blocks. I build myself completely up again. So that's kind of what I do. What turns these things on, is, one example was, that engagement, where the customer decided not to extend, and this witch hunt which completely invalidated "you, and you're the cause. Something's wrong with you, and you can't do this," and that would have been taking this job away from this doctor. You would have erased him, his self. Everything he worked for. It's that thing. Going back to this lady with high-functioning autism, this Temple, sadly enough, and what we are possibly most incapable of, is [although] most strive, this recognition that we are a functioning important key part of society. Actually, we mean well. We mean well in a strange country where everybody speaks with a double tongue. Yet, when you fell, you can't even understand why you fell, and you can't even fix it, and they are using double standards themselves. How much more despair points do you need?

People with HFA very often have concurrent DSM-IV diagnoses, such as ADHD, anxiety or depression. As shown in Table 4, all of the study participants had other concurrent diagnoses. This is consistent with the findings in the literature search. It shows that their strong cognitive skills cannot fully compensate for their difficulties in interpersonal interaction.

Because of their difficulties in determining appropriate social interactions, people with HFA are likely to have developed learned helplessness. The respondents all gave evidence of having to continually adapt to changing social rules, without knowing when it was necessary to adapt or learn new rules in a novel situation. This is nearly a perfect description of the conditions of learned helplessness, which likely explains some of the anxiety and depression which typically accompanied the respondents.

Some of a person with HFA's 'quirks' are adapted expressions of well-known childhood autistic physical traits. Ford described above how his gestures are toned-down version of hand flapping. During interviews, other participants would gently rock or jiggle their limbs, which are similar expressions. "Drilling down" (asking a large number of detailed questions) in a meeting occurs in order to lower anxiety by lowering uncertainty. A lack of knowledge may cause decompensation when a person with HFA does not cognitively understand a subject enough to completely systemize.

Issues Encountered In The Workplace

Ford: You see things that I don't see. But, believe me, you have no idea what it's like to go all day, every day, with four different things in your head, and a head full of bees on top of it.

How do the personal traits of Asperger's/HFA manifest themselves as difficulties in the workplace? How does a person with HFA's need for intellectual challenge play out in an environment where the ability to work with others can determine his or her career trajectory? The following workplace issues appeared throughout the interviews.

Communications Difficulties. Because people with HFA cannot understand subtext or context, they often do not have a sense of how others view their work. They may believe their work is average, while others think it is excellent, or vice versa. Hank spoke of needing direct praise:

Hank: [when asked what he needs to be productive:] An affirmation that what I'm doing is right. I get really nervous; sometimes I get really nervous that what I'm doing is the right thing to do, and I'll say, "Hey, is this the right thing to be doing?" And there won't be a good, positive answer. And check us: "Hey, how are you doing?" That would be good. I guess there are a lot of people who wouldn't like that, but I would. Just check in on us and see how we're doing. I think that would be great.

Ford spoke of needing directness in both praise and criticism:

Ford: If I'm offending you, you tell me I'm being offensive. If I've, if I've made you happy, for God's sake, tell me I've made you happy. I, I...oh communicate. You ask me what I would want from my boss. Communicate. Number one. And do not freeze me out. I need to know what's going on. I need to know how you're feeling about me, whether or not I'm doing a good job. Yes. And I've had bosses treat me like I'm extraordinarily needy...for needing that kind of constant feedback. But, I'm sorry. I, I need that feedback. I can't get it from you any other way. I need you to say explicitly in mail or in my face you're doing a great job, or you're not doing such a good job. And I need you to tell me exactly why I'm doing a great job or exactly why I'm not doing a great job. Do not ever assume...that I know what you're talking about. Because I probably don't.

Researcher: Okay.

Ford: Especially when it comes to praise or correction. I probably don't understand what I did. It's like whacking a puppy with a rolled up newspaper. Eventually they'll learn to associate it with peeing on the[rug]. But they might also learn to associate it with the rug. So, I'm not a puppy. Whacking me with a rolled newspaper is probably not your best thing. But, explaining to me why feces on the carpet is not a good idea, that's fine. But I have no way of differentiating between the feces and the carpet, other than the fact that one came from me. I don't know which one you're mad at me about. But, you're mad at me about something.

The question of who is at fault for miscommunication in assigning a task that is not executed to the manager's standards arose in the conversations with the study participants. In some cases, it is due to the manager's not specifying all of the possible parameters to be included; in other cases, the lack of a common vocabulary that is used in different ways by different managers may be at fault. Adam gave a direct example of how this affects him at the office.

Adam: Again, I don't know whether these apply to NTs as well as Asperger's, but good, solid review, not review, but feedback. Good solid feedback at the times they happen is always very much useful. And especially if you give good feedback on what you did right, so that you can have the, so that the, several times I talked to managers, saying, "Look, I'm not wanting to not do this stuff. I want you to tell me, because I don't know exactly what you want of me." If I come into a job, and at [employer] they label things, "This is this. You need to do a unit test, you need to do these design docs, you need to do these things," each dev lead [leader of a software development team] has their different importance on these things. So you go to a new dev lead, and you try to use the old dev lead's importance, "Oh, you've got to write design docs. They've got to be really good." And then you go to the next one, "Oh, you've got to write unit tests," but they're using the same language, but the importance is completely different.

Researcher: So it's the unpredictability across the managers.

Adam: Even using the same buzzwords, it's important...they don't understand which one's which.

The desire to be notified of communications faux pas as they occur was expressed by participants in this study. Bill gives an example of how his Asperger's-related trait of

getting stuck on a discussion topic at a meeting – which is referred to as "rat holing" in the computer industry – needs to be pointed out.

Bill: I don't actually mind it when they call me on a rat hole.

Researcher: OK. Because...

Bill: That's OK. I wouldn't want to be fired over it. But I don't mind them if they're calling me out on rat holing, or anybody on rat holing, because other people rat hole more than me. So most of the time it'll be good when [they do that]...because most of the time I don't care about the rat hole. I'm like, "OK, can we move on?" So the one time they say, "Bill...Bill, well, hey, we're rat holing, can we take that up later?" there will be ten other times when somebody else gets told the same thing. So I see it as a win.

The issues with thinking visually and literally and having difficulty controlling verbal output occur at the office. Ford described it in the following way:

Ford: I hate [when people don't hear me when I'm trying to explain a valid idea], too. But, I, but I compensate for that a lot better than I used to. And the reason why is because I interrupt people all the time. They're trying to tell me their perfectly valid idea, and here I am, all Aspergery and thinking I know exactly what's going on. And I'm trying to put my wonderfully predictive brain...into gear. And so I'm predicting the end of your thought. Well, that's shitty. That's shitty to people who don't think that way. So yeah, I hate getting cut off, and I hate, what I really despise is when somebody dismisses a perfectly valid idea because I haven't explained it well...and they're not willing to sit long enough for me to re-explain it...that drives me nuts. But, I have to be careful about that, because like most people with Asperger's, I will re-explain things three times when it's not necessary...I see things completely differently than almost all of my peers. And sometimes it takes me a minute to...and by a minute, I mean like a week. Sometimes it takes me a little while to figure out how to frame it. Right? Give me a second...don't...I am trying very hard not to assume that you're going to fall into my precicta-, my patterns of prediction, that 90 to 95% of everything falls into, because I've catalogued it all. And I've seen as much of it as I'd like to see. And I'm pretty sure this is where you're going. I'm trying very hard not to impose that on you. Do me a favor. Do me a favor back. All right? Let me have my idea. Hear my idea out. Don't start editing my idea until I've had a chance to at least...get it down on a piece of paper or something. Very important.

Sensory Processing Issues in the Workplace. Sensory processing issues affected virtually all of the participants in the study. Their effects are felt in the office environment. They are hesitant to request a change to their office's physical environment, because they believe it will bring attention to their diagnosis. Gina described the problem:

Researcher: Do you have your own office or are you in a cube or...?

Gina: It's like little rooms. It's not cubes; it's like open rooms, but we have different department have their own things. And I have issues like when people bring their lunch in their sometimes and it will be really pungent. And there's one guy who doesn't have B.O., but he has aftershave, and I can smell it from halfway across the whole office. And it's terrible! And I don't know how to...you can't tell people not to do that stuff, so I don't...there's sensory things that don't really bother me, but I've always been really sensitive about smell, even like in my own house. I get really freaked out, like "Don't spray that in here, don't bring that food in here," you know? So I feel like anything to accommodate would be kind of restrictive, because you can't tell people, "You have to wear deodorant." Or "Don't bring your lunch in here" or something. I don't know how much accommodation could be made for that particular thing, because people need to be able to express themselves. And some lunches are fine; I can't say "You can't bring in certain foods..."

Researcher: Curry!

Gina: Exactly! (laughter) That's my accommodation: "No curry." That seems kind of silly.

Hank described his experiences of being in a busy office:

Hank: I don't like working with other people. I mean, it's not that I don't like working with other people, but I don't like sitting with other people all day long. Cubicles are really distracting for me, quite honestly. And the fluorescent lights. It's not that I have an issue with the fluorescent lights necessarily, I just don't like 'em. The people talking, and I just don't like it. I'd like a place where I'm able to be in either an office or into a war room, with just the people that I'm working with, or I can telecommute, or one of those things, because I can look at the wall, and I'm going to get distracted, because I get distracted pretty easily. Then I'm going to Facebook or something. Yeah. And I've never brought that up to anybody, it's just what happens. I try to make sure that I get what I need without sounding like I need it, if that makes sense.

Researcher: You mentioned fluorescent lights and the noise and so forth. Is that part of the issues you've got with the ADHD and the Asperger's, or is that just a matter of taste, like I don't like red offices personally, because blue is my favorite color; I'd rather be in a blue office, versus, I can't focus because there's these noises and I can see the blinking of the fluorescent lights.

Hank: The latter. Very, very, very much the latter. It's the blinking and the distractibility of the noise. I'll start listening to other people's conversation. They'll be like...yeah. I just can't focus. I literally can't focus.

Because of the overwhelming, continuous nature of the overstimulation, Hank explained how it can lead him to the point of potential decompensation (a "meltdown") if he is not given a way to disengage. It is a situation for which cognitive overcompensation will not work.

Hank: [when asked about what bothers him at the office:] Certain pitches and noise levels, I have a really hard time with. I don't have any hard time with tactile sensation, sometimes really bright lights – yeah, I'm really sensitive to the sun, I'm *really* sensitive to it...I would say certain pitches, even certain voices, like at a certain whiny pitch, and I know that sounds stupid, but it overwhelms me to the point of anger. And so when I'm a really decent person, I don't understand that some times, and certain times, like if it's really noisy or I'm tired and it's noisy, it really, really bothers me. So I carry earplugs around with me.

Ford described the sensory issues involved in attending meetings:

Ford: I used to rat-hole meetings all the time. I would get interested in a particular thread of the conversation and I would take it to its logical conclusion. Um...I feel really uncomfortable when the meeting exceeds the room capacity. When there's space for everybody to sit, that's fine. Even if a few people have to sit in close and tight. But, when there's everybody's lined up all around the walls and there's standing room only, it's hard for me to deal with.

Researcher: Because?

Ford: I'm not comfortable in crowds. I don't like it. It's too much. There's too much going on. There's too many things to pay attention to. And also possibly because in, you know, as a child, a crowd of people was a dangerous place for me to be.

Task prioritization difficulties. Ford summarized the issue neatly when he stated:

Ford: Having an Aspie around is like having a Golden Retriever that cannot differentiate between all the other objects in the lake. Not only will you get your duck back, you'll get several sticks, some rocks, some stones, a tennis ball, three golf balls and a possible fish if the fish doesn't swim fast enough.

People with HFA usually have difficulty prioritizing the tasks of their jobs.

Prioritization difficulties are related to multiple characteristics of people on the autism spectrum. Due to their inability to understand non-verbal behavior, people with HFA cannot pick up cues of sarcasm, anger, happiness, and so forth, they cannot determine what action(s) their boss or co-workers want them to perform. For example, they generally cannot sense urgency in someone's voice. Consequently, managers may need to micromanage people with HFA.

This issue is also related to other social communications deficits. For example, people with HFA who fails to understand office politics cannot use political considerations as an element to consider when prioritizing tasks.

Another reason that many people with HFA have difficulty with prioritization is their executive functioning disabilities. This manifests in such problems as: difficulty in choosing when "too many" options are available; feeling a need to perform large amounts of work of low-priority in order to compensate for not knowing which task to perform first; feeling that every task that is started must be completed unless explicitly stated otherwise; and that all tasks must be done equally and thoroughly, to minimize possible faux pas.

If an allusion to getting something done (e.g., “This is important”) is made by a manager, a person with HFA may not be able to interpret if the task should be done right now, if execution can be delayed, or if the manager has just given an opinion that could be ignored rather than an actionable decision. David described it:

David: But then, the Aspie thing, where I’m with him and you get this list of stuff – this, this, this, this, this, right? For most of these people, no problem. Two or three, and then I’m lost. Or there are things that aren’t clear. Or you ask questions and try to understand what they’re really saying. Well, they must think I’m a moron or something. You put me onto another manager, and bless his heart, I got my diagnosis, and we figured out, and I tried to tell him. All this guy heard was ‘problems with executive function,’ and he micromanaged.

Researcher: Oof.

David: But it’s a good heart! It’s not, you know, but he micromanaged, and that didn’t work. So I was given to another manager who was brand new.

If a person with HFA is trying to complete a task and is interrupted by a peer asking a question (such as a spontaneous request for computer support), the person with HFA may respond immediately to the peer so as not to appear rude, even if doing so means delaying a task already underway. If there are multiple interruptions from different sources, the person with HFA often does not know which requests to turn down, particularly if they are requests for help. While a distinct quote was not available for this issue, the concept ran through conversations with numerous people. It can be hard for people with HFA to know how to say “no,” because of (a) fear of the social implications of doing so (e.g., being seen as difficult or argumentative) and (b) fear that if they say “no,” they will be seen as not being smart enough to answer the question. As much of their self-worth is achieved through intellectual competence, this is a particularly uncomfortable situation for this population.

People with HFA often have difficulty asking a manager for help in prioritizing tasks, because it is something they believe may give cause for not being promoted. They believe it may cause them to be perceived as difficult or, worse yet, “stupid” – the word that is most insulting to their cognitive abilities. They believe, even if it is not so, that people who are not on the spectrum do not have to ask for help in prioritization. Bill described it as follows:

Bill: I think there's a lot more ambiguity around what one is supposed to be doing and prioritizing. And it's almost left to figure out as opposed to a very linear system. So that's difficult. Where you don't know a lot and you say guess which one is important. And if you're wrong we'll let you know at some point in time, that's not a great system for me. I like knowing what my objectives are. And what those, the priority of those objectives are. So (unintelligible) manage to throw out a bunch of different things and they'll throw something at me every other day or every day. And I don't necessarily have a way of knowing which is important and which is not. They always say it's important. Presumably there's a way that they intend to be read that they're communicating. Yes, we really mean this one's important, or I'm saying this is important. So I'm supposed to be able to get the order from, you know, reading facial expressions or something like that. But, since I have a problem doing that...it's not something I can achieve. So I'm kind of stuck, unless I explicitly ask. And that can sometimes annoy people. It certainly...some, sometimes frustrates them. There's also once case where I had a manager that I had a hard time, she was a very indirect speaker. So I had a very, very difficult time interpreting what she meant. And one time I actually mentioned this in a one on one, and she got very frustrated and angry that I was...couldn't understand what she was saying.

If people with HFA believe a task is so important that there is no question that it must be done, they may do it without notifying their manager – which sometimes causes him or her problems when it results in a disagreement with their manager over priorities.

David described the following experience:

David: [After performing a major task which he saw as critical, that was technically the responsibility of another team at the workplace] Their boss was quite cross.

Researcher: Because you'd one-upped them?

David: Oh, no-no-no-no. Because I had done it. Basically, I had done this guy's work for him. [name] was the boss. He says, "You know what you could have done is [much less work]. Now you've given them a tool; you haven't done the work for them." (smacks head) Well, of course. Of course. So that's what I did. I created the thing and I create it such that anybody can [easily perform a more complicated task than originally prescribed]. That kind of correction [from the boss], that kind of...because one of the reasons I got into a little problem with this [other] team is again because I didn't know it, but this guy was known for getting other people to do his work for him and taking credit for it.

Researcher: And this way, he couldn't.

David: Actually, he did. I did it for him. Actually, he did try to take credit for it, but I happened to be at the meeting. That was what the boss saying: "Don't do other people's work for them." That's something that I think we [people with HFA] do, because somebody asks us and we will overdo.

Researcher: And that gets confused in with the priorities.

David: Badda boom, bada bing. That's exactly right. That's exactly right. You've totally hit on it.

The rare person with HFA who has worked in a job requiring real-time task prioritization may have learned to prioritize. A person with HFA may have may be forced to learn prioritize if his or her work is truly priority interrupt-based on a minute-by-minute basis, or which of the tasks in his or her job have equal importance and can be performed over the span of hours, days, or more. Charles has had to learn prioritization, as he literally deals in real-time life-and-death issues as a hospital pharmacist. Ford is another such person. Before working in the computer industry, he worked in the restaurant business. He learned numerous skills critical for delivering food in a timely manner; his wife taught him additional skills. Ford described prioritization in the following way:

Researcher: It sounds like you weren't [able to prioritize] at one point and now you are. What happened?

Ford: I met my wife. And she's a very organized person, to the point where it's ridiculous. But...in being around somebody for whom everything has a

place, and every place has a thing...I discovered that I really didn't like being messy. And that...I liked...once I got over the idea that I was gonna have to do some work around it, bringing order out of the chaos that I had allowed my life to be up unto that point...was actually pretty frackin' sweet. And then...I realized that I could take that right into my mail. And I could organize it and catalog it, and if I just made a personal commitment to myself to read or scan every single piece of mail that came through that was of any importance...then I wouldn't have a thousand unread mails. I wouldn't be disorganized anymore. I would have the information because I stopped what I was doing every so often and went and read the last five to ten mails that came in. And I'd already sorted out all the chaff. So I was just reading the wheat. And then maybe once or twice a day I could go and do a quick scan of those things, you know, the top ten mails and all these other folders. And if there was nothing that had spawned a threat of any substance or length, then I probably could just mark the rest of it all as read and not get distracted by it. And...part of it was being on the phone. And actually part of what, part of that...was working in restaurants. Writing things down. Writing things down is crucial. I make lists. I wouldn't have tried to remember an entire room full of food orders without writing them down. Why would I, why would I want to do that anywhere else in my life? Write it down. You...you know what, you, you, you have directions, write them down. My, this drives my wife crazy, I've got an iPhone, I just (unintelligible) left [it] home today. Right. And I don't punch the grocery list into the iPhone. And I don't punch the task list. I write it down on a piece of paper. It's like why do you do that? I'm like because...because the, the act of typing it in doesn't help me remember. But the act of writing it down does. I don't know why. I don't really care. Write it down. Make yourself a list. Make a list of the things that you want to get done. And then look at them. How do you eat an elephant?

Researcher: One bite at a time.

Ford: Okay. Good. How do you decide which end to eat first?

Researcher: Whichever one gets cooked first.

Ford: Thank you. How do you decide which end to cook first?

Researcher: By the size and configuration of your oven.

Ford: Thank you. See? It's...once you think that, once you do that, it's like oh, it all falls into place...I accept and acknowledge that there must be a certain amount of planning. We have to decide that we're having elephant. We have to decide, um, we have to decide which end of the elephant that we're probably going to cook based on some, some simple parameters. But, past that point, past those like first two or three moves, I, I find it...arrogant. Arrogant. If you think that you can predict the universe well enough to predict the next ten things that are gonna happen, starting from whatever you're going to do. I'm sorry. You're either naïve or arrogant.

It's just doesn't work that way. It doesn't. And, and, and even if it did...you're not a grand master chess champion. You can't think that far ahead. You thinking ten moves ahead, me thinking ten moves ahead, assume a level of knowledge of situations or, or...I mean, it does, it doesn't just assume that the universe is a fully predictable place. But, it assumes that...that your particular set of predictions are the correct ones.

Interaction Problems With Direct Managers/Supervisors

People with HFA are often afraid to talk with their bosses. People with HFA often perceive that regardless of their knowledge and effectiveness, a single one verbal misstep may blindside them with an unforeseen reprimand or – even worse – may cause them to be fired immediately. Several study participants expressed the fear that they would be fired with little reason or understanding for saying something which would be misunderstood by others. This was true regardless of their level of seniority or degree of importance to their clientele or company.

People with HFA have a lack of role models in the workforce to teach them how to talk about sensitive issues specific to work success, like pay raises, conflicts with other employees, etc. They would probably prefer to have explicit rules about these issues as a standard portion of an employee handbook. However, because the issues are social or interpersonal in nature, they do not easily lend themselves to systemizing. In light of how often their interactions are “faked” or rehearsed, a lack of models for difficult business conversations means that people with HFA typically cannot compensate with a cognitive skill set to rely upon in business situations that are considered delicate even for people who are not on the spectrum.

Hank is one of the most knowledgeable people worldwide on the product for which he is a consultant. Yet his description of talking with his boss shows the difficulties he encounters:

Hank: Whenever I talk to my boss, I get extremely nervous, because I think if I say something wrong, I'm going to get fired. I'm just inclined to be nervous anyways, or anxious, and so I don't know how to ask for a raise. I don't know how to ask...I am a *horrible* negotiator when it comes to negotiating stuff for myself, whether it's pay, whether it's raises, whether it's accommodations, no matter what it is, I'm just horrible at it. Horrible. I can sell myself as a knowledge worker and knowing. Ask me questions about my product and I can go in there like gangbusters, and people are like, "Holy cow, he is just...wow. He's the best." But when it comes to, "Hey, I'd like a raise," or "Hey, boss, what do I have to do to get promoted," I get really, really nervous, I don't know what to say, feedback – is this too much? Is this too little? I guess...you know what I guess the biggest issue is? I've never seen someone else do it. Because I can act what people do and I guess I've never seen somebody go in and logically present the arguments and feel comfortable to do that, and so I don't have any model. Most things, I have a model... I'll dwell on something, too. I'll dwell. Say my boss calls me and says, "Hey, when you get a chance, can you ping me?" Or "We're going to have a meeting." Or whatever. I will fret about it, and think of every possible bad scenario and I will be so anxious about it, to the point that my boss now knows that when he responds back to me, he says something like, "When you get a chance, it's not a big deal; I just have to ask you a question on something." I'll still fret, but it helps me a little bit, because I know that I'm not being fired.

For people with HFA, there is a paradox between needing "explicit" communication and feeling unappreciated or even bullied because they believe they are being told how to do their jobs. The paradox of communication clarity relative to micromanagement is a central issue to the frustration that people with HFA often feel in the workplace. Bill described it in the following way:

Researcher: [when discussing the issues of how much information a manager should give] It sounds like it's more telling you what to do instead of how to do.

Bill: Yes. Please don't tell me how to do it. Actually, that's one thing. I've had man-, my manager currently tell me how to do things. And if I know how to do it, it's insulting. It's very insulting. Because like are you treating me like an idiot...that's how I feel. If you tell me what to do, that's okay. Uh, even if they're a little bit vague about it. But, if they tell me how to do something, if I know how to do it, it's insulting. Unless, now if there's a trick...if they tell me why they're telling me how to do something, like you should do it this way because we ran it, we ran this problem a month ago and this how, and we figured out it was this. So we don't think it's that this time, but please do it this way to rule it out first. Then tell, okay. Now you've told me what, how to do and why. Okay. I can deal with that. But, if you just tell me do it this way and don't tell me why you're telling me that, then I'm just gonna wonder...why you're telling me, if you're just micromanaging me. And you know, if from a technical perspective that's the one...that's my area of knowledge. That's my area or domain; that's why I'm here. And if you start telling me like here's (unintelligible) perfected that makes me think that you don't trust my technical abilities.

People with HFA often feel anxiety about asking for help, because they are afraid that they will be requesting information that would be obvious to a person not on the spectrum; paradoxically, if they are given assistance for something they already know how to do (regardless of whether the other person knows that or not), they feel that the other person is not acknowledging their intelligence and are likely to feel insulted and humiliated. Gina described the issue:

Gina: I guess the most problems I've had in the past are with people who are contradictory. And that really gets me really confused. Like where, I really don't like being told off about something if I do something wrong. Like I get really paranoid about it. I want to do it right the first time. And if I go and take initiative and fix something and somebody's like, "No, you shouldn't have done that; that wasn't in the [tech support] ticket," or whatever, I get really nervous. I don't like that feeling. Yet if I don't do it, the person comes around and says, "Why didn't you catch this?" and I was having this issue with my boss, actually, like where he was this lose-lose, either I get told off for not doing it or I get told off for doing too much without, for taking the initiative.

Adam discussed it:

Adam: Setting a task and letting me go for it, and then looking at the results rather than looking at how I got to it would be important. If when I'm done and the result that I've gotten is not acceptable, as in what you wanted done is

not what you wanted, then it's bad. If what I've done gets you to whatever you want, even if I've done it in a roundabout way, that would be useful. The fact that if you want to stand over my shoulder and say, "Well, it's got to be done this way, it's got to be done this way, it's got to be done this way," then it gets me thrown off.

Due to theory of mind issues, it can be difficult for people with HFA to understand that there are different ways to perform the same task. If a manager or co-worker desires another path to a solution, or if there is context of which the person with HFA is unaware, the person with HFA can feel like his or her intelligence is being insulted. Matters may be further complicated if the person with HFA tries to explain an issue in a way that the other person finds difficult to understand. For example, this may occur because of the tendency of people with HFA to give excessive descriptive detail. There may be common ground between the way of doing a task that the person with HFA adopts and the other person's way, but the person with HFA may not be able to understand the common ground due to difficulty in understanding context. A person who is not on the spectrum may see a general approach, while the person on the spectrum sees an approach specific to their circumstance.

People with HFA may have difficulty in explaining when they are receiving the right amount of information to feel successful and appreciated. As discussed earlier, people with HFA need to be given explicit parameters about what to do. However, they do not have the theory of mind to fully understand that their manager cannot know what they do and do not know. Adam expounds on the paradox:

Researcher: You want to be able to come to the same conclusion as somebody else can get to, but be able to allowed to determine your own path to get there.

Adam: Yes. And more important, it's important to know what you want to get to, and explain it without telling me all the steps you want to get to it. I guess one of the biggest things I've had recently at [employer] is these little

micro-milestones where you have to make exactly such-and-so to get there, and I get to that point, because micro-milestones end up with me not being able to do the way to get to it kind of a thing. And I will admit there's many times, especially when my morale is low, where I will rat hole on ways of doing things or on tasks or utilities or whatever that I really shouldn't be writing, and it's not good for how to get things done. In past times, I would be able to get away with that, because I would work 12-hour days or whatever and I'd be able to work 4 hours on my goofy things, as I call them, which the goofy things helped me tremendously further on down the road, but they don't help when I'm trying to do a micro-milestone.

Researcher: So how does a manager determine the difference between a micro-milestone and giving you a good sense of direction for what the end goal of a task is? What's the level of granularity you need?

Adam: Now *that's* a very good question. (pause)

Researcher: It's why I'm asking! (mutual laughter)

Adam: Too much detail for the result is great. Too much detail on how to get to that result is not useful.

Finding this balance is an issue which must be negotiated between the employee and his/her manager. Gina described how after this caused her significant problems at her job, she worked it out with her boss:

Gina: I've had this discussion with my boss [about the amount of direction needed], and we even talked about it. It kind of went away because he stopped [monitoring] me so closely, I think it was better when he just gave me sort of, he stopped looking at my every action and then just sort of let me do my thing, and then sort of more like my peers would say, "Hey, you missed that," instead of my boss coming down on me. That's something that helped. We even discussed it, and he said, "I know this freaks you out, so let's try to figure out this plan we have developed," and it seemed there wasn't a really good solution until he just backed off.

A person with HFA can get along reasonably well with a manager if they mutually choose to work together. Major work problems often begin for the person with HFA following a management change due to reorganization. Much of this is due to changing context of social rules. People with HFA who are fully aware that they are entering a new situation can prepare themselves to make adjustments. Consequently they

tend to do well with their hiring manager, because their expectations of how to engage in an environment are understood to be a new process. It is a straightforward process, and consequently they are likely to perform well in their annual review.

Difficulties occur if they begin to report to a new manager while remaining in their existing job function. An existing set of rules with which they are comfortable (namely, the job responsibilities that they have performed for a while) needs to be shifted with a new set of rules (the personality style of a new manager). They have difficulty determining which rules shift, and which ones stay the same. Consequently, bad reviews often occur as a result of departmental or corporate reorganization and new management. The bad reviews cannot be eliminated from their employee record which makes it difficult to change departments within the company. Consequently, it can be difficult for the person with HFA to be given the opportunity to choose his or her next manager, which he or she needs to do in order to be successful. Adam described this experience:

Adam: Almost every time I've changed jobs, I have pleased my new boss. When I get re-org'd, where I don't choose the boss, or I get people put above me who have to learn the whole business and they have their own ideas but they don't make it clear or communicate with me what they want, in a fashion other than buzzwords, where I don't do well...It's perfectly fair that a manager might not like me. The fact that some other manager reads those comments when, if I actually reported to that manager, he would not find those interesting. So I get a bad review. Most of these people don't even bother to look at the wording of what's going on in the review. They just look at the final number, "Oh, he's got a low review score. And he's been in grade for, say, 26 months, so he's therefore made my cutoff; I don't want him."

Researcher: So it's the fast, screening version as opposed to getting to know who you actually are and what you can do.

Adam: The thing that bothers me the most about my job was the occasional and sometimes chaotic reorganizations, where you have to deal with change. Now, I admit we're...I think anybody would have the problems dealing with change, but when it happens to me, it takes a long time to adjust. And

morale suffers, my work suffers, and I always gives a bad impression to your new boss because now you've got a guy who's not doing very well, why the hell is he here, that type of thing....I got into a situation when I got into my last job I was in, where [employer] has this idea that if you stay in a particular job for too long, or "grade," as they call it, for too long that you become less and less likely to be able to move to another position. Which, to me, puts a brand on you, a label on you that can't be removed. And even if there were reasons for you to not, to have gotten into that situation, you can't get out of. Now, that could be Asperger's as well as NTs, but it just, that was one of the things that was the worst for me, because I know I knew that I could do better in another position, but I couldn't get out of my current position. For other kinds of accommodations, at least for me, I'm very, um, what they call that, highly functional. So I worked for [employer] for [over a decade] without requiring any accommodations whatsoever. I did work a hell of a lot, many hours, to get my stuff done. Accommodations for me wasn't really as necessary as they could have been. I literally changed jobs multiple times at [employer] but because the ability to...at times when the politics hits you over the head with a sledgehammer, you can see it, finally, and you can get yourself out of a position. In several of the situations, I got out of it by seeing, you know, multiple reorgs and at the time, they hit me fast enough and I had a good enough record that I could move to another team. Also, in those days, they didn't keep such nasty records as they've got nowadays. They keep every comment that your old boss says, that your current boss says about you, so that it's read by every other boss, whereas when I changed jobs in the early parts of my [employer]'s history, your reviews weren't as important. And when I changed jobs, voila! Hey, I was successful! Because I changed jobs, I had good rapport, I got good stuff done, and people liked me, but nowadays at [employer], you don't have that. You get a brand, you're stuck.

Researcher: Did you have the ability to rebut the comments in your file?

Adam: It didn't make any difference. You can write stuff until you're blue in the face; they only read what the manager says.

Interaction Problems With Peers

People with HFA can be perceived as "difficult" by others. This perception may be due to (a) their pride in their cognitive powers, and/or (b) may arise as a defense mechanism when they believe that they are paying the price for their manager's or peer's not explicitly stating what was expected of them when they were asked to perform a task.

The latter can lead to their arguing about their correctness of fact to the point of distressing the other person.

Charles gave an example of pride in his cognitive powers:

Charles: [Pharmacists at drug stores] always have gotten paid more money than the hospital has, because the hospital pharmacist had always taken the attitude of, “We’re professionals; we don’t talk about that kind of stuff.” They do make more money, traditionally they do. But there’s this elitist attitude from the hospital pharmacists, “Oh Lord, I can’t just fill prescriptions...”

Charles believes that most hospital pharmacists are people with HFA, particularly because of the intellectual rigor of their training and the higher degree of challenge in their work than that which is needed to work in a drugstore. He does not believe that drugstore or retail pharmacists necessarily have HFA. Charles has been given feedback from his manager about this issue:

Charles: I was called into the boss’ office once and said that a lot of these people are complaining about you (nervous laugh) for one reason or another because you’re too intense, or you’re whatever or you’re not that flexible or whatever, even though you’re right. (nervous laughter) So I’ve learned to go with the flow. That happened to me about a year ago. But she said that everybody agrees that you’re a nice guy to work with. You’re a *really* nice person.

Ford has run into this issue, which eventually cost him his position at one corporation:

Ford: We buy [a start-up]. [The large company I’m working for] buys [a start-up]. [The start-up] comes in. [The personnel from the start-up] has a stick up their ass. And it’s not just a big one. It’s sideways. They are just not drinking the [big company’s] Kool-Aid. They give themselves a whole...because they’re working on [something] super secret [a major product which drove the buy-out]. They get themselves a whole wing of one building. And it’s security badges and you can’t get in and nyea-nyea-nyea. I get assigned that project. I try and meet with these people. I’m coming in confident. Full of vim, full of vigor. And I’m saying here are some best practices I’d like to share with you. These are things that I’ve

helped implement in other products. This is what I think I can bring to the table. Crickets [implying the reaction was so quiet that you could hear crickets chirping]. Okay. Well, then. Let me see if I can go at this a different way. Let me schedule a meeting with somebody a little higher up the food chain. Just one on one. Hi, my name's Ford, I'm here to be your product support representative. Let me tell you what I bring to the table. Here's what I can do. Here's the things that I've done in the past. Here's the projects I've worked on. Here's some best practices I would like to see you guys implement in the [revised for the large company] version of your game. (pause) Go back to my office. An hour later, my boss, who's supposed to have my back, calls me in and tells me the [start-up's] folks have requested that I be removed and he's assigning somebody else. Did not stand up and salute for me, did not say hey, what's the problem, maybe we can work something out. Just pulled me. That's when I should've started looking for another job, when I was working for that jack wagon, who, by the way, no longer has, and hasn't had any direct reports for a very long time. Really? What was the first clue? Um,...and, you know, upon reflection, I probably just went in too strong, too hot, too Aspergery, too full of confidence. I, of course, understood that I needed to understand their business before we could go about making any changes in it. But, it felt like I had enough of a basis of understanding of the basics of the business. But, no, I didn't handle it right. I mimicked the wrong thing. I mimicked what I had been effectively mimicking for the rest of [the big company] to somebody who is coming from outside, had a completely different corporate culture and also thought that their poop didn't smell.

Edward provided insight into the issue:

Researcher: [after hearing the story of asking his son to find the mozzarella cheese] The thing that I as an NT wonder is, would he say, "Of course I know it's in the chilled products!" as a defensive issue, sort of saying, defending himself so that he doesn't look foolish, or would he have known that and been insulted?

Edward: Is that a question?

Researcher: Yes, that's a question.

Edward: (pause) There is, OK, this is a hard one to answer at this point in time, because they're in the teenage period, and I feel everything I say I get an argument back. A lot of it seems to be on the one hand defensive, or for argument's sake, and I've been trying to analyze a little bit. What I come up with is this feeling, this fear of failure. If you have this fear of failure, you also feel a need to defend yourself. It might just be that it's not teenage argument, just for argument's sake, but as you say, a defense mechanism. Oh, that's what they also said at school, then and there: that I have a tremendous fear of failure.

People with HFA can be perceived as avoidant or “control freaks,” which often masks avoiding a social situation to prevent causing an even greater faux pas. Because people with HFA have difficulties in reading social situations, particularly in highly stimulating environments, they may try to avoid potentially difficult situations without disclosing their diagnosis. David gives an example:

Researcher: So [actively avoiding meetings is based in] a very real fear of not fitting in and knowing that it’s going to harm your job, not simply just fear of offending somebody.

David: Oh yeah. It’s not a fear of offending. I really won’t know at first if I’ve offending somebody. I don’t have a clue. I mean, that’s just happened a bunch of times. More people have done things to be offensive to me. I don’t care, you know what I mean? I literally don’t...it doesn’t...but there’s this coping mechanism. It’s one of the coping mechanisms is, you limit association with the same people to the situations that you can control, situations where you understand what the response is required or know what the expected responses are. You learn the B.S. that people say all the time.

Other potential reasons for the perception of arrogance are:

- Their lack of social skills. Unless they have had social skills training in courtesy, and been successful in applying that training in real life, they may be perceived as rude, cold, and aloof.
- Their difficulty in recognizing how to take turns and be interactive during a conversation. This may make them sound as though they are lecturing.
- Their failure to acknowledge (or even to understand) authority or to show deference to people in authority (e.g., higher on the corporate organization chart). People with HFA tend to believe in a meritocracy and will not be deferential to a manager or executive unless the person with HFA perceives the authority figure has earned their respect.

People with HFA often have difficulty in achieving compromise with peers.

The peers with whom people with HFA tend to work best are the ones who come to the same conclusions that they do when solving a problem. Different paths to reach the conclusion are acceptable and in fact may be welcomed if the solution is derived

independently, because it confirms that the person with HFA has cognitively understood the problem to be solved. Adam, a software developer, explained why he gets along better with one set of his peers than any other:

Adam: I actually get along better with the testers than anybody else.

Researcher: OK. How come?

Adam: First things first. I use the approach that I like the best with me, which is that I let them know what I think needs to be done, and I give them total heads-up on what needs to be done. In fact, I insist sometimes that I don't want them to use what I've written in the terms of unit tests or anything else; I want them to write their own tests so that we get a total different viewpoint on the solution. Tester, to me, is an excellent sounding board on how he reads the document, "he" or "she", excuse me, reads the documentation on what is supposed to have been the final result. If they find the final result and do tests that give us what he thinks is the final result, and the tests show there's something different, then it helps me to help my code be better.

Researcher: So it's the fact that they can help you find consistency across the requirements, it sounds like.

Adam: Yes. Exactly. And you know, it sounds inconsistent, but I like that kind of scenario because it's not from a design point of view, it's from a results point of view, if you get my drift.

A person with HFA who understands the world by creating his or her own mental models of how something works (particularly people) may have difficulty in solving an ambiguous or open-ended problem that cannot readily be intellectually modeled in this way. If the person with HFA enlists the help of a peer in order to solve an ambiguous problem, the person with HFA is likely to encounter difficulty, because the process of engaging with that peer and grasping the peer's ideas toward a solution requires a theory of mind, which the person with HFA lacks. The issue may be further complicated by the person with HFA's inability to read the non-verbal responses of a non-autistic peer when the person with HFA tries to explain his/her perspective; often, he or she does not know

how to incorporate a peer's different perspective into his or her own proposed solution.

Adam discussed why he has difficulty in trying to achieve compromise with his peers:

Adam: To me, [discussions with my peers] feels like pre-conceived information. They come into the meeting with the preconceived notion of what is supposed to be done, and ignore the "summaries," since many people don't bother to read documents, they don't bother to listen most of the time, you're saying this is the way you want it to be done, and they jump all over it to say, "I want it to be done *this* way." So I hope that answers the question.

Researcher: So it sounds...I think the preconceived notions matter a lot. It sounds like you feel like you're not being heard when you explain things.

Adam: Yes.

If the person with HFA is working alone, he or she may have difficulty with the open-ended problem because of a tendency to "lock onto" one view of the problem, and therefore not to see a wider range of interpretations and solutions. In addition, he or she may be afraid of not choosing the peer group's "correct" way to interpret the question, and thus give an answer which may be rejected – even though the point of asking the open-ended question is to shed light on different ways of approaching the question.

Office politics are a game in which they (often correctly) believe they cannot compete. In many ways, office politics is the ability to see what motivates one's co-workers and to use that knowledge to accomplish one's own personal goals. This requires understanding the mind of another person, which is one of the key abilities that people with HFA do not have. Bill described it in the following way:

Researcher: What does [office politics] mean to you?

Bill: First impression?

Researcher: Mm hmm.

Bill: Backstabbing other people so you look good.

Researcher: What do you find hardest to deal with, with workplace politics?

Bill: Having the impression with structure that you're supposed to be on the same team and working together, but that actually not being the case. So, because of the system of workplace politics, you don't know who you're necessarily supposed to work with or whether someone's setting you up or whatever. So there is a system set up where, you know, we...through politics (unintelligible) people who, you know, are political and to focus on certain things. And if you can't play the political game, then you're always going to be on the losing end. And I think as someone with Asperger's, I find myself on the losing [end] a lot. So that's extremely frustrating. Because it's a game I can't play. I can play the tech game that has well defined rules. But, this is a game I can't even really conceive of. I either don't, or I don't feel comfortable, playing with emotions, being, trumping up what I've done or leaving things out of what other people have done, etcetera. So there's a game of managing perceptions as neurotypical people call it. And I'm more interested in literalness. Did you succeed, did you fail, what happened. You know, if we're gonna ship late, then I'd be honest about that. The perception managing people would want to hold off and hold off and hold off and not tell anybody and deny it until it was too late. Thinking that this is good, you know, like it somehow fixes the problem. I don't think it does fix anything. But, they think it does, and yet they win in the political game. So I don't get those rules.

Researcher: So how do you cope with it?

Bill: Not well.

Bill spoke of other difficulties with office politics, which is often based in the inability to communicate with others with different goals in mind. He believes his issues stem from his need to solve a problem vs. someone else's need for self-promotion:

Researcher: What people do you get along best and worst with at the office place?

Bill: Best with... (pause) I'm not sure. I think people who can look at my abilities and appreciate them most, and put up with my...you know, Aspie-like personality and personal skills, or lack thereof. Worst are people who are extremely political, in general and...um, are more...seem to be not very interested in...the results, but more of how they're perceived.

Ford described how office politics are tightly bound with the difficulties in communication that people with HFA face:

Ford: [When asked how he defines workplace politics:] Workplace politics are when people who have the ability to communicate...people who have the ability to craft workplace appropriate communication wind up getting

credit and/or...recognition for things that other people either a) are already doing better, but can't talk about, can't communicate correctly, or b) actually invented but can't communicate. Workplace politics to me is almost always about communication. It's almost always about communication. If you can communicate well without offending people, then you've got the politics game mastered. If you can't communicate well...then I don't care how good you are at your job or whatever. If nobody realizes you're doing it or if somebody else can take advantage of the fact you did it and aren't communicating it, then those people who have that skill, that one skill right there...and it's a manipulative skill. Some will rise, whereas other people will fall away. Politics to me is...is the ability to proselytize. And I...again, I use that word advisedly. I know exactly what proselytation is. And if you can preach it, then it doesn't matter whether or not you did it. And if you can, if you can make the director think that you're the bee's knees, whether you are or not...you're the bee's knees. Really, the rest of it doesn't matter. That's to me, what workplace politics are. And now, there's a correlarity to that. I mean, I understand you have to get along, you have to go along to get along, you have to get along to go, go anywhere at all. And but it's still that communication thing. So if I can proselytize what a nice guy I am correctly to...and communication isn't just about words. If I can communicate effectively to the people around me that I am non-threatening and worth hanging out with and worth respecting and that I feel the same way about them, then politically I'm okay. If I lack the ability to express to the people around me through both verbal and non-verbal and written communi-, or from all forms of communication...that...that I'm cool, that I'm not arrogant, that everything's fine, you know, if I can't do that or if I can't hear them saying it back to me...then, then I'm failing at workplace politics. It's all communication based. George Bernard Shaw. "The single biggest failure in communication is the illusion that it has occurred."

Researcher: Wonderful quote. Wonderful quote.

Ford: And that is on the bottom of every single mail that I send. And it's on there for two reasons. One, because I need to warn people ahead of time. Two, because people need to understand that if you speak in acronyms or, or the shorthand of your job and you're working cross-discipline...you're not gonna get anywhere.

Ian described how some of the personal traits of people with HFA, particularly their direct speech and their sense of honesty and fairness, cause problems:

Researcher: What do you find hardest to deal with the workplace politics?

Ian: I think I'm overly honest, to a fault. When I do lie, it's very obvious. (mutual laughter) I'm sure you've heard that before. The other thing is I have this

sense of, we need to treat everyone fairly. So when I see workplace politics, it just gets to me in the worst way. I don't know if it's a spiritual component to me, or part of my spiritual upbringing, but I really think that people that play the political game, in a way that's evil, I won't go that far. But it just doesn't align with my core beliefs. ...

Researcher: So what do you do to cope with workplace politics?

Ian: Oh boy. I dragged into workplace politics quite a bit. This is what I do: I tend to tell people what they want to hear, which is a bad thing to do. It comes back to haunt me a lot. ... If I do get caught in a very bad political bind, then I just go into a meltdown. I get very anxious; I think about it morning, noon, and night; and I can't break that cycle.

Researcher: Can you give me a war story about what would trigger that? I know there's got to be a story there some place.

Ian: Let me give you one example. There was a guy – not my boss, at a higher level, and I had a dotted line to him [Ian reported to him, but the other person did not perform Ian's annual review]. He did something that I would consider unethical, and it was spending company funds that I was responsible for. And he said, "I needed to do it to manage the business." But I was accountable for the funding. I reported him to another senior manager. He just got all over me, chewed me out, wouldn't let me forget it. This happened in [several years earlier]. To this day, he still hasn't forgiven me for it.

People with HFA see the social interaction of people who are not on the spectrum as political, even if it is not. This may cause them to feel irritated with their non-autistic peers. Edward described his thoughts on it:

Researcher: What does [the phrase "office politics"] mean to you?

Edward: Well, it's very clear. I say to everybody, "I don't do that." [unintelligible] To be fair, that's my first reaction. To be fair, I understand that other people need to have it. But I don't do gossip. I'm always the last one to know about gossip. Sometimes I don't know until it hits me in the face. Yeah, what can I say? Now we're talking naïve, innocent person who doesn't think like that. But I can appreciate that, because it exists. And I will, and that's the good of soft-skills training, I will try to understand what their particular drivers are. And I can work towards that.

Researcher: And how would you define it, if you could give a fast definition to how you as an Aspie see office politics to an NT? How would you define it?

Edward: (laughter) Oh, God. (laughter) The thing you need to keep yourself going. (laughter) But that doesn't help, does that?

Researcher: No, it does, actually! That's actually a very insightful message, quite frankly.

Edward: It's their version of stakeholder management and I guess getting ahead of the game. Whereas my version of stakeholder management is going to a person and saying, "Right, what's on your scorecard, or what are the objectives, the three objectives you would like to reduce this year? And how can we align ourselves to also meet your objectives and see what you can do which can benefit me?" And they'll go on about, "Hey, what are you doing, man?" I swear! It just pisses me off.

A few of the participants, like Edward, trust their managers enough to divulge their diagnosis and have told their managers that they simply do not attend to office politics, and that it is the manager's job to take care of that for them.

Because they do not understand subtext and context, it is difficult for people with HFA to understand many what makes a team player, or how to deliver bad news to management. The result is that they feel like they are often set up and left to defend themselves without support from their supervisor. Edward provided additional insight through an example:

Edward: Because you have to be very careful, because otherwise you're seen as not social and not a team player and therefore I'm sure it has impact on your career or in the way that they handle you. One particular example, of a very long time ago, is that they were going to put me on a difficult project to kind of lead that, and they explained to me, and what they were explaining to me, I was going in my head, "Oh my God! This is just horrible! This is [unintelligible]! This is going to be so hard! Don't they realize what they're asking?" At the end of the meeting, they said, "So, Edward, are you on board?" And it's like, "Well, actually, you do realize what you are asking? I'm going to have to work day and night for 14 days to make this succeed, and even then the chances are pretty slim to make it succeed." I explained that later to my wife, and they all looked terrified and horrified to me. She said, "Yeah, they were just trying to bond with you at that point, and make your buy-in and get your buy-in." It was a bad project! Why would I buy in anyway? Yes, of course I was going to do it, but I didn't have to go whistling into it! They were trying, "Oh, we're going to make you jump over a ship. And you need to be happy about it."

No, I'm not! It's work. So in a way, they make it even harder for us in just not accepting the way we are. Another example I had once where I saw clearly that a project, as a project manager for a project, I saw clearly that it wasn't going to work and that we were going to overspend, go over budget, and I was not going to deliver the customer requirements and all that kind of stuff. A friend had told me, "If you're a project manager, when you see that nobody's going to succeed, you need to blow the whistle, because otherwise you are to blame." Meanwhile, at the same time, I saw the account manager promising all kinds of things that we couldn't possibly make to the customer. Now I went back to the account manager and said, "Right, we can't make this. This is not going to work this way. You can't make us promise this." I said, "You need to find another project manager, but I can't do this, because I can't deliver what you promised to him." They were not impressed. I escalated to manager then, and he said, "What's going on?" I explained to him everything, and he said, "What can I do for you?" I said, "You need to pull me out, because I can't do this. They're promising something which can't be delivered, and I can't give a guarantee for it." He did his best to do that, but meanwhile, the feedback from the account team came back, saying that I was rude, that I was crude, not a team player and all that kind of stuff. So I went to my manager, because [my company] works on feedback as well, and he said, "This is the feedback I get. What do you say?" I said, "You've know me for three years now. Am I any of these things?" He said, "No, you're not. You're not rude; you're not crude. You're always there when something needs to be done." I said, "Well, there you are. I don't need to defend myself, do I?" He said, "No, you're right." Now, that was the best help possible, in the sense, that I don't need...why can't they just take me on face value? I've got these chips missing, so therefore I can't do them. Does that make sense?

Researcher: Yes, it does.

Edward: And yes, I could do them, but then I would have to simulate them and it would actually be completely against my nature.

The issue of a model to work from arose again in Edward's successful way of dealing with a major political issue, which occurred during his annual employment performance review. He literally went by the book to solve his problem.

Edward: The first time I [divulged that I was an Aspie] was where I kind of had a hiccup at a customer and it was the first kind of hiccup we've ever had at [employer]. [The employing company] doesn't like surprises, bless them. They wanted to find fault, not necessarily in a bad way, but problem-fault, that kind of was the logic to them, and they needed to find a reason why this happened. Basically, it was a customer who didn't extend the contract.

They wanted to find all kinds of reasons. They kind of said, “It must be you, because you didn’t do your stakeholder management well enough.” At which point, right, so it’s me because I can’t do my stakeholder management well enough. So I can’t really refute that, because given the evidence for that, it’s in some ways pretty hard, especially if you don’t ask an Aspie to give evidence for that, because you think, like, “Right. I can give you all the e-mails I sent the person. I tried to tell you all the meetings I had with that person. But I’m sure that is not what you mean, because you’re an NT, and only I, an Aspie, would actually have that kind of detail, and you wouldn’t possibly expect it, so I can’t give it to you because you’re possibly not expecting and you mean something else entirely.” So I said, “Well, you know this is what. My son has been diagnosed with this; there is a good possibility that I have challenges there as well, so actually, you could be right, and I might need some help for that. I probably have Asperger’s syndrome as well.” To which the manager at the time kind of chuckled and he didn’t know what it was, “So can you kind of tell me what that means? Well, how do I tell you what I am? Right. So I sent him some links and all that kind of stuff. He said, “What kind of help do you want for that?” I said, “I don’t know. You can hardly have someone continuously interpret what somebody’s saying.” And that went really bad, because I didn’t know. He didn’t know, up to the point where he started pushing me in the direction, “Well, maybe you’re not suited for this job, because you have communication challenges and all that kind of stuff.” Hang on! I was the one, you asked me what possibly could have given cause to this. I gave you a possible reason; now you’re actually linking it up and starting to say I’m defective or something like that, which is a totally different approach. I was just trying to give him a reason. That was one case. I kind of regretted this. What I then did: I read a book at the time by Sun Tsu called “The Art of War in Business.”

Researcher: Great book.

Edward: Yes. I then started to look at all the forces in this kind of witch hunt, and I said how can I possibly completely disarm the kind of statement that this manager has? So I started going to the account team and making sure that I had done a good job. I started going to all the other stakeholders within [his employer], who said, “No, you did a great job; no, it’s nothing to do with you.” I said, “Well, you know this manager isn’t sure who’s to blame. He’s kind of looking at our team, and maybe we hadn’t functioned well. You feel that I worked well; therefore, if he feels I didn’t work well, he must think that you are not OK either.” I started building this thing completely up. At which point, a month later, the manager said, “We finished out. We find you not at fault at all, and thank you very much for your professional attitude.” Yeah, right! He had to move out and he was seen as a bad manager.

Researcher: Congratulations!

Edward: I do still feel bad about this, but I completely worked the system to kind of discredit whatever he might say about me.

Being respected appears to matter more to people with HFA than being liked – but if not being liked (that is, not fitting in socially) keeps them from being respected, people with HFA often find themselves in a quandary. This is one of the core issues that people with HFA encounter in dealing with office politics. They believe (often rightly) that they have difficulty being liked by their peers, and thus place their value in their intellectual abilities, which was discussed in the “Coping Skills” summary. In Hank’s words:

Hank: People very often comment on me being different, but they always say “different” in a good way. They refer to me some times...I won’t say “savant genius,” but somebody that they respect, that has no common sense, which is probably very accurate, I guess.

One of the study participants attended a talk by Temple Grandin. He says that he still remembers her statement, “I feel sorry for people with Asperger’s. They still want to be liked.”

People with HFA often feel devastated by insults to their intellect, particularly when the insult is delivered in front of their peers. Insults to their other personal behaviors (such as dress or mannerisms) which would bother most other people are often ignored, because they don’t understand what the issue is. This personality feature, which can be interpreted as having a thick skin, can be an advantage to a person with HFA in certain situations. However, people with HFA can feel bullied when they believe that their intelligence is insulted, regardless of the intent of the remark. When a person with HFA feels bullied, he or she may make a cutting remark in self-defense. However, it is

often difficult for a person with HFA to perceive a social cue regarding actions or statements. Sarcasm is not always easily understood, particularly if it is not related to a personal or intellectual experience which they have undergone, since the person with HFA may not be able to relate or interpret an emotionally-based comment.

Gina described an incident which led to a nervous breakdown. Her manager's behavior was not only inappropriate, but it was also particularly painful to her due to her already elevated level of anxiety. She recalled it as major event in causing emotional distress.

Gina: [discussing interactions with her manager] I was just like, "I just want to not be insulted in the workplace!"

Researcher: Could you give me a direct example of when you felt insulted?

Gina: I got [programming terms] "break" and "continue" mixed up. I always do that for some reason; it's like dyslexia with break and continue. It's even worse now after I've been insulted like that, but he was like, somebody was like watching me work, and he just came and sat down and said, "Can I see what you're doing?" And I suddenly got really nervous about doing that. I was trying to do code and I didn't know if I should be explaining to him or not, and I said, "I'm going to put this break in here" or something, and when my boss overheard of, and it's like a big working room, and everyone is there doing their own thing, and he just shouted for everyone to hear, "Oh my God! We have a developer that doesn't know the difference between break or continue!" That's just scary. "You need a book, like you need to go study up right now, because that's unacceptable" or something like that. I was mortified, and I couldn't work for the rest of the day...

Researcher: Understandably!

Gina: ...because...

Researcher: "Please! Humiliate me in front of my peers!"

Gina: Exactly! I mean, it's one thing if you do that in public, but the worst part of it was just that he dragged everybody else into it. That was really difficult.

People with HFA are team players – on their own terms. People with HFA will actively try to help out their peers in completing a job. A high level of providing assistance is their way of showing friendship and teamwork, which is not by using typical non-autistic social means. As discussed earlier, people with HFA will often act upon urgent requests. They will also often work on small projects that will both teach them about the issues involved in solving a large problem and also may involve creating tools or processes for use by others in their department. They see performing work-related activities as signs of friendship, because it lowers the burden of effort for others. This type of assistance, and recognition for performing it, is what people with HFA hope to receive but do not often get from their work peers. David's earlier quote, in which he discussed prioritizing incorrectly, is an example of such behavior.

People with HFA do want to be a part of their workplace's team, but typically have profound difficulties with team-building exercises and other group social activities whose purpose is not directly related to achieving day-to-day job results. Team-building exercises are typically exhausting to people with HFA, due to their difficulties in understanding the purpose of small talk, which is often required in such exercises. People with HFA tend not to understand the value of superficial familiarity with their co-workers' personal lives. They do not see how small talk is an aid to understanding someone else's way of approaching information, because it does not assist them in understanding the other person's thinking (rather than emotional) processes. They also do not understand the purpose of small talk in the workplace, because it doesn't solve a business problem. To someone with HFA, the primary value of a workplace peer is in the peer's ability to disseminate information and complete tasks; they do not understand

how they may learn a peer's thought processes during a social situation. If a person with HFA wants to get to know another person from the workplace, it is likely because the person with HFA sees that there are common underlying intellectual (not emotional) interests or common experiences. People with HFA who want to know about another person's internal life want to know it with the same depth that they know their other subjects of knowledge: very deeply. They do not understand how to navigate, and do not desire to engage in, the non-autistic process in which light conversation turns into a deeper friendship over time. Rather, it is likely they may approach knowledge about the other person's personal life as yet another subject to be mastered, which most non-autistic people would find off-putting.

Furthermore, people with HFA often do not know how to turn down an invitation to a social event without appearing as though they dislike the person who extended the invitation or the other people who attend the event. Yet the reason for turning down an invitation is typically not due to a dislike of the others. Rather, the issue is disinterest in small talk and the sensory overload involved in participating in a social event in an unfamiliar physical environment. Of the participants in this study, Ian has the job requiring the most participation in social events; he is an account manager and thus has to work with customers at another company. He describes it this way:

Ian: I struggle a little bit with some of the extracurricular activities.

Researcher: Such as...?

Ian: Dinners outside of work. When we have national sales meetings with 1000 people, there's always some type of function. I try to excuse myself or think of a reason why I don't have to go. I'd almost prefer to sit in my hotel room than socialize with a big group of people.

Researcher: OK. Because...?

Ian: Anxiety. I just, some part of me feels that I don't fit in.

Edward provided insight into how he relates to small talk:

Edward: Yeah. I mean, I've got another [customer] engagement. I was meeting up with my new sponsor, and the kind of account manager for that sponsor of that customer. The first two hours of a three hour meeting, they went about this conference they went to, and all the parties, and all the people they met at the parties and how much they'd drunk and how much, and I was like flipping. And they just keep on. I needed to grin [on occasion] and sometimes pretend I'm laughing. I needed to sometimes say something witty, and it's like having an out-of-body experience: "God, when is this going to end?" In those situations, when I get home and I put myself on the weighing scale, I've lost a kilo., My previous manager – I don't know what my new manager's going to do – my previous manager is very much a people person, and she likes social events and getting together and all that kind of thing, and I'm trying to, in the nicest way, say, "Well, I think that's a great idea, but not for me. You got all my loyalty, you've got all the loyalty you want. You just have to ask, and you'll get it. Teamwork, you'll get it; just ask, and it will be there even if you don't ask. But don't get me to go to social events. It's just going to tire me and kill me off and sap out my energy for the next day." But you can't tell that to these people, because they feel hurt, and they feel like you're not a player. And it's so wrong; we are players. We just don't need all that exhibit. Sorry.

Meeting Issues. Meetings are a core communication practice in almost any business. Meetings come with their own unwritten behavioral rules, which can cause difficulties for people with HFA.

Meetings can be overwhelming for people with HFA, due both to social and sensory issues. David described his social issues in attending meetings. They are primarily based in his hope that he does not say the wrong thing and turn not one but several people against him simultaneously. His issues do not come from paranoia; they come from his not wanting to embarrass himself. David provided an initial general overview of the issue:

David: Going to a meeting is oh my God! Because I know I will screw up. I know I will. I know I will mess something up. I will just say the wrong thing.

Researcher: And what happens then?

David: Either I get derided or my thoughts are not, in this milieu, it adversely affects my effectiveness.

Researcher: So it's easier when you're working on the jobs by yourself or when you have your own business than when you feel yourself in a company where you feel there's more judgment from the outside, correct?

David: There's always judgment. We always judge. That's something I've learned. But it's based on interpersonal rules you learn when you're a kid, not, and a lot of times, it's almost subliminal judgment. You decide who you want to associate with and who you don't. The people that you don't want to associate with, you don't, and you don't listen to them. Their e-mails don't get answered. You know what I mean?

He later described an actual situation:

David: [My boss and co-workers] don't understand that sometimes it's just abject terror when you go into a meeting here, and you have to...like today, I got invited by my boss to go to a product thing. As a matter of fact, the lady who stopped by here is going to that, and says, "You should come too." She's going to drive. The thing is, I don't really dare. It's better not to be with people that much, because it's a constant pattern where you...if you don't give the appropriate response once, people are usually pretty difficult. But then the wall starts building, and with each successive inappropriate response, and it might not be a...it's not inappropriate in terms of sexual terms or abusive terms, it's just unexpected than even inappropriate, after a while, they back off, and your effectiveness lessens.

People with HFA would like to ask questions in meetings to get information that they believe they need in order to complete a task. Because they cannot perceive the proper time to ask them, particularly in meetings, they can feel and look foolish, which can cause them to shut down emotionally and can aggravate their depression and anxiety. In meetings, they need help in determining when and how to discuss content. Hank described the workplace in the following way, later noting that this issue occurred the most at meetings:

Hank: I guess the thing that bothers me the most in the workplace is what to say and when to say it. I know how to act, but there is supposed to be the right way to act. What if I do something wrong? Is that the thing I'm trying to think of? And I've always had more anxiety than anyone else. I'm embarrassed.

People with HFA may bring up issues at the wrong time in a group setting. For example, if they have an urgent issue, they may bring it up even if it's not germane to the meeting's overall topic or current conversation thread. The researcher of this study had a personal experience at a conference with approximately 30,000 attendees. One late afternoon session had approximately 3,000 people in attendance; the speaker was world-renowned in her field. During an open question-and-answer session, numerous people asked the speaker questions of interest to the general audience. At one point, a person who was known to the researcher to be on the autism spectrum came to the microphone and asked the speaker if the busses for the conference would be running at 6 p.m. that evening. The person on the spectrum did not know that this question should be posed to a volunteer at the registration/information booth, rather than to a speaker at a general session.

Gina provided an example of her experiences:

Gina: Sometimes I really need to say something and I won't know when to butt in during a meeting, when everyone is talking, and I think, "Oh, I really need to ask about this ticket." The response is, "Oh wait! We're not finished talking about this topic yet!" I don't know what...it's so kind of overwhelming in these meeting where everyone gets their turn, and I feel like sometimes I interrupt people too much. Like sometimes I've gotten kind of yelled at for that, and it's hard for me to know when to come in, because people can sometimes can take over the conversation, and I'm like, "Oh wait!" (unintelligible) We go to the next subject. I've gotten sort of, "Don't interrupt me" before.

As discussed earlier, people with HFA may get stuck on a topic of personal interest at meetings and “rat-hole.” They are likely to be unaware that other people at the meeting are not interested in the details of an issue. As discussed in the literature search, people with HFA have difficulty perceiving subtle communication, particularly non-verbal interaction. In an attempt to have all of their questions answered when someone is available to interact with them, people with HFA may not see a peer’s eyes roll or note that other attendees are looking at their watches as they speak. Consequently, other employees at the meeting may come to resent the use of time and withdraw from a person with HFA, leaving the person with HFA unaware of the initial onset of a long-term problem with peer interactions.

People with HFA typically don’t understand the purpose of large corporate meetings, such as quarterly divisional meetings, and tend to actively dislike them. For people with HFA, there is usually too much sensory overload at a large meeting – too many people, too much noise, too many smells, etc. In addition, people with HFA have difficulty understanding the relevance of mission and positioning statements to their work, because mission statements are describing the big picture, or the abstract information about a company’s direction which they do not intuitively understand. Bill described the kinds of meetings he finds useful:

Bill: Smaller meetings are better. Especially if it’s supposed to be a communication, not an info dump. So anything above like five people, that to me is more of an info dump. Fewer than that, that’s good for like getting requirements and actual collaboration. I haven’t found that meetings with large groups and are collaborative meetings work.

Ford described attending his corporation’s extremely large annual employee meeting:

Ford [Who is comfortable divulging his Asperger's]: I will make it very clear up front [when I am hired] that...there are morale events that I will go to, and morale events that I cannot go to. And the company meeting, I will do my absolute best to go and be there as long as I can. But, I have, I can't sit with everybody in the middle of, in the middle section, like twenty rows away from...I can't. So I'll probably be up and wandering and walking around a lot. Because I can't sit in a crowd like that...when it's just [the CEO] running at the mouth. A baseball game's different. There's enough going on. There's nine things happening out there and I'm very interested in what's going on. I don't find talking, I don't find listening to somebody talk...as much as I like doing it myself, I don't find it very instructive. I don't find it very useful. It's not a good way for me to take in information...Unless the person is utterly fascinating, it doesn't cut through all the other crap that's going on well enough for me to take it down.

Researcher: Because there's all the other things going on in your head.

Ford: Exactly. You ain't Bono. I'm sorry. But, listening to you try and sing lead for 45 minutes is not that interesting. There have been some fantastic speakers. There are TED speeches I can watch. And they're just utterly fascinating for one person talking for 45 minutes. So far I haven't been to a company meeting where anybody has talked for that long or even 15 minutes where it's just been, it's just not that interesting.

Work Styles. "Work Styles" refers to the ways in which people with HFA view workplace issues beyond those caused specifically by interpersonal interactions.

Process is difficult for people with HFA to internalize, unless they understand why it exists. The fundamental reason for problems with corporate processes is that process is the business world's version of social rules. If a person with HFA understands a group's rules for how to accomplish something, the person with HFA can follow them. It is likely to be helpful if he or she can help create these rules, allows them to internally incorporate the process so that it becomes automatic. Bill described his thoughts about process:

Bill: [when asked to expound on policy and process] I prefer if you can explain why, even if the explanation doesn't really make a lot of sense. One time

we got sued. And that may be seem like yeah, we got sued. But...I say, oh, okay. That makes some sense. I like some explanation over policy. Like...we have a policy in our department where if you want extra furniture, you have to go to the admin. Actually, like for instance, they wouldn't give me a bookcase for my office. It was a typical bookcase. And I asked like why can't you get me a bookcase? Like oh, those hanging bookcases cost...hundreds and hundreds and hundreds of dollars. And I was outraged. They cost that much? Ah, forget it. I can just use this cabinet. It's good enough. I didn't need it. So sometimes being honest with just saying what it is, and whether it's cost or whether it's...well it's a big deal for, you know, it's, it's legal or whatever...just explaining it to us briefly...is good enough. I assume that some people will probably start arguing. But...you know, I'm, I'm of the person that doesn't necessarily do that. So I take you by your word. And if you say yeah, there's a reason why, as long as you're being honest and not bullshitting me. That's the best way to handle it.

It may take longer for a person with HFA to get up to speed on the information needed to perform his/her job than most people. People with HFA tend to aim for knowledge depth when learning a subject. Consequently, it may take them longer to get up to speed on both intellectual and social issues than it would for employees who are not on the spectrum. Typically, a person with HFA will try to learn not just the facts, but the underlying framework that holds the knowledge together, be it a scientific paradigm or a company's culture. Adam gave an example of how this occurred in college, and noted later that this process still occurs in his professional life:

Adam (discussing learning in a school vs. learning by experience): This was on a system used, it wasn't a card reader, but it was a batch system, where the instructor wanted it so that you'd be able to also have an interactive UI [user interface], which essentially was filling fields; there wasn't any fancy stuff, OK? But you had to write a program to do it, and then there was these follow-on inputs. Well, I wrote a program that allowed me, through UI, to create the inputs, which then allowed me to learn enough about the program to write the real program. It was, what I did was completely different than what they wanted me to do, just so that I could learn it, so that I could then turn around and do what really needed to be done. And I noticed that other people who just wrote directly to what the

teacher wanted, in my feeling, and I'm positive, they didn't learn half as much as I learned, but it took me longer to do it.

Researcher: So it means more to you to get the depth of understanding, and you're willing to put the time in to get the better long-term result.

Adam: Yes. But see, here's the point: sometime the long-term result is not that important. (mutual laughter) Me having to figure out where the importance is is a problem. I can't always determine whether or not what I'm doing is important or not. So I do it all. It's sort of a shotgun approach to getting stuff done.

Charles also described completing pharmacy coursework in a similar manner:

Charles: When I've not been able to see the bigger picture is when I've gotten into trouble. I was a professional student, but I decided I had to do something for a living. Plant physiology: on an exam, we had to reproduce the photosynthesis pathway. Light and dark reactions and all of this. It's very complicated; it can be as complicated as you want it to be. When I first approached that problem, it was an overwhelming problem for me to memorize that, until I clued on, because I was trying to learn isolated facts. When I sat back and looked at the total picture of what's going on, and made some sense of it, then I could memorize the whole damn thing and regurgitate it out on an exam. It was simple. This went to that, that went to that, that went to that – the why behind everything rather than try to memorize isolated facts.

Researcher: That sounds like something that, as an Aspie, you should be proud of. You look for the why behind everything.

Charles: I am, but because of that, I get stuck on little pieces of things, too.

The extra time that it takes for a person with HFA to learn new material is one reason that he or she is likely to see imminent problems in a project or other work effort that a person not on the spectrum would miss. The person with HFA will see the conflicts in little-observed details because they have internalized the details of the knowledge needed to perform his or her job with the extra time. Both Charles and Adam describe how they ended up learning much more than required. However, in Adam's case, it meant doing more work than his fellow students, and Charles acknowledged that

he will get stuck into the details. This tendency is related into the person to HFA's proclivity for specificity. These traits, plus their depth of knowledge, is why people with HFA are good employees for the review of new systems designs; with relative ease, they find problematic process interactions that others may miss.

People with HFA usually learn best from doing, rather than by book or lecture.

Ford described it in the following way, which was echoed by a number of the study participants:

Ford: There are people who need everything planned out all the way to the, to the, to the last move before they can take the first step. And there are people who want to read the entire manual on [a certain software application] before they touch their first server. And then there are people who, as long as it's a non-threatening situation, would much prefer to get in there with the [software application]...or much prefer to get in there with the [...] server, rather than reading the book. And, you know, make some mistakes but learn as they're going along. Right? I'm very much in the latter category.

People with HFA typically have difficulties with being interrupted by other people, but often have problems if they are not allowed to interrupt others. A major paradox exists in many people with HFA. They generally can't stand interruptions while they are trying to work and want people to schedule interactions with them, but they tend to want to have access to their manager or a co-worker immediately when they want it. Anxiety often occurs without such access. Edward summarized the thoughts of many of the study participants when he described his issues with interruptions in the following manner:

Edward: Well, (pause) sometimes we don't get to speak to anybody until we make a meeting. I could say, "That's very Aspie, isn't it?" But I'm like the person where, like, done this, done this, and then, right, there's a person sitting, and I'm going to go straight for him and talk to him and discuss

this problem. And they go like, and if I could just get this off, then I could move further. They're like "No, can you schedule a meeting?" It's like, "Well, no. OK. Do I have to?" That's kind of a stopper, because my time is kind of there and then. By insisting on a meeting, I have to go through all these other steps first, and then you have to go through their meeting thing and all this. I can't possibly ask that from people; I understand that, but maybe some more tolerance on that would help as well. When Aspie kids are young, they just go up to strangers and start talking to him. I guess this is my version. I go to somebody I know from my office and start talking, "You know this problem? Blah blah blah blah blah." I pick up from where we left off years ago or whenever. I know that's a bit tough, but then actually completely stopping in my tracks and asking if I can do a meeting the next week is like, "No. That doesn't work really very well." So that's a bit annoying. But I do know that I'm being totally unreasonable in my requests.

Researcher: Well, let me ask you about the flip side, which is something I know a number of Aspies have difficulties with, which is interrupts.

Edward: Oh yes, I don't want interrupts – noooo! No! I mean, I know I can do interrupts, but if I get interrupts, I don't do any work. But part of my work is just dealing with crises so I get completely interrupted. And that's fine, if I know that's going to be my day. When I know my day is just actually take all the problems everybody has, that's fine. I can do that. But don't ask me to do anything else. It's like this person today, who said, he has been interrupting me the whole day, and then he said, "Oh, we're going to have another meeting at 12." I checked my watch, and it was 11:35 as I arrive, and we're going to have another meeting at 12. Right. Well, what can I do for 35 minutes? I could boil 7 eggs – no, 6 maybe... I could do some e-mail, but I might get dragged into it, and something else will pop up. No, I'll wait, I'll wait. Maybe I could have lunch! Yeah, I'll have lunch quickly. Have lunch, 12 o'clock comes, it's not happening – where is he? I wait; I wait. It completely throws me at 5 past, he's still not there; 10 past, he's still not there. 15 past 12, "Oh, the meeting is not going to happen." Oh-ho! (agonized moan) And my whole day is already blown and I'm fed up. Right, I'm not going to do all this, I'm going to jump in the car and set me up for the next meeting, the more controlled, etc. Yeah. Interrupts... I can manage interrupts if it's on a continuous basis, but if I have to do a nice deliverable, I just can't handle those continuous interrupts then. I'd rather switch everything off. These days, with IM [instant messaging], telephone, all that kind of stuff – it's just getting worse.

Researcher: So what are some things that can be done to handle interrupts?

Edward: We can switch off things ourselves, but I think some kind of recognition that you can plug something in your calendar and then just do that and nobody is even going to annoy you, or even ask what you've been doing for four hours. Maybe even, because [my company] is quite good at that,

to tell us that we can self-manage. But on the other hand, you know what? That doesn't help. Because self-managed still creates the guilt. I'm not sure if that actually is meant, and we feel like we're cheating the system if we actually benefit from that. I suppose this could be an Aspie trait. Even if they say so, we're still not sure whether they mean that, because we know they're not like us. Maybe active encouragement or forcing us. "We'll now send you off. Do your work, and don't come out for four hours." I know, it's ridiculous, isn't it?

Researcher: Well, there's this one contradiction and I've heard a couple of answers and so I'm interested in hearing yours as well. There's the issue that you find it very difficult to deal if somebody interrupts you. But at the same time, if you need an answer, you want it right now and you get frustrated if somebody says, "Can you come back to me later?"

Edward: Absolutely! (mutual laughter)

Some people with HFA can be highly aware of timeliness, to the point of

obsession. Some people with HFA feel like someone else is disrespectful (if not indeed lying and two-faced) if the other person is even two or three minutes late to an appointment with them. They do not understand other people's interruptions, particularly those involving social interactions, since their perception is that their non-autistic peers know how to handle changing priorities while they do not. Edward described a recent episode involving his manager who was late to a meeting with him:

Edward: I'll give you an example. I had a crisis a couple of days ago, which I needed to escalate to my manager. My manager was new; she was on-line. I IM'd her. I said, "I've got a problem," and she came back. I said, "I've got a problem; do you have some time for me?" She said, "Not right now; I'm in a meeting. Can it wait until 10 past 5?" I said, "I probably can write down the problem by then, but yes, it can wait until 10 past 5. Will you call me then?" She said yes. She only called me back at 20 past 5, and that was really annoying, because I was like, "Right. She committed. It's 10 past 5; she's not calling me back. If I can't call back to her because that would be like I'm being impatient. She might have forgotten. What do I do? What do I do?" For that period of time, I couldn't do anything. She came back 10 minutes later. That was hell. Because I could have just, "park until that time," and it was still annoying and it happened in my work. But no, she'd made a pledge; she's going to do that. Then when the time came, she wasn't there. That was quite tough then.

Career Management.

Climbing the corporate ladder is difficult for people with HFA, because they typically find managing other people to be difficult at best. People with HFA typically do not view their own professional status in terms of how high they are positioned on the company's organizational chart. Rather, their concept of status usually comes from recognition of their intellectual capabilities by their peers and management. They feel rewarded when they are acknowledged as thought leaders and are given the paycheck increase to match. Moving up the corporate ladder is not necessarily a reward for them, because typically it involves management of other people, which makes them uncomfortable. Earlier (in "The High Level of Importance of Work"), Adam described his major need as, "Just give me something good to do." Ford described his need in the workplace:

Ford: I need to feel listened to. You know, . . . I need, I need . . . I need to have my ideas acknowledged. It's really important. I mean, sometimes, especially since I know. I don't think like everybody else. I think . . . what I call it, I think around the left hand corner.

It is usually difficult for people with HFA to manage other people as a part of achieving a greater business goal. The DSM-IV-TR diagnostic criteria of autism spectrum disorders include qualitative impairment in social interaction (American Psychiatric Association, 2000). Personnel management requires effective interaction in all directions of an organizational chart (with management, staff, and peers alike), and thus requires more complex social interactions than being an individual contributor. Difficulties in managing personnel may cause long-term problems in people with HFA,

since much of advancing up a corporate ladder involves managing personnel, either indirectly (management and peers) or directly (personnel reporting to them). A quote from Bill:

Researcher: Okay. What do you like least about your job responsibilities?

Bill: (long pause) Probably having to manage my relationships with people. Not working with people, but managing my relationships with them. They expect me to act in a certain way. And if I can't interpret what they mean, or what they're saying...or whatever, then I have a problem.

Ian described his experiences:

Ian: When you look at my performance reviews, most of them are, in fact, all of them have been average at the worst. The majority have been above average performance reviews. But there's always that one section that says, "Needs to be more assertive; needs to project a leadership style." So those are the two big complaints that I receive at work. I do extremely well when I'm working as an individual contributor. When I'm put into a management role, that's when I struggle.

The sentiment of having difficulty managing relationships with people is perhaps the core issue for people with HFA who are knowledge workers. Managing staff who report to you is significantly more difficult than simply relating to peers. For this reason, people with HFA often encounter profound difficulties when working as a supervisor.

Corporate restructuring often causes personal career problems. Like others on the autism spectrum, people with HFA typically have difficulty with change. Difficulties seem to occur particularly when interpersonal environments have changed due to the addition or subtraction of people, which creates new social situations which are unpredictable to a person with HFA. It is one of the reasons that people with HFA are more comfortable discussing objects, data, systems, and factual information with other people; there is less fluctuation and interpretation required. The ability to systemize is their way of handling virtually any situation. When the system changes, a person with

HFA needs to understand how the system, particularly those involving interpersonal dynamics, has changed. Unfortunately for the person with HFA, this is typically done through indirect communication that they cannot fully interpret, such as body language, word context, etc.

A person with HFA may have noticeable difficulties due to a company's restructuring. To paraphrase a saying about politics, "The personal becomes the professional." His or her management may change, and/or his or her job duties may change definition or become ambiguous. Either fluctuation can cause significant problems with the job performance of a person with HFA. The issue for the person with HFA is that he or she must now determine how the social rules have been revised; he or she must resystemize. People with HFA tend to function much better if they are allowed a clean start with a new manager; they seem to intuitively understand that many of the social rules in their work environment will be reset. However, if only a partial reset occurs due to a change in responsibilities, or more importantly, the change in the expectations of management due to a personnel change or shift, the person with HFA may become confused as he or she tries to determine which rules continue and which rules change. The study participants who discussed events after a non-voluntary change of supervision had trouble after the change, to the point that several of them lost their jobs or needed to change positions within the company. David summarized the experience:

David: Hmm. Change, for me, hasn't really been a problem.

Researcher: Interesting.

David: If I initiate it.

Researcher: What if it's foisted on you?

David: Not so much. (chuckle)

Ford best described the experience:

Ford: Guess what happens when you're terrified of change and you can't realize that everything's about to go belly-up in your current position?

Researcher: And that's happened to you.

Ford: That's how I wound up in [the division which laid him off]. I should've moved on from [that division] long before that. I should've known that it was going belly up. I should've known. And see, that's the other thing. Here, here's...Asperger's people, what do they do to compensate? They continue to try and adapt.

Researcher: To the current situation.

Ford: To the current situation. They don't find a new one. They continue to try and adapt to the current situation. It wasn't gonna help. It was never gonna help. There was nothing I could do to adapt to that situation. The situation had already...an opinion had already been formed. A mass opinion, a collective opinion, had already been formed about whether or not I was a correct fit for that unit. I couldn't read that that was going on. And I was...and that, in combination with my discomfort at the thought of trying to move somewhere else, stop me from doing it. So I wound up forced into a position that I didn't want, because it was the only thing available to me. Which I then ultimately failed at, because I lacked the requisite skill set to a) deal with the new boss, or b) like...you know, turn my head around and completely focus in a different direction. And...you know, c) I was still carrying the albatross from the previous position, and the 2.0 and the fact that a lot of the people that I was currently working with were people who did not get me at the previous place.

Researcher: Had you had that foresight to see gee, you know, [the division you were working in] is currently going downhill, what do you think you would've done?

Ford: I would've found another position.

Researcher: Where?

Ford: Within [the corporation].

If a person with HFA's job is restructured and the new job responsibilities are ambiguous or not fully known, the person with HFA usually believes it is the manager's job to determine the new responsibilities and convey the new requirements. Determining

the responsibilities on their own is not straightforward for many people with HFA, due to their difficulties in prioritization. Bill described what he needs if this occurs:

Researcher: If your manager does not know all of the new functions and requirements of your job because of a division's restructuring or other such corporate issues, what can he or she do to help you to adapt?

Bill: Give me extra time. Get, they can't get that information, and they should work on it, then I'm going to need either extra time or options. So whether that's the right thing. And, and perhaps someone taking into account, myself included, whether that's the right shift. So for instance if there was a restructuring and they're gonna drastically change a job I was gonna do, I would want to know more about it so to determine like hey, is this even a good fit for me. From taking into account my...my disability. And if, if it's a, you know, equal, then okay. If it's not, then perhaps something else needs to happen.

Researcher: What are some of the things that you would want to know if this occurs?

Bill: Well, I'd want to know about it when it happens. So I'd like to know, I'd like the status, who I'm reporting to, what kind of work I'd be doing,...you know, if I'm working with the same people or if I'm working with different people, if I'm working with the same or different technology. If the person, you know, what...how my skills may be used differently. So...you know, if I'm gonna have a new manager, making sure the manager knows how to communicate with me. So that's important.

Researcher: Okay. And if you got a new manager, because I know that working with a new manager when you get even just a division reorg...

Bill: Yeah.

Researcher: What's the information that you would want on how to cope with a new manager? Because I know personal styles are an issue.

Bill: For me?

Researcher: Mm hmm.

Bill: How to cope with them?

Researcher: Yes.

Bill: I'd like to know their communication style. I'd like to know what they expect exactly from me. So be very specific. There's going to be things that I want from them. But, this is what I...you're talking about what they expect from me?

Researcher: What is it that you would need to know from them to be able to adapt?

Bill: I mean, I think they would need to know how to manage me properly. So that's independent of this question, I think. But, they would need to know, okay Bill's an Aspie, he needs to be, you know, all the things I've talked about here, to accommodate me, that's things I want them to know and be aware of and take into serious consideration.

Researcher: Okay. If they don't know if you're an Aspie, how would they figure that out?

Bill: That's a good question. I'm not sure what the right way to approach that is. Whether it should be...myself, whether it should be HR...both. The previous manager, maybe, should do hand off. I think I would like to know a little bit about the process just so, like I make sure that the, you know, it's done with a positive approach.

Researcher: So it sounds like, you know, you need some time to explain how you need to be managed, without preferably divulging that you're an Aspie.

Divulging a Diagnosis of High-Functioning Autism/Asperger's

The study participants were asked whether they had or had not divulged their diagnosis to their employers. Those who had not done so were asked why not. Those who had were asked what outcome(s) they have seen from doing so.

Reasons for Not Divulging the Diagnosis. The four participants who have not divulged their diagnosis have largely not done so because they do not see a benefit. The two primary issues are: (a) that it will be seen as grounds not simply for not being promoted, but potentially for being fired, and (b) they do not want their diagnosis to be seen as a crutch.

- Bill stated, “Unless there’s a reason why you’d want to talk about it, then there’s no reason to. And in fact, there’s a negative connotation.” He believed it would be worth divulging if his suggested accommodations, such as specific help from his managers on prioritizing tasks and joint communication training with his manager, would occur – but only if it was necessary. He stated:

Bill: I’m not sure [what the advantages of divulging are]. I wouldn’t want to come across with a laundry list of, you know, six hundred something things that I need to get done for me. Because then to the manager I may come across as a... a prima donna. I expect my coffee at 8:00 in the morning...sharp. But...two creams, one sugar. But I would like to go and establish something open, saying, this is how I work best. [I’d like to be able to say] look, you can manage me any way you want, but if you want the most out of me, here’s how you manage me. And here’s how you get the most results. And the most effectiveness out of me and use me best. And if you think of all, you know, all the pieces that you have in your organization, this is where I’m best and I have the most effectiveness. And so really focus more on the positive things. So technical abilities...you know, looking at data, things like that, thinking up problems, solving problems, okay, those are whatever my skills are, or whatever...so the person with Asperger’s skills are, making sure that that person is kind of fit in an area which uses those abilities the most and uses their weaknesses the least. And so they have the most opportunity to succeed.

- Charles is debating whether this would be helpful or not; as he works in health care, he believes some of his co-workers already suspect his diagnosis. Overall, he does not perceive a benefit in discussing it. Like Bill, Charles also has concerns regarding stigma. He does not believe that telling people his diagnosis would improve his work life, and particularly does not want it to be seen as a crutch in his job performance.
- Gina had to divulge her depression; however, she has not divulged her Asperger's diagnosis. She would do so if it would help her interact better at work, particularly with her manager. She stated, "There's really no reason for me to tell him one way or the other, and even if I do tell him, it's probably half the people in here have Asperger's'! (laughter) It's not a big deal, you know? But I don't know. Only if it would help; there's really no reason to tell him otherwise unless I needed, because I can usually say if I need accommodations on the depression."
- Ian has no plans to divulge his diagnosis for very straightforward reasons that are unusual for a person with HFA: he is in a job with considerable social requirements.

Researcher: Have you divulged your Asperger's Syndrome to your employer yet?

Ian: NO! (mutual laughter) Oh no.

Researcher: That was a clearly, "Oh no, not gonna happen."

Ian: And I probably won't. Because we're not set up with to deal with Asperger's. I think that it would be perceived as a major negative, especially in a sales role.

Researcher: OK. Makes sense. Is there anything that would make you decide to divulge it?

Ian: Yes. If the company said, "We're going to include training on Asperger's syndrome to the rest of the company, and this is just as widely accepted as a physical disability." Something like that. It would have to be endorsed by the company.

Researcher: So it's the real perception here that it's not simply a disadvantage because you've got it, but it's a disadvantage of how it's perceived.

Ian: Correct.

Ian believes that if the positive signs of having a person with HFA as an employee were known, such as their ability to persist through a project or analyze information in useful, unusual ways, he would divulge his status.

Reasons for Divulging the Diagnosis. The five participants who have divulged their diagnosis have found the reaction to be mixed.

- Adam divulged his diagnosis to the human resources (HR) department and to his manager, who he had been assigned during a reorganization (which, as described above, caused problems in his job). He asked for accommodations, which were accepted by the employer but were not fully executed; the only accommodation which was performed was that he was given ten sessions of job coaching. For that reason, he does not believe that divulging his status was successful.
- David divulges his status "...when I'm going to have a lot of interaction with [someone]. Then I would explain to them, 'You must notice that I'm a little strange.' I explain to them that these are some of the things, sounds, for example, to my boss. She had no concept, because [NTs] don't understand." He initially divulged his status after his major medical event (which drove his diagnosis). He believes that divulging his status limits his career.
- Edward initially divulged his status when a corporate client he works with decided not to renew its consulting contract. The situation was explained above, in the "Office Politics" section of "Workplace Issues." He has also divulged his status to a different manager, who in turn, divulged to Edward that he had Asperger's. Edward stated, "Things couldn't go better from there. I just had to say a couple of words, and we just chuckled about all of the NT antics...we were on the same wavelength."
- Hank divulged his diagnosis to his manager, but not to HR. When asked why he divulged to his boss, Hank stated, "Because my boss is kind of my friend, too. And he said, maybe I should go to HR, and I said, 'I'm not going to make a big to-do to treat me differently, and I don't want to get fired from my job because of a condition I might have.' I don't know what accommodations I would need, and what if they can't provide those accommodations? It's confusing...I see my boss as somebody I can talk to, and I'm OK to let him know...I thought that if my boss kind of knew what it was, and why I acted the way I did, he might understand a little bit more and be maybe a little understanding about that.... [his boss has been more understanding,] especially when it comes to interpersonal communication."
- Ford is by far the most open about his diagnosis and has found it beneficial to tell the people he works with.

Researcher: What are the positive effects [of divulging]? Well, first off, what made you decide to do so?

Ford: Because not telling them didn't work.

Researcher: When did you start telling them?

Ford: About three years after my son got diagnosed and, and so I had already been comfortable speaking about it. And then I realized

that...my Asperger's, my mimicry...as I got more comfort-, as I got...not more comfortable. Comfortable is not the right word.

Researcher: Proficient?

Ford: As I gained a deeper understanding of the fact that I had Asperger's...And as I gained a deeper understanding of the fact that some of the things that I was fighting myself on were simply things that I was never going to win over. And that what I needed to learn was mitigation strategies, rather than eradication strategies. I also realized that...not being honest with my employers about it was gonna cause me more problems than being honest ever could. If I didn't tell them why I was behaving strangely sometimes, they were just gonna make assumptions. And those assumptions could include anything from geez, what an asshole, to I wonder if he's on drugs. So I did a cost benefit analysis. I did an ROI [return-on-investment analysis]. I applied the same lessons that I had learned in the workplace to my personal life. And I realized that while there was some risk involved in admitting to the fact that I had, um,...that I thought differently than other people, there were also some, some, some...wildly, fantastic benefits. And it, it didn't hurt that, you know, Time Magazine and, and you know, it was all over the media, for God's sake, everyone in Silicon Valley is [*sic*] Neurotypical. Um, so...I just couldn't see any reason...I couldn't find any benefit to, to pretending like it wasn't happening.

Researcher: Have you had benefits...what have been the pluses and minuses of doing so?

Ford: Shut up Ford. Really. I mean, that's a huge benefit for me. That's is a fantastic...you know, once, once you've, once you can get to the place where you realize that you're gonna have some disruptive behaviors...And it's gonna be very hard for people to deal with them, and...no matter how hard you try, they're still going to happen. It's still going to occur. I can mimic as much as I can mimic until I can't mimics no more. And...so...being able to have that honesty with your peers, you know, sometimes I get going. Sometimes I get rolling...One of the things that I'm positive I'm gonna do when I get my chance to be an [full-time employee] again, is when that manager hires me, they're gonna know what they're getting. I'm gonna make sure. Because I don't ever want to be in that situation [where they don't know] ever again. [I'd] rather you didn't hire me in the first place. But I will make it very clear up front that there are [social activities] that I don't go to, [and other issues specific to being an Aspie.]

Throughout American society, there are positives and negative reasons and outcomes to divulging a diagnosis of medical problems. The stigma is typically even

greater when discussing a psychological problem. Some level of benefit has been experienced by the participants who have divulged. However, it is still perceived by a number of the participants as a career-limiting issue.

Frustration with a lack of understanding of the disability by their peers.

People with HFA often feel frustrated that co-workers actively help people with more obvious disabilities (e.g., blindness, paraplegia) and are likely to feel are frustrated that others do not appreciate their disability, which is not readily recognizable to people without training. People with HFA may be afraid that divulging their diagnosis will either: (a) brand them in a negative way; (b) cause people not on the spectrum to resent the imposition of personal needs upon them; or (c) be futile, because even if a person who is not on the spectrum is understanding, he or she are not likely to know what how to accommodate the needs of the person with HFA. Edward gave an example of a frustrating situation:

Edward: I wonder about my hearing. My hearing is perfect. Having said that, when I get into places where lots of people are talking – [my company] likes doing sessions in auditoriums, and all sitting and chatting. I can pick up all the conversations, which is great if you're not paying attention to the conversation you're having, but is horrible when you're actually trying to listen to the conversation you're supposed to be having. So on that aspect, and sometimes I just say, "Can we sit somewhere more quiet, so I can focus on you?" "No, no, this is fine, this is a great environment." No, it's not!! But you can't do that; I've already tried. If somebody's deaf or blind or whatever, they'll bend over backwards to help that person, because it's visible. It's not visible for us. But I don't want to walk around with a [soundproofing headset on all the time],

Ford expressed a similar sentiment:

Ford: I really need my manager. The interesting thing that needs to be solved is that when, when you hire somebody in a wheelchair, you know what you're getting. When you hire somebody...on crutches, you know what

you're getting. When you hire somebody with Down's Syndrome to bag groceries, you know what you're getting. You do. It's right there. It's out in front for everybody to see. When you hired somebody who has high-functioning autism, or depression, or alcoholism...it's not...All right? So somebody with severe depression, or somebody with, with high-functioning autism, both of which I have. It's not obvious. And I've been told by numerous people in the community that I hide my autism pretty well, that it takes even an experienced professional a few minutes to go, oh, there it was. Aaah, I see it. Peek-a-boo. So...imagine your surprise as an employer, when I've been working for you for three months and I don't have...any protection under the law. And I come to you and I finally say, well, you know, I got this thing. You know, it may cause some problems. I don't mean to. And, and I just want to give us both a heads up so we can get ahead of it. Right? Because we live in a society that looks down on mental health issues and treats people who have them as just not being able to cope. We'll look at somebody who's got serious depression...somebody like me who...poor son of a gun, the meds don't work. And we'll go...well, why can you just make yourself happy?

Researcher: Because you can't.

Ford: I don't know [why they do it]. Why don't you ask Susan to get out of her damn wheelchair and walk? What a stupid thing to say [about mental illness].

Because of the stigma of mental illness, people with HFA may not use all of the accommodations available if they believe that requesting or using the accommodation is too obvious. Gina gave the following example.

Researcher: [Because of her sensitivity to scent, have you asked for], maybe having an office and bringing in an air purifier.

Gina: Yeah, sometimes this is actually one thing that I've thought about, not the filter, but sometimes I use aromatherapy at home. But I think that would be too invasive for the other people. I always was too scared to do anything like that. But I think things like that make me nervous, because I actually also have an SAD light because I get very sleep in the mornings, in the gloomy winter mornings. So I brought one in, and I feel very self-conscious about it. And I feel really self-conscious about having all these weird air purifiers, even if it might help me. I don't want people asking, like getting all offended or taking it personally about all this stuff, it's like, "Do you think I'm smelly or something?" It's "What message am I giving off?" It sounds like the situation which you were describing, it was a mutual thing, but for me I don't know if anybody else cares about the

guy's aftershave or not. Even smell it in an office scenario. It's just me being...I just have certain things that I have aversions to, like oranges or citrus. I just can't stand that. Other things are fine. I just get nervous about bringing in things that are accommodation-y like that, like having weird stuff at my desk. I even feel weird about having certain [things]. I have a certain cushion on my seat for my back. I felt weird about that even. So I just don't want people to question my judgment on me, because they don't understand why I have it. Because I've got questioned about the light before and I get nervous, because I don't want to say, "Yeah, I've got depression," or something. I'm just, "it's just to help me wake up in the morning," which is half of why I use it, but not the whole reason.

Reaction to Major Employment Lawsuit Regarding Asperger's

The first major lawsuit for accommodations for a knowledge worker with Asperger's occurred in 2011 (Sorrel, 2011). Martin Jakubowski was a medical resident in internal medicine at Christ Hospital in Cincinnati, OH. He had previously been a resident at a different (unnamed) hospital that had let him go. While at Christ Hospital, a work review graded him as having good medical knowledge. It also stated that he was unable to perform all of the work for his assigned patient load, and had difficulty with communication which caused him to give "dangerous orders," although he had not harmed a patient by the time of the review. The director of the residency program suspected Jakubowski had Asperger's syndrome, and ordered a psychological examination.

On August 24, 2007, Jakubowski was notified that he had failed the inpatient rotation of his residency, and his status notice noted that he had concealed an earlier failed residency. On August 25, 2007, he was told that he was terminated from his residency. Independent of the termination, he learned that he had been diagnosed with Asperger's syndrome.

Jakubowski appealed the termination and proposed accommodations, such as communication skills training and notifying other staff members of his condition. The hospital said that it did not have the resources to comply with his request, and offered to assist him in finding a residency in pathology, a specialty with few direct interactions with patients. Jakubowski sued the program under the Americans with Disabilities Act. The court ruled in favor of the hospital, noting that "it is up to the one with the disability to propose an accommodation and prove that it is reasonable. That person must also show

that he or she is capable of doing the essential job requirements, with or without accommodation.” The court stated that Jakubowski’s list of accommodation, that asked for “knowledge and understanding,” did not give enough detail to explain how his communication would improve. The ruling stated, “Because the accommodations – that Jakubowski had the burden to propose – do not address a key obstacle preventing him from performing a necessary function of a medical resident, he has not met his burden under the act of proving he is an otherwise qualified individual for the position.”

The participants in this study were given a theoretical question:

Suppose your employer believed that your social skills issues caused too many problems with your peers and customers to keep you in your position. The employer offered another job comparable in pay scale and responsibilities which would lower the amount of contact you would have with other people, but was not in your primary field of interest. Would you take the offer? Why or why not?

After receiving an initial reaction, they were then asked, “What if it meant the end of your employment?” After responding to that question, they were then given the details of the case, and asked to comment.

The reactions to the initial question were not uniform.

- Adam said the new position would likely be acceptable if he would enjoy the intellectual challenge of learning a new, but related, field.
- Bill’s main issue was if the job was truly comparable, or if it was a “make-work” position designed to drive him out of the company.
- Charles believed that the employers’ needs were understandable, noting, “Why do we have to run to a lawyer every time, about everything in the world?” He stated that it was unfortunate that the issue could not have been addressed in another way earlier.
- (David’s comments were not included because the battery of the audio recorder ran out of power at this point in the conversation, which was not known to the researcher at the time.)

- Edward believed that he would have difficulty changing to an area outside of his primary interests. He said that he would have changed companies to try to do the job elsewhere. He used the following analogy regarding insurance after a car accident:

Edward: That's typically a viewpoint of the judge. That's like saying, "You know what? This car is seen by other people as a much more posh car, so therefore, it's your perfect replacement. I'm offering you a BMW for your Volkswagen," and any court of law would say, "That's a fair deal; you're even getting something better." But basically, you have driven that Volkswagen for your life. You've worked for that Volkswagen. You *love* that Volkswagen. You know it inside and out. It drives left and right. It does click-click-click when you push that button. So basically it's discrimination, what they've done to the guy. What they should have done is say, "How can we make you do your work, you pride and love, the stuff you've worked for all your life, your dream ambition, and make that more feasible?"

- Ford believed there were too many circumstances to determine how he would react, such as the relationship with the manager, and the level of potential intellectual interest in the new job.
- Gina's decision would be based on the type of interactions she was having with her peers. If her peers were not too confrontational and the work was intellectually engaging, she would want to stay. However, if her peers were highly confrontational, she would want to leave in order to lower her anxiety.
- Hank would have refused the offer if he liked the intellectual challenge of his current job, largely because he would be nervous that he would not know how to do the new job. However, if it meant the end of his employment, he would confer with his wife about whether he should take the job or seek a new job.
- Ian would have initially refused the offer, because he feels like it would be forcing an option on him that he did not want. He would also be upset about the issue if he was meeting the performance requirements of the position. If not taking the offer would cause him to lose his job, he would take the offer due to the poor economy, but would begin looking for another job with a new employer.

The reactions to the question after the lawsuit's details were given were also varied.

- Adam believed the ruling was appropriate, as he has had circumstances when he has asked to be moved into a new field in order to lower the amount of contact he has had but been denied the request.

- Bill wondered if internal medicine was a good fit originally, noting, “Not everybody gets to be an astronaut.” He believes that due to social issues, some jobs may simply be inappropriate for people with HFA, also stating, “We’re not gonna be politicians. They’re not going to make accommodations for us there.”
- Charles, who works in health care, stated, “I can understand it coming to that. I would have hoped that it wouldn’t, for the same reason that I don’t want to say I have Asperger’s and use it as an excuse. I want to learn skills and adapt. I think that’s the better approach. I can’t remake the whole world. I think this person should have maybe adapted his behavior, if it was that bad. Personally, I’d rather have a competent physician. I don’t care what his bedside manner is.”
- Edward resides in the EU, which has different disability laws than the US. Edward believed that social skills training and other accommodations should have been offered, based on his experiences working with a peer who is blind:

Edward: Part of my job is writing papers and doing presentations. I’ve got a blind colleague and I can go in my head, “How on earth does he do his job?” Whenever we do a presentation and he’s present in the room, we have describe it; we can’t put too many words [on the screen]; and it hampers. We just say, “Well, OK. You know what? He can do his job. He’s got the intellectual capability; he’s very astute; he’s very insightful. He can obviously do the job. So therefore, we need to give him the means to be able to do his job. That equalizes, much to [unintelligible], “Why on earth did we allow this person to be hired?” Well, we do, and because we do, we have to treat everybody by the same measure. That would mean for the Aspergic person, we would have had to propose that, and even possible to the point that we would have a nurse with him and his patients.

Researcher: OK.

Edward: Fair is fair. Equal measures for everybody. That’s what justice is about, isn’t it?

- Ford’s reaction was “Everybody handled that in a crappy way.” Ford believes that Jakubowski likely knew that he had social skills issues, as most people on the spectrum know that they have interpersonal communications problems even before the diagnosis. However, he believed that the issues should not have gotten to the point of litigation.
- Gina believed that the hospital should have tried accommodations before firing him, such as giving him social skills classes. She does not believe that an ultimatum was appropriate, but also believes that he probably knew there was a problem.
- Hank stated, “Objectively, I would say knowing what I know about people with HFA, everyone has – maybe not everyone, but most people have a deep subject

matter interest. It starts out with animals or trains or whatever. For me it was computers. I think that if internal medicine was that particular Aspie's area of interest, it would be like ripping off an arm, and I can totally understand. It's not what he wants to do. I would disagree with the assessment of the court." He also discussed how if going to the new job meant losing the portions of his job that he likes the most (new ways to implement the product at customer sites), and only had him working in a cubicle as a programmer, he would be likely to leave.

- Ian concurred with Gina, believing that other measures, such as social training, should have been performed. Because of the necessity for social skills within the doctor-patient relationship, he understands the business issues involved.

The primary conclusions are:

- If an employer is planning to move a person with HFA to a new position in order to minimize social contact, the new position needs to be a close enough match to the person's intellectual skills and way of using those skills (e.g., some people enjoy programming, while others prefer a more interactive job) to engage the person with HFA. Otherwise, it is likely that the person with HFA will not be successful in the new position, or will reject it altogether.
- Other areas of compromise might have been considered before Jakubowski was fired. Specifically, social skills classes or an additional assistant (analogous to a sign language interpreter for someone who is deaf) could have been offered.
- Jakubowski likely knew that he had social skills difficulties before his diagnosis, and should have taken this into consideration in his selection of a career path, including better understanding what accommodations would have been useful.

The Benefits of Hiring a Person with Asperger's

For all of the issues involved in working with a person with Asperger's, he or she is often the person best suited for a job. People with HFA offer a number of core personality features specific to their thought process which can be of great benefit to an employer, and make the extra work needed to manage them worthwhile.

Loyalty. Loyalty is both intrinsic in people with HFA as well as earned. Their need for stability makes them naturally prone to stay in an organization, even if they are having difficulty with the social issues in their job. If they are also being treated well by their manager and in the type of work they are doing, they are very happy to stay in a position indefinitely, and will not job-hop for a larger salary or to join the latest "fashionable" company or the existing company's new project. Bill summarized the issues:

Bill: Make accommodations; we'll be loyal. We're employees for life, which are good, because loyal employees are cheaper. You don't have to recruit. You know, there's a lot of other nice things about having loyal employees. If Aspies are happy, typically they'll stay until you lock them out of the building. ...Getting new customers are expensive. I mean, I, I read about how Groupon...I mean, Groupon is ridiculously expensive for what they do. But, because it's the only way to get a new customer, it's cheaper than advertising. Getting a new employee is even more expensive. It's ridiculous. We've been looking for employees for months and months and months for our group. [We're] not having any luck. And that's not including all the time we've wasted with interviews that have gone south. I mean, so if you get an Aspie and you treat him halfway right, and you take into account their accommodations...you're gonna do pretty well. And they're probably gonna be less likely to look then, I think a lot of NTs who...you know, are political, always looking for the new political thing and, and, you know, aiming to be in the next big group or something like that. If you're an Aspie, you find a manager who [finds] work that you like doing, a manager who takes all that into account and manages you well

and gets you a roughly low stress workplace where you can just do your job and a job you like, those aren't that common. There aren't that many of them. So it's a good way to get a loyal employee.

Ian described it in this way:

Researcher: What are some of the other things that you look and say, "I bring to this to a job that an NT doesn't, that I know I do much better?"

Ian: Probably loyalty. Sometimes I'll hear people criticize a manager or a policy in the company, and I tend not to go that far with the criticism. I tend to have a sense of loyalty. I'm not out job-hunting, whereas I know a lot of NTs are; they're constantly circulating their resumes. I think the loyalty, the dedication piece is really important. I think, too, that just being a calming presence in a sea of chaos. I've heard that as well. My manager has said to me, "I'm glad that you take a logical approach to things, and you don't get too emotional at work, too fired up about things."

Deep Technical Understanding of Their Organization's Knowledge Base.

People with HFA believe they will likely understand the technical issues behind their work at a deeper level than their non-autistic co-workers. Because of their need to rely on their cognitive, rather than their emotional, abilities, people with HFA want to master information to a level of detail that would likely be considered overwhelming by others. The people with HFA actively want to assist their co-workers by sharing their knowledge. David stated, "If you wonder why we can't stop talking about our subject matter, it's because we have all this great information that we want to share with you!" Because people with HFA see the sharing of information as a key interpersonal value (rather than the sharing of emotions or life stories), they believe they are able to be team players by providing their co-workers with needed knowledge. Adam described this skill:

Adam: I'm...I feel I'm strong in learning new processes, if I'm given enough time to learn them, because I will thoroughly understand what it is, rather than just knowing enough to get by. I see a lot of people who just know enough

to get by, who when asked any kind of support questions after that, they don't have the knowledge, so they're always falling back on somebody else. If we've got a situation where support needs to be done, I know a lot about the situation, even if it's outside of my area, so that I can then help them to understand what parts are our area and what parts are somebody else's area.

Ian gave a concrete example of training his new manager:

Researcher: As happens often with [corporate] restructuring, you get a new manager foisted upon you. How do you function when that happens, versus one where you've interviewed within a company and sort of had a match?

Ian: I'm dealing with that, too!

Researcher: Oh boy! (mutual laughter)

Ian: Here's what I do, personally. Because I have this trait of wanting to be liked, and fit in and see other people succeed, I actually take it upon myself to train my new manager. (laughter) So here's the thing, and you probably have heard this before. I think that I perform above my, or my skill set is above where I'm at career-wise, in terms of grade level. I could be at a higher grade level. So when my new manager came in, and she was forced upon me, I said to her, "Look, I'm going to do what I can to make sure you're successful at this role," and I even walked her through a training course on how we do business with [big chain store]. And I think part of it is that I have the need to be liked and accepted, and I think that's one part of it. The other part of it is that I have this sense of fairness that everyone should be treated fairly and given a chance to succeed.

Researcher: So it sounds like doing some pre-emptive work helps a lot so she knows where you're coming from.

Ian: Yeah. Yeah.

Researcher: Makes a lot of sense.

Ian: You just made me think of something. I'm not conscious of this, but I may have also, I may do this also to position myself to avoid any kind of conflict in the future.

Once They've Managed a Subject, They Can Act On It More Quickly Than People Not On the Spectrum. When a person with HFA gets to the point where he or

she has internalized the material in his or her area of intellectual fixation, he or she is more rapidly able to solve problems which require knowledge of the material, to the point where his or her style of problem solving may appear intuitive to a person not on the spectrum. It is not. It is based in a deep logical understanding that the person with HFA can describe when given the time to do so. Bill explained:

Bill: I think the key is that we may be a little slower hitting the ground running. But, once we start running, we can go pretty fast. I don't know if everybody's that way. But...you know, sometimes it...you know, the change process is a little slow. But, once we've gotten that, once we've been able to adapt, we'll go pretty fast. And we may go faster than the NTs. So, you know, step out of the way once we're onboard. So there's, there's a, a, maybe a small cost upfront, but the (unintelligible) benefits are pretty high.

Perseverance. People with HFA will work on a problem until it's solved. They accurately perceive that they complete problems that most people would give up on, likely due to the need to know arcane knowledge in order to solve the problem. A person with HFA will perceive the problem as an intellectual challenge to be overcome in order to re-affirm their cognitive skills. At issue is if all problems need intense effort and determination. The concept of "good enough" is a difficult one for people with HFA, because that requires intuition in knowing what level of complexity or simplicity is required. This determination is why people with HFA are frequently diagnosed as having obsessive-compulsive disorder (OCD). While it may look similar, the underlying motivation is different; the person with HFA is trying to solve a problem, while someone with OCD may not know the underlying reason for his or her behavior. Ian describes it in the following way:

Ian: The ... thing that I have going, or I should say trait, is that I don't stop. When I'm given a project, I will knock down walls to get it done. My boss even says that about me: "If there's something that we know has to get done, we're going to give it to you, because you will leave no stone unturned to get it finished."

Adam described his mindset:

Adam: Once I know for a fact what the result needs to be, I'm dedicated towards it. I will work really hard to get to that result...I'm willing to put myself into that product, rather than [thinking that] this [job] is just a step towards another goal, a personal goal, career goal, or whatever. [My mindset is:] I've got my mind on the product, and I want to make the product good.

Gina described her mindset this way:

Gina: [When asked what her strength is] I think it's because I'm so damn interested in what I'm doing that I focus. Whereas if you hire [an NT], they might get frustrated, give up, not have the focus if there's a hard problem. As uncomfortable as it is for me with hard problems, I'll just keep going, until I find the solution, just because I just need to find the solution intellectually. I feel like when I was hired, it was really a huge upward battle the first month, and then completely it was smooth sailing from then. I worked really super hard, and then something clicked, and it was smooth sailing. So I don't, even when things are hard, I feel like I have even if I'm not like that personally interested in the bug, [thinking] "Who really cares?" if Facebook isn't logging, but I'm thinking, "I want to find why it's happening! Why?" It's just getting the satisfaction of knowing and in learning for next time that it's a good thing to keep in mind for next time. It's really weird it happened this time, but it's good to know for next time. It's really persevering. So I think that's a good quality.

Superior Ability to Find "Edge Problems". People with HFA tend to find detail-related potential problems in an issue long before their co-workers do, because of their depth of body of knowledge. A person with HFA may have difficulty in understanding an overall problem; however, if a larger system is being designed, they are likely to find the potential conflicts in the system long before a person who is not on the

spectrum would do so. These types of problems are known as *edge problems* due to the infrequency of their occurrence placing them on the edge of normalcy. The ability of people with HFA to find these problems may prevent long-term problems for their employers. Ford stated:

Ford: An Asperger's person can look at your stuff and see it in a way that you never can. Never would have. Wouldn't have imagined thinking of it that way. They can see your woods. They can't see their own woods for their own trees.

They Will Go the Extra Mile for Their Team. Another aspect of being a team player is a person with HFA's need to automate processes for everyone in their work group. This often occurs as a beneficial by-product of the extra time they take to learn a body of information. If a person with HFA perceives that he or she can create a tool which both helps him/her learn how to do their job and can be used by multiple people, he or she will take the time to create the tool. This process was described by several of the study participants. David described one of his recent experiences:

David: I was hired to reverse engineer line of business applications and write the functional and technical specifications that should have been written before anyone ever should have coded.

Researcher: In that special [company] kind of way, yeah. [mutual laughter, because this is a known issue to employees]

David: Yes, yes, yes. "Hey, sure. No problem." But then I ended up being the utility guy here, too, just on all kind of different stuff that they needed doing... [When discussing a website that his entire team used for document management:] None of it flowed. Everything is indirect. It doesn't behave as one would expect. It isn't consistent within itself. It's so ad-hoc, it's so easy for you to throw stuff together that people throw stuff together and then they don't realize is that other people may have to look at it and try to understand it or that, "Where did I put this stuff?" You know? There was no time component. Documents that are way out of date are still in there and available. You read this thing, and it's only after you read the thing that you're, "Oh well, this is way out of date and wrong." So they

reorganized our team, and I said to them, “Let me take this.” So I just rewrote the whole thing, so that it matches our team structure. The site matches our team structure. The pieces within that match our end-to-end process. I worked with a lady who was in charge of our process. And so now the site and end-process all make sense. I can tell, because people actually use it.

Researcher: OK. Big difference.

David: And they’re staying within rules. They’re staying within the structure, because it just freakin’ makes sense.

Ian described how his love of spreading knowledge helps him as a team player by using his own initiative to help out his group:

Ian: I realize I didn’t answer one of your earlier questions. I didn’t answer fully, and that was what I like most about my job. There’s a teaching component that I love about the job.

Researcher: What does teaching do for you?

Ian: Remember I mentioned before that I tend to work better with people who view me as a mentor?

Researcher: Yes.

Ian: Well, one, I just love teaching. I love seeing a young employee grasp knowledge and excel in the company. The other is that it just makes me feel good, like I’m adding value and that I’m contributing to the world when I teach... In fact, I even designed my own training program. It’s called “[Big Customer] 101.” It’s a module that I take new employees through when they start on the [Big Customer] team...

Researcher: Nice.

Ian: ...regardless of who they report to. I spend the time on my own, just to walk them through this training program so that they can fully and quickly understand just how [Big Customer] does business.

Some Jobs Appear To Require the Detail Given By Someone with HFA.

People with HFA naturally attend to detail in order to help understand the systemized knowledge that they work with. The participants who were in the computer industry need it for understanding software. Charles described his experience with other pharmacists:

Charles: There's no question about it. Pharmacists are on that [autistic] continuum, absolutely no doubt. If you're not, you're not even going to get through pharmacy school.

Researcher: Wow. That's a very strong statement.

Charles: Looking over the past 30 years, through these new glasses I've found [his recent diagnosis], and yes. I think about all the pharmacists I've known; many through the years. They all have this component. You wouldn't make it if you didn't.

When a person with HFA works for you, they actually work for you.

If given a challenging task, people with HFA will waste little time playing solitaire on the computer or socializing on the job. Such activities generally do not challenge their intellect. They will surf the web when they are feeling high levels of anxiety and need to temporarily disengage in order to prevent a meltdown (decompensation), but this does not occur when they are feeling supported and capable of doing their job. Edward stated:

Edward: I think you can mitigate [the perception that you'll spend more time needing to manage an Aspie] as well, because the time that's wasted in the corridor with the gossip from the NTs and the speculations are enormous as well. Their productivity sucks then as well, you know.

The Mixed Blessing: They Will Find Technical Flaws in Their Peer's

Knowledge

Because people with HFA tend to detail and strive to understand knowledge deeply, they will ask questions which require a great deal of knowledge depth to answer. If they ask a peer a deep-knowledge question, and the peer has been getting by with superficial knowledge in a job which requires depth, the person with HFA will quickly detect this disparity. The co-worker's value as a knowledge resource – or lack thereof – will quickly be exposed. Ford described the process:

Ford: So I think...Asperger's people can just bring an amazing amount of...left-handed insight into what's going on in your business, and what's going on in your staff, what's going on around you. And nothing, nothing, *nothing* exposes people in your staff who are intolerant or stupid quicker than have somebody who has Asperger's on the team. You'll know immediately...An Asperger's person will struggle greatly, or if they're aware of themselves and hopefully they are by the time they get a first job, they will struggle wildly to adapt – to mimic. But the people on your team who cannot struggle back, [they] are probably some of your weakest links.

The ability of people with HFA to quickly determine the depth of knowledge of a peer is useful in a group in which arcane knowledge is necessary. The issue is that people with HFA do not perceive that all of their co-workers need to know technical material with the same depth which they do. For example, they may not understand that a sales representative's skills are more interpersonally oriented, and that the sales representative can call on a more technical person for detailed knowledge. Consequently, people with HFA may not think highly of people whose jobs need different skills from theirs.

Summary of Benefits

Two participants gave excellent summary statements about what they, as people with HFA, uniquely have to offer.

David: If you give an Aspie a clear expectation of, "This is what the end result needs to be, and this is the time by which the end result need to be," and like any good manager, you make sure that those times are it, you don't have to manage them. We work on our own. We are invariably hard working. We are invariably excellent workers, in that the results that we turn out, if they're not really, really good, we're not happy with them. I don't think that just because we're autistic or just because we think differently that we require more management. We're not morons. We think differently, and it's just a different skill set for the manager. They have to be just like the valuable skills now in program management: clear specifications and clear timelines and clear...just be clear in your own mind as a manager, and then express that clearly such that the Aspie can

understand. Don't give them a list, because they're not going to be able to listen to a list. If there's a list involved in the tasks, or the things that need to be accomplished, give it to them. And let it go. I think that we require less [management]. We certainly don't require the quality control. That's huge.

Edward. [When asked what an Aspie offers that an NT does not as an employee:] *Loyalty!* (laughter) Absolutely! And why don't they just do something for it? Loyalty. I think there is a passion. Steer that strength. Steer that passion! Flipping heck, we would move mountains and not necessarily ask any extra questions about it, once we're on the task. So the passion and the obsessiveness, which is a good factor in certain areas. The attention for detail, the thinking out of the box. We must be smarter in some areas, or at least on average more smarter, I think. I hate saying that. But it's one of our best abilities as well. What else...(pause)... I'm not sure we waste time on Facebook during working hours, and go shopping and all that kind of stuff during working hours. I mean, everybody's different. We've got something called utilization, which is how many hours you're billable. In times of recession, I'm almost always in trouble, and you know why? Because I only bill, I only put down the hours for which I've worked for a customer on something. And I'm being extremely honest about it. If I get interrupted, that hour is not going for that customer. If somebody else was doing maybe only a two-hour job, two hours of real work, in an eight hour day, he would book an 8-hour day. We only book the real work, and we will strive to work the whole day. So in some ways, we are much more effective and we're harder workers.

Conclusion

The nine high-functioning people in this study, who have been diagnosed with HFA and who have the cognitive abilities and adequate social skills to be in the top quartile of American wage earners, have intellectual strengths to offer in the workplace. However, they must deal with their emotional and cognitive deficits while navigating their career paths. Their attention to detail and deep specific knowledge account for much of their success in certain careers. At the same time, their difficulties with interpersonal relationships mean that they often experience difficulty with the social interactions and prioritization skills required for job success, particularly for promotions.

Summary of Findings

Perhaps the most striking demographic result found in this study is the nearly perfect correlation between stability of childhood environment and academic achievement. The less stable the environment in the subjects' youth, the less likely they were to achieve scholastically; the more stable their family of origin (particularly their parents' marriage), the more likely they were to complete higher education. The one exception to this finding is the subject whose parents divorced, but whose single mother mandated that he interact socially with "a wide variety of people" throughout his teenage years, which likely provided him with social skills that he otherwise would not have gained.

The difficulties the subjects face in the workplace can be correlated to not only their psychological issues, but how these issues affect their sense of self-worth. Because they have difficulty grappling with interpersonal skills that rely on the emotional interpretation of others' actions – which is one of the core issues of theory of mind – the

subjects place a great deal of their self-worth in their ability to navigate their jobs using intellectual prowess. They define much of their self-worth based on their jobs, since they have difficulties finding self-worth in emotionally-based relationships outside (and inside) of their jobs. The relationships outside the workplace of most people (either with or without HFA), such as friendships, typically are not based primarily on common intellectual interests. Although common intellectual interests may start a friendship, more emotional interaction is typically needed to sustain it. People with HFA perceive that the primary requirement of job success is successful intellectual interactions, and believe that cognitive/intellectual achievement should be the basis of an even playing field at the office. When emotional and interpersonal skills are required for work success, they are typically flummoxed, because they believe that the “game,” like that outside of work, has rules at which they cannot succeed.

Workplace success is typically defined by people with HFA as intellectual challenge, achievement, and the recognition of achievement. A lack of stimulating problems to solve will typically cause frustration to people with HFA, because it keeps them from proving their self-worth. However, even though they want difficult work that expands their intellectual capabilities (and thus their self-worth), they may have difficulty with open-ended problems that would be considered positive challenges to people not on the spectrum, because such problems may set them up for failure, either in their own eyes or in the eyes of their managers. An example of a challenge that would appeal to people with HFA would be solving the astronauts’ problem on the Apollo 13 mission to the Moon. All of the parameters were known, as was the desired outcome; the issue was putting the two together. People with HFA need explicit information about a task’s

requirements due to their difficulties in generalizing and interpreting context. At the same, they feel intellectually insulted if they are given too much information by their managers regarding how to do the job, due to the assumption (based on problems with theory of mind) that everyone thinks as they do, and that their managers can intuit how much they know. This communication differential can lead to anger and resentment in people with HFA, which (in at least some cases) can cause decompensation (“meltdowns”). Conversely, it may cause a manager to believe that a person with HFA is less skilled at his or her job than a peer who is not at the spectrum, even if the peer has lesser intellectual skills.

Sensory issues related to autism can cause difficulties with the physical environment for people with HFA. All of the study’s participants had some form of sensory processing disorder, such as the ability to hear sounds or smell odors imperceptible to others, or to see the flicker in computer monitors or fluorescent lighting. These difficulties can cause emotional strain and physical problems. However, due to their social difficulties, people with HFA tend not to seek accommodations for these issues, believing that it would make them appear even more peculiar to others who are not on the spectrum. There is often a sense of resentment by people with HFA towards people with more visible handicaps, such as being blind or missing a limb, because these issues are more easily understood and accommodated by other people.

The inability to determine subtext and context causes multiple workplace issues for people with HFA. This deficit may cause people with HFA to make verbal faux pas in meetings, because they may not understand the appropriateness or appropriate quantity of comments. When combined with executive functioning difficulties, high functioning

autism can lead to problems with task prioritization, which is a skill required for knowledge work due to the non-repetitive nature of such work. It is interesting to note that two of the study participants learned to overcome prioritization issues by working in jobs requiring this skill (food service and hospital pharmacy operations); this finding may show that other people with HFA can learn this ability when placed in an environment where failure to prioritize correctly has immediate consequences.

Because of their difficulties understanding subtext and context and in prioritization, people with HFA are often intimidated when speaking to their managers. They are often afraid that they may not appear to their management to be as intellectually capable as their peers. They are often afraid that they are asking too many questions or that they ask questions which they believe would not be asked by their peers who are not on the spectrum *even if that is not the case*. People with HFA may find it particularly thorny to advocate for themselves in tasks that are considered difficult even by their non-autistic peers, such as negotiating pay raises, because they may not be aware of their managers' emotional responses.

It is interesting, and important, to note that people with HFA tend to perform well when they are allowed to choose the manager for whom they work, particularly when they start a new job or different position in a corporation. The person with HFA recognizes that a new set of social rules need to be learned. However, when the management of a person with HFA changes while their position does not, for example, due to a reorganization or to a manager's promotion, the person with HFA frequently begins to have job performance problems. People with HFA have difficulty determining

which social rules have and have not changed under the new management. They are often not able to intuit how to please their new manager, particularly in prioritization.

A frequent issue arising at the annual reviews of people with HFA is the perception that their peers find it difficult to interact with them. This perception may be due to multiple factors, such as difficulties on the part of the person with HFA in understanding allusions made by their peers, in knowing how to answer requests by co-workers in a manner that is not perceived as abrupt, or because of “going down ratholes” during meetings. Occasionally, people with HFA may make disparaging remarks regarding the intellect of their peers who are not on the spectrum, due to self-defensiveness, frustration, and/or lack of executive function to restrain the remarks. They also often have difficulties with interruptions when they do their work; paradoxically, they often also have difficulty waiting for information, and feel they need to interrupt others in order to do their jobs.

People with HFA are often confused by the meaning of “being a team player.” Whereas most non-autistic people bond with their peers through social interaction, people with HFA tend to prefer to show their worth by helping their peers with technical/knowledge-oriented issues related to their jobs. Because of frustrations with sensory issues and social conversation, people with HFA find most team-building exercises to be useless at best, and frustrating and physically painful at worst.

Because of issues with both their managers and their peers, people with HFA typically find office politics to be a major difficulty in their professional lives. In general, people with HFA would rather be respected than liked, but if they cannot be

respected (particularly intellectually), they will likely find themselves frustrated with their job status.

People with HFA tend to take longer than their peers to acclimate to a new work environment. In particular, they want to know as much information as possible about the product or service with which they work, due to their need to systematize the intellectual information needed to do their job. However, the extra time they take will often make them more effective cognitively than their peers once they have internalized the information needed to work on the product/project. They learn best by doing.

Perhaps the most poignant finding of this study regards the coping mechanisms that people with HFA use when dealing with emotional and social issues in the workplace. People with HFA typically have profound difficulty understanding the emotional states of other people, because of their inability to interpret non-verbal behavior. They have been unable to learn unspoken rules of social interaction. Consequently, most of the way they learn how to interact socially is through mimicry, rather than through authentic feelings and expression. This further contributes to issues with self-identity and self-worth: People with HFA may not know how they would act differently if they were accepted as they are, because they may not know their own emotional state in a social interaction. The combination of not knowing social rules and not understanding who they are independently may lead to a sense of learned helplessness, which may produce a sense of despair.

The choice whether to divulge at the workplace one's status as a person on the autistic spectrum is a highly personal one. Among the subjects of this study, there was no consensus. The primary reason to divulge is if there appears to be no choice, because not

doing so is no longer viable. Subjects who have divulged their status have found mixed results, because the reactions by their managers and co-workers have varied. Those who have not divulged their status believe that it will reflect negatively on them, and also believe that divulging it may cause more problems than benefits in the way that they are viewed at work.

Study subjects also had mixed reactions to the outcome of an ADA lawsuit by a person with HFA who had sued to keep a job. Some of the study members believed that the employee who filed the suit should have known that he was inappropriate for the job; others believed that more should have been done by the employer to educate both the employee on social skills and the employee's peers on the employee's disability.

The subjects cited many benefits to hiring people with HFA. They believe that when they find a job where they are intellectually challenged and appreciated for their work, they are far more loyal to their company and specific manager than people not on the spectrum. They believe that their attention to detail and ability to analyze complicated information to solve well-defined problems makes them more effective at some professions than people not on the spectrum. They will persevere on difficult assignments long after their peers have given up, due to their need to demonstrate their intellectual capability and their need to help people in their workplace teams. They also believe that they contribute more to a company's finances than people not on the autistic spectrum, because they typically do not spend time socializing.

This study gave cross-validation to some of the literature for lower-functioning people on the spectrum. While many of the issues faced by people on the spectrum who need more living assistance appear different, the issues of anxiety, inability to read non-

verbal behavior, peer interaction, and other social issues are consistent with the issues in this study's subjects. The primary difference is that because of the study's population's overall high cognitive abilities, they are able to intellectually work through many – although by no means all – of the issues.

Limitations of the Study

This study has shortcomings, particularly in its range of participants. First, the majority of the participants were from the computer industry, although an increased prevalence of people with HFA among computer professionals is somewhat to be expected in light of research showing a link between engineering and autism (Baron-Cohen, Wheelwright, Stott, Bolton, & Goodyer, 1997). It is likely that there are other fields that require deep technical knowledge and low levels of social contact; it would be useful to ask this study's questions of workers in such fields. Health care fields where this might be the case are pharmacy, highly specialized surgery, pathology, and radiology. Lawyers in fields requiring deep technical knowledge, such as intellectual property or tax law, might also have a notable portion of workers with Asperger's. Accounting may be another area that attracts high-functioning people on the autism spectrum.

This study was not a random sample, as the participants self-identified. A control group was not included; however, in a qualitative study design, a control group is not as critical as in a quantitative study.

This study also had only one female participant. The ratio of men to women with Asperger's is currently estimated to be 5:1 (high probability of diagnosis) (Kim, Leventhal, Koh, Fombonne, Laska, & al, 2011). An interview with an additional female

would have made the gender balance of this study more aligned with the current estimated ratio in the actual Asperger's population.

Areas for Further Investigation

Further studies could be performed to probe the accuracy of the conclusions of this study. Specific areas for study include:

- A study exclusively focusing on women meeting this study's subject criteria.
- Quantitative research validating the demographic findings of this study, particularly the correlation between family of origin stability and educational achievement.
- Quantitative research validating the conclusions of this study, such as correlating Likert scale responses to statements made in the study (e.g., "I am afraid to divulge my diagnosis of Asperger's syndrome/HFA because it may be a factor for my company to decide not to promote me.").
- Longitudinal studies examining the findings between people younger than this population (majority in their 20s) and the population studied (majority in their 40s and 50s).
- An examination of definable, executable accommodations for this population, which would entail research into the legal issues involved.

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Appendix A

Wording Of Solicitation Notification

ASPERGER'S/HFA IN THE WORKPLACE STUDY

This study is being performed with the intent of writing a journal article for the management and psychological communities. Its aim is to explore and explain interactions with people on the spectrum to their management and peers.

Subjects should be:

- Adults over the age of 18
- Diagnosed with Asperger's syndrome or high-functioning autism
- Employed in a job:
 - That pays \$60,000 a year or more OR
 - Requires a master's or doctoral degree
- Preferably living in the Pacific Northwest

Participants will be interviewed for approximately one or two hours, depending upon the amount of detail. In thanks, participants will receive either a \$50 gift card to Barnes and Noble or a \$50 gift card to Dilettante Chocolates or a \$50 gift card to QFC.

To participate, please send e-mail to: aspergerdissertation@gmail.com

Appendix B

Brief Psychosocial History Questionnaire

Identifying Data:

Name: _____ Age: _____ DOB: __/__/__

(First) (MI) (Last)

Address _____ Home Phone: _____

_____ Work Phone: _____

E-mail address: _____

Employer and Job title: _____

How long have you been at this job?

How long have you worked in this industry?

If you have worked in another industry, what other jobs have you held?

Years Education: ___ HS Diploma (GED) (___) Years of college ___

College degree _____

Years of grad. School ___ Graduate degree: ___

Degree subject:

Years of employment: ___ Specific current occupation: _____

Handedness: Right (___) Left (___) Ambidexterous/degree: _____

Born in: _____ Raised in: _____

If you have a resume, please attach it.

Medical history

When, how and why were you diagnosed with Asperger's Syndrome/autism?

Do you currently have any treatment for your Asperger's, such as a therapist, medications, support groups, etc.?

Do you have any other mental health problems? I will read you a list; please answer yes or now.

Depression.....	No	Yes	Relative(s):
Anxiety:.....	No	Yes	Relative(s):
OCD	No	Yes	Relative(s)
Alcohol.....	No	Yes	Relative(s)
Dementia.....	No	Yes	Relative(s)
Epilepsy.....	No	Yes	Relative(s)
Developmental disorders	No	Yes	Relative(s)
Schizophrenia.....	No	Yes	Relative(s)
Suicide.....	No	Yes	Relative(s)
Motor disorders (Parkinson's, MS, etc.)	No	Yes	Relative(s)
Other:	No	Yes	Relative(s)

Is there any family history of a learning disorder (such as dyslexia) in blood relatives? If so, please specify who and what type.

Do you currently have any physical health problems? If so, please describe.

Have you had any major physical health problems in the past, including allergies, surgery, etc.?

Did you have any relatives who worked as scientists or in scientific fields? If so, who?

Appendix C

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