I wish to thank Dr. David Perkins for his patience and guidance throughout the process of this thesis. I would also like to thank the Honors Thesis Seminar Students for their support and feedback.
Abstract

Many studies have been conducted to observe the effect of contact on attitudes toward people with mental illnesses, but few studies have observed the effect of contact on attitudes toward individuals on the autism spectrum specifically. This study investigates the correlation between the amount of contact with an individual on the autism spectrum and attitudes toward individuals on the autism spectrum. In addition, this study attempts to prove that negative symptoms (such as not talking) encourage positive attitudes more than positive symptoms (such as fits of anger). Over a period of approximately 3 months, 218 Ball State University students were asked to complete an online survey which included several scales testing attitudes toward the autism spectrum. They also read vignettes displaying individuals on the autism spectrum with positive and negative symptoms in both a frustrating situation and an everyday social situation. They then completed more attitudinal questions based on the characters in the vignettes. Results showed a significant positive correlation between the amounts of contact a participant has had with an autistic individual and their willingness to spend time with them (social distance). Results also suggested that participants would be more willing to spend time with vignette subjects displaying negative symptoms rather than positive symptoms. The implications of these results and their applications to working with autistic individuals, as well as further possible research, are discussed.
Attitudes Toward Autism: Reducing Discrimination

Introduction

Helen Keller wrote, “the heaviest burdens of disability arise from personal interaction and not from the impairment itself” (Gus, 2000, Gash & Coffey, 1995). So what happens if the disability is primarily social? It is common knowledge that individuals with mental illnesses must endure prejudice and discrimination (Corrigan & O’Shaughnessy, 2007). They may be considered to be weak or odd, are subject to pity, and are sometimes avoided altogether. This is increasingly true, perhaps, when the mental illness manifests primarily in poor social interaction, as with individuals on the autistic spectrum.

Much research has been done on attitudes toward mental illnesses (Overton & Medina, 2008, Corrigan & Watson, 2007). However, this research only begins to explain the various factors that influence the amount of prejudice and discrimination with which a mentally ill individual is treated. One of the main factors is the degree of familiarity the subject has with the mental illness in question (Corrigan & Watson, 2007).

Some research has been conducted on attitudes toward individuals on the autistic spectrum, primarily attitudes of “neurotypical” children toward children with autism (Swaim & Morgan, 2001). However, very little research has been completed on the attitudes of adults toward individuals on the autism spectrum, and how these attitudes are impacted by contact with autistic individuals. The following experiment will provide a summary of the known information, and expand on the impact of contact on the reduction of prejudice and discrimination toward autistic individuals. It will also begin to explain the effect of the nature of the contact, specifically the display of negative or positive symptoms, and the resulting attitude.
Attitudes toward mental illness, and the impact of contact

Some research suggests that attitudes toward individuals with mental illnesses are primarily positive. For example, a Great Britain Department of Health survey done in 2008 suggested that 85% of Brits think that individuals with mental illnesses deserve sympathy, and more than 80% of Brits think that society should be more tolerant of them. In addition, an experiment by Boysen and Vogel (2008) found that subjects disagreed with statements suggesting that mental illness is a sign of weakness or the person’s fault. Subjects were primarily willing to live in a neighborhood with a treatment center, and to date a person who formerly had a mental illness.

However, not all attitudes toward mental illnesses are so positive. It is common knowledge that mental illness of any kind (such as autism) comes with a certain stigma (placement in a category of unworthy or inferior status). In an experiment by Phelan and Basow (2007), for example, individuals labeled as having a mental illness were perceived to be more dangerous which, in turn, produced social distancing.

The work of Corrigan and O'Shaughnessy breaks down “stigma” into four constructs: cues, stereotypes, prejudice, and discrimination (2007). In short, “cues” are traits (such as being African American or blond) that elicit a stereotype, or belief based on biases toward a certain social group. Prejudice is one response to these stereotypes, and can lead to discrimination, or a negative behavior toward this social group. Discrimination toward individuals with mental illnesses occurs in many forms including segregation, avoidance, and withholding help (Corrigan & O'Shaughnessy). An individual who was rejected for a job due to his autism, for example, may have fallen victim to segregation. In fact, only 20% of people with serious mental health issues are employed, in comparison with 65% of people with more visible physical ailments.
Attitudes Toward Autism

The discrimination an individual shows toward the mentally ill is dependent on several factors, such as the type of mental illness, gender, nature of symptoms shown and, possibly the most important, the individual’s familiarity with the mental illness (Phelan & Basow, 2007). Research has suggested that those who are familiar with a mental illness display less prejudice towards it according to the Opinions About Mental Illness scale (Cohen & Struening, 1962). In addition, individuals familiar with a mental illness perceive the mentally ill to be less dangerous (Alexander & Link, 2003), and desire less social distancing (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Link & Cullen, 1986). In fact, research has found that positive interpersonal contact is even more effective in reducing discrimination toward mental illnesses than either protest or education (Overton & Medina, 2008). As contact increases, the perception of danger and attempts to keep a distance decrease. Even as little contact as a fifteen-minute video can reduce discrimination according to Alexander and Link (2003), because it changes the classification from a perception of “them” to “us”.

Corrigan and Watson expand and elaborate on this theory, adding that the sort of contact ideal for improved attitudes involves five elements: equal status between perceived groups (those with a mental illness and those without), common goals, no competition, authority sanction for the contact, and moderate disconfirmation of a perceived stereotype (2008). According to this theory, for contact to best improve attitudes, the mentally ill and not mentally ill should be perceived as equal and endorsed by authority. Contact will work especially well if the mentally ill disprove a known stereotype. In addition, contact is most likely to improve attitudes if it is face to face, and occurs in school or work settings. Although Corrigan and Watson’s work is based primarily on children, the optimal conditions for attitude improvement
may apply to adults as well.

*Attitudes toward autism, and the impact of contact*

How does contact impact the amount of discrimination an individual shows toward the mentally ill when the primary manifestation of the mental illness is a problem with social interaction? A major problem with most experiments on attitudes toward autism is that they rarely involve an individual on the autism spectrum at all; in most cases, attitudes toward autism are judged based on a short video or explanation. In addition, most of the existing research on autism has been done with children. For example, in an experiment by Swaim and Morgan (2001), third and sixth grade children showed less positive attitudes toward a short video of a child with autism than toward a video of a child without autism. These attitudes were evaluated using the Adjective Checklist (Siperstein, & Bak, 1980). In addition, girls and older children rated their classmates’ behavioral intentions toward the child with autism in the video significantly less positively than toward the child without autism in the video.

A more recent experiment by Harnum, Duffy, and Ferguson (2007) compared subjects’ dislike, avoidance, and perceived similarity to a written scenario of an autistic boy who is new in school. In this scenario, the autistic boy displays traits including rocking, echolalia, and obsession with an object. In this experiment, children subjects perceived that the boy with autism was significantly unlike themselves, and showed significantly more dislike and avoidance for the autistic child than for a “normal” child. In contrast, adult subjects in this same study were not significantly more likely to avoid the autistic child than the “normal” child, and did not perceive the autistic child to be any more different from them than the “normal” child.

Closer contact with an autistic individual throws the results into sharper focus. A major contributor to whether or not contact improves one’s attitude toward individuals with autism, as
Attitudes Toward Autism

suggested by Corrigan and Watson (2007), appears to be the type of contact used. Contact appears to be most effective when it is face to face and the symptoms are explained, or when a small amount of educational information is provided with the contact. For example, a class of ten-year-olds’ attitudes improved toward their classmate with autism when adults provided a short explanation of what autism was, and how the boys’ symptoms were related (Gus, 2000). When the other students learned about the symptoms of autism and picked out similarities between themselves and the autistic boy, their attitudes toward him improved greatly. In another experiment, when a descriptive and explanatory message was added to a short video of an autistic individual and shown to middle school students, it increased their perceived similarity to the autistic boy (Campbell, 2007).

In addition to the type of contact, it follows that subjects’ reactions to contact with an individual with autism will also vary depending on the symptoms displayed. According to Campbell (2006), behavior is judged as more favorable when the symptoms are less frequent. In addition, positive behaviors (such as acting out or speaking incoherently) are judged as more disturbing and dangerous than negative behaviors (such as staring at the floor and not speaking). Peers’ attitudes have also been shown to improve in the presence of socially appropriate behavior, although this has not been shown with autism.

Purpose of Study

Thus far, there has been extensive research regarding attitudes toward mental illnesses and the impact of contact. There has been a small amount of research on attitudes toward autism, especially regarding children. The following experiment uses established and reliable scales to assess subjects’ familiarity with the autism spectrum and their attitudes toward autistic individuals, expanding on previous research in this area. In addition, four vignettes display
autistic individuals with positive and negative symptoms in both a frustrating situation and an everyday social situation. I hypothesized that participants will respond more positively to the attitude questions following the vignettes showing negative symptoms than to the vignettes showing positive symptoms.

Methods

Participants

Participants were 218 undergraduate students (55 male, 163 female) from Ball State University in Muncie, Indiana, who participated in the study for research credit for their Introductory Psychology class. Most of them were Caucasian members of a mixture of religions (primarily Christian), between the ages of 18 and 21. Most participants were single, never married, with some college education.

Materials

This was a between-subjects, cross-sectional study. Participants completed an online questionnaire composed of the measures described below, using Ball State’s inQsit system.

The questionnaire began with a short explanation of the study and participation requirements, incentives, and the opportunity to consent. The first items on the questionnaire consisted of demographic information, followed by a short definition of the autism spectrum and various symptoms.

Participants’ level of familiarity with the autism spectrum was assessed with an adaptation of Corrigan’s Level of Contact Report (Corrigan, Green, Lundin, Kubiak, & Penn, 2001). These 11 true/false items ranged from “I have watched a movie or television show in which a character depicted a person on the autism spectrum” to “I live with a person on the autism spectrum” and “I am on the autism spectrum.”
General attitudes toward autism were assessed using an adaptation of the Likert scales used in Boysen and Vogel (2008). The following items were tested on a Likert scale ranging from -4 (very false) to 4 (very true): “Autism is a sign of weakness”, “Autism is the fault of the person who has it”, “I would avoid living in a neighborhood with an autism treatment center”, and “I would date someone who claimed to be on the autism spectrum.” In addition, more general assessment items were added based on an adaptation of the items used in Corrigan et al.’s 2001 study on perceived dangerousness (Corrigan, Green, Lundin, Kubiak, Penn). These seven statements, including “A person on the autism spectrum is dangerous” and “When I think of individuals on the autism spectrum, I am frightened”, were scaled on a Likert scale ranging from 1 (very false) to 9 (very true).

Perceived violence (the participants’ opinion of the likelihood that an individual on the autism spectrum would act violently toward other people or toward himself/herself) was scored on a Likert scale ranging from 1 (not likely) to 6 (very likely) (Martin et. al, 2000; Schnittker, 2000; Phelan & Basow, 2007).

Social distance was assessed using six Likert scale items previously used in a variety of mental illness and attitudes research (Martin et. al, 2000; Schnittker, 2000; Phelan & Basow, 2007). Participants were asked how willing they would be to “move next door to an individual on the autism spectrum”, and similar items. The Likert scale ranged from 1 (not willing) to 6 (very willing).

Vignettes were provided, and participants were instructed to read them carefully. Participants read two of four vignettes, either 1 and 3, 1 and 4, 2 and 3, or 2 and 4. The vignettes can be found in the appendix. These vignettes were analyzed for realistic accuracy and approved by Dr. Maria Valena, MD, Pediatric/Adolescent Psychiatrist specializing in the Autism Spectrum.
After each vignette, participants were again asked to complete the two perceived violence items (their opinion of whether the autistic individual would act violently toward themselves or others) and the social distance items (Martin et. al, 2000; Schnittker, 2000; Phelan & Basow, 2007), this time keeping in mind the character in the vignette.

The first two vignettes displayed positive and negative symptoms portraying how an individual on the autism spectrum may handle anger. The second two vignettes displayed positive and negative symptoms of how a higher functioning individual on the autism spectrum might act in a common social situation.

In addition, participants were also asked to complete the Adjective Checklist previously used in studies on attitudes toward mental illnesses and autism in childhood (Siperstein & Bak, 1980; Swaim & Morgan, 2001) based on the same character after each vignette. Participants were asked whether or not the individual in the vignette was “healthy” or “neat”, for example.

Procedure

Subjects taking Introductory Psychology at Ball State University were given access to a link leading them to the online informed consent and survey. The survey could be completed from any computer at any time between 11/18/2008 and 2/09/2009, at the leisure of the subject.

Results

The 11 items relating to contact with autistic individuals were added together to form a Total Contact Score to be used in correlations. Obtained scores ranged from 1 to 9, with a mean of 4.44 and a standard deviation of 1.765. The scale’s reliability (Cronbach alpha) was .54,
however variability was expected since the items on this scale refer to diverse kinds of situations where contact might occur. Of the 218 participants, 8 indicated that they were on the spectrum, many had watched a documentary or spent time with an autistic person, and others had never known or observed an individual on the spectrum. The 8 who indicated that they were on the spectrum may have had Asperger’s Syndrome.

The 11 general assessment items were added for a Total General Assessment Score, and variables were re-coded where necessary. Scores on this 1-9 Likert scale ranged from 49 to 95, with a mean of 77.13, a standard deviation of 9.019, and a Cronbach alpha of .667 (see Table 1). The 2 perceived violence scores were added together for a Total Perceived Violence Score which ranged from 4 to 12 with a mean of 8.29, a standard deviation of 2.102, and a Cronbach alpha of .669. When correlated with the Total Contact Score, neither of these scales was significant. Individual items were also not significant when correlated with the Total Contact Score.

The six social distance items were added together for a Total Social Distance Score, ranging between 6 and 36 with a mean of 26.74, a standard deviation of 6.706, and a Cronbach alpha of .904. This scale correlated with the Total Contact Score for a Pearson Correlation of .190 (p = .01, 2-tailed); the more contact an individual had had with an individual on the autism spectrum, the more they were willing to spend time with them (lack of social distance).

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptive statistics for attitude scales</strong></td>
</tr>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>Contact w/ Autism</td>
</tr>
<tr>
<td>General Assessment of Attitudes</td>
</tr>
<tr>
<td>Perceived Violence</td>
</tr>
<tr>
<td>Social Distance</td>
</tr>
</tbody>
</table>
Results from individuals who read the first vignette (102) were compared with individuals who read the second vignette (115). Both vignettes regarded a fictional person named “Carl”, but differed in the way Carl handled a frustrating situation (displaying either positive or negative symptoms). The two perceived violence items regarding these vignettes were added together for a Total Perceived Violence Score with a mean of 6.34 (see Table 2), a standard deviation of 2.217, a range of 2 – 12, and a Cronbach alpha of .685. The six social distance items regarding these vignettes were added together for a Total Social Distance Score with a mean of 24.72, a standard deviation of 6.710, a range of 10 – 36, and a Cronbach alpha of .908. The 26 adjective items regarding these vignettes were also added together to form a Total Adjectives Score. “No” answers to these items were given a score of zero. “Yes” answers to positive items were given a score of “1”, and “yes answers to negative items were given a score of “-1.” The Total Adjective Scores for this scale ranged from -11 to 11 with a mean of 2.57, a standard deviation of 4.711, and a Cronbach alpha of .822.

Total Perceived Violence Scores of people who read the first vignette displaying positive symptoms ($M = 6.75$, $SD = 2.141$) were significantly different from Total Perceived Violence Scores of people who read the second vignette displaying negative symptoms ($M = 5.97$, $SD = 2.230$, $t(216) = -2.606$, $p < .01$, 2-tailed, see Table 3). The Total Social Distance Scores of people who read vignettes 1 and 2 were not significantly different, nor were the Total Adjective Scores.

The third and fourth vignettes (102 and 115 participants respectively) were about a fictional character named “Toby” and the way he handled a normal social situation (displaying either positive or negative symptoms). The two perceived violence items regarding these vignettes were added together for a Total Perceived Violence Score with a mean of 3.83, a standard
deviation of 2.074, a range of 2 - 10, and a Cronbach alpha of .843. The six social distance items regarding these vignettes were added together for a Total Social Distance Score with a mean of 25.94, a standard deviation of 7.144, a range of 6 – 36, and a Cronbach alpha of .925. The 26 adjectives items regarding these vignettes were also added together in a format similar to the adjectives describing “Carl” in the previous vignettes for a Total Adjectives Score. The Total Scores for this scale ranged from -5 to 11 with a mean of 6.34, a standard deviation of 3.594, and a Cronbach alpha of .763.

Total Perceived Violence Scores of individuals who read the third vignette ($M = 4.22, SD = 2.227$) differed from scores of individuals who read the fourth vignette ($M = 3.47, SD = 1.862, t(214) = -2.709, p < .01, 2-tailed$). In addition, Total Social Distance Scores of individuals who read the third vignette ($M = 24.38, SD = 7.197$) differed significantly from scores of individuals who read the fourth vignette ($M = 27.40, SD = 6.809, t(213) = -3.153, p < .01, 2-tailed$). The Total Adjective Score of individuals who read the third vignette ($M = 6.87, SD = 3.545$) was also significantly different from the scores of individuals who read the fourth vignette ($M = 5.85, SD = 3.586, t(201) = 2.036, p <.05, 2-tailed$).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Range</th>
<th>Reliability</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl Perceived Violence</td>
<td>6.34</td>
<td>2.217</td>
<td>2-12</td>
<td>.685</td>
<td>Higher score = more violent</td>
</tr>
<tr>
<td>Carl Social Distance</td>
<td>24.72</td>
<td>6.710</td>
<td>10-36</td>
<td>.908</td>
<td>Higher score = more likely to want to spend time with Carl</td>
</tr>
<tr>
<td>Carl Adj. Score</td>
<td>2.57</td>
<td>4.711</td>
<td>-11-11</td>
<td>.822</td>
<td>Higher score = Carl is described by mostly positive adjectives</td>
</tr>
<tr>
<td>Toby Perceived Violence</td>
<td>3.83</td>
<td>2.074</td>
<td>2-10</td>
<td>.843</td>
<td>Higher score = more violent</td>
</tr>
<tr>
<td>Toby Social Distance</td>
<td>25.94</td>
<td>7.144</td>
<td>6-36</td>
<td>.925</td>
<td>Higher score = more likely to spend time with Toby</td>
</tr>
<tr>
<td>Toby Adj. Score</td>
<td>6.34</td>
<td>3.594</td>
<td>-5-11</td>
<td>.763</td>
<td>Higher score = Toby is described by mostly positive adjectives</td>
</tr>
</tbody>
</table>

Table 2

Descriptive statistics for individual vignettes
Table 3

Mean Differences Among Vignettes

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean (Groups 1 &amp; 3, positive)</th>
<th>Mean (Groups 2 &amp; 4, negative)</th>
<th>Std. Dev. (Groups 1 &amp; 3, positive)</th>
<th>Std. Dev. (Groups 2 &amp; 4, negative)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carl Perceived Violence</td>
<td>6.75</td>
<td>5.97</td>
<td>2.141</td>
<td>2.230</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Toby Perceived Violence</td>
<td>4.22</td>
<td>3.47</td>
<td>2.227</td>
<td>1.862</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Toby Social Distance</td>
<td>24.38</td>
<td>27.40</td>
<td>7.197</td>
<td>6.809</td>
<td>p &lt; .01</td>
</tr>
</tbody>
</table>

Chi squares were done to look for possible significance between groups in the individual adjectives describing Carl and Toby. Participants thought that the Carl in the first vignette was sloppier than the Carl in the second vignette, but that the second Carl was friendlier (see Table 4). Participants also felt that the Toby in the third vignette was more sloppy, careless, honest, and friendly, while the Toby in the fourth vignette was more careful, slow, proud, bored, and ashamed.

Table 4

Adjective Differences Among Vignettes

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Vignette shown to display significantly more of adjective (SEE APPENDIX, ALL PRESENTED SCORES WERE SIGNIFICANT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sloppy</td>
<td>positive symptoms in a frustrating situation, positive symptoms in a social situation</td>
</tr>
<tr>
<td>Friendly</td>
<td>negative symptoms in a frustrating situation, positive symptoms in a social situation</td>
</tr>
<tr>
<td>Careful</td>
<td>negative symptoms in a social situation</td>
</tr>
<tr>
<td>Slow</td>
<td>negative symptoms in a social situation</td>
</tr>
<tr>
<td>Careless</td>
<td>positive symptoms in a social situation</td>
</tr>
<tr>
<td>Proud</td>
<td>negative symptoms in a social situation</td>
</tr>
<tr>
<td>Bored</td>
<td>negative symptoms in a social situation</td>
</tr>
<tr>
<td>Honest</td>
<td>positive symptoms in a social situation</td>
</tr>
<tr>
<td>Ashamed</td>
<td>negative symptoms in a social situation</td>
</tr>
</tbody>
</table>

Discussion

Although this experiment had many significant results, possibly the most startling was
found in the demographic section. Eight spectrum students out of the 218 study participants suggests that autism may be more prevalent than the known rate, 1 out of 150 (R. Fischer, personal communication, April 7, 2009). Indiana may have a higher prevalence of autism than the rest of the United States (1/100), but this rate is almost four times that. This may be caused by a number of factors. College-aged adults may be more likely to be diagnosed than older adults, and college-aged adults with Asperger’s Syndrome may be more likely to take Psychology than another science class. In addition, perhaps at least one of these participants pressed the wrong button by mistake. Even so, these results require further research.

It is encouraging to note that significance was not found for the correlation between contact with individuals with autism and perceived violence. This may suggest that, in contrast to mental illness in general (Phelen & Basow, 2007), autism does not provoke an image of violence at all. This makes sense, considering the media’s portrayal of autism in movies like Mercury Rising Mozart and the Whale, and Rain Man, in which the autistic character is not at all violent. It does seem, however, that contact with individuals on the autistic spectrum does improve college students’ attitude toward them. This suggests that efforts to integrate individuals with autism into the community may be helpful.

When the Carl displaying positive symptoms and the Carl who displayed negative symptoms were compared, the Carl displaying positive symptoms was thought to be more violent. This was expected, as the Carl displaying positive symptoms is the only vignette subject to display overt violence. People were not, however, significantly more likely to want to spend time with the Carl displaying negative symptoms than the Carl displaying positive symptoms. This may mean that people don’t want to spend time with either Carl, as both Carls display symptoms of autism.
Another possible factor to consider is that those participants who read the vignette hastily may have comprehended only Carl’s symptoms, which, to the non-autistic mind, may suggest that Carl is a four or five-year-old boy. Readers paying more attention would have caught that Carl is, in fact, nineteen. This is a possible confounding variable that must be clarified in further studies that use these vignettes.

The Toby showing negative symptoms was clearly thought to be less violent and more likeable than the Toby showing positive symptoms. This may suggest that any kind of efforts toward integration into the community for autistic individuals may be more helpful for those showing negative symptoms than positive symptoms. More research must be conducted to confirm this theory.

The adjective checklist for Carl was not significant, and the adjective checklist for Toby was significant in the opposite direction of the hypothesis. These results may be explained by the fact that some items on these lists (“smart”, “bored”, etc.) may not be relevant to the situation at hand, and others may have been ambiguous. Contrary to these results, some of the adjectives did show significant differences when examined individually, most specifically those adjectives that were most relevant to the symptoms displayed. Further studies should use only adjectives that are socially relevant, such as “friendly”.

Limitations of this experiment include the small age difference and ethnic variety evident from the demographic section of the survey. Future studies should gather a wider range of ages and ethnicities. Another major limitation is that this study relies entirely on self-report of the participants. Despite these limitations, a sample size of 218 does ensure some reliability in results among that particular demographic.

Further research should include a larger and more heterogeneous sample size, and should
ask more specific questions about perceived violence and social distance. Vignettes should be worded more carefully, and adjectives should also be related specifically to violence and social distance.

In conclusion, this experiment has many implications for those attempting to treat autism. It is encouraging to hope that, for the most part, autism does not carry a stigma of violence. It is also encouraging to note that increased contact with autistic individuals contributes to increased likeability, because this means that efforts toward community integration of autistic individuals will most likely have positive results. These community integration plans must keep in mind the effects of negative and positive symptoms evident by the vignettes of Carl and Toby.

Still most surprising is the high percentage of spectrum participants in this experiment, which may suggest that autism is far more prevalent, especially among young people, than even doctors have theorized. This only begins to suggest the importance of research on the autism spectrum, and how much research is still left to be completed.
References


Appendix: Vignettes

1) (positive symptoms in frustrating situation):
   Nineteen-year-old Carl had been having a very bad day, but he and his mother had decided to
go ahead with the lunch date they had scheduled with their friend Jennifer. While they were at
lunch, Jennifer spoke with Carl’s mother about the problems she was having with her boyfriend.
Carl didn’t talk much, but this was not unusual. Carl usually didn’t say very much in general,
and when he did, sometimes he said the same things over and over until he was sure everyone
around him had heard him.

   Presently, Carl’s mother started to tell Jennifer about the trouble Carl had been having with a
girl that he had liked. Hearing about it made Carl get very mad suddenly, and he clenched his
fists under the table and wrinkled his forehead. When Carl’s mother continued to talk about
Carl’s problems with the girl he liked, he suddenly sprang up and slammed his fist down on the
table, scattering French fries everywhere. Then he started to cry, because he was embarrassed
that he had been unable to control this behavior in front of Jennifer. He hoped she would
continue to be his friend.

2) (negative symptoms in frustrating situation):
   Nineteen-year-old Carl had been having a very bad day, but he and his mother had decided to
go ahead with the lunch date they had scheduled with their friend Jennifer. While they were at
lunch, Jennifer spoke with Carl’s mother about the problems she was having with her boyfriend.
Carl didn’t talk much, but this was not unusual. Carl usually didn’t say very much in general,
and when he did, sometimes he said the same things over and over until he was sure everyone
around him had heard him.

   Presently, Carl’s mother started to tell Jennifer about the trouble Carl had been having with a
girl that he had liked. Hearing about it made Carl get very mad suddenly, and he clenched his
fists under the table and wrinkled his forehead. When Carl’s mother continued to talk about
Carl’s problems with the girl he liked, he suddenly stood up and very deliberately walked away.
He gave no warning, or even a look to tell someone where he was going. He was embarrassed,
and he was no longer able to tolerate his mother talking about the girl anymore. He hoped
Jennifer would continue to be their friend, in spite of his strange behavior.

3) (positive symptoms in a social situation):
   After a Math Team competition, the leader of the Math Team took 10-year-old Toby and his
teammates out for lunch. The rest of the team tolerated Toby even though sometimes he acted
very strangely, because he could do math problems very fast in his head.

   During lunch, the team talked about the various problems they had been given, and glossed
over the finer points of the competition. Toby tended to interrupt frequently with extremely
long-winded explanations of how he solved some of the problems, but no one really paid
attention to him – that was just Toby. At one point, Toby chimed in, “Yeah, that problem was
really hard for me. I’d peed my pants just a little before that, and it distracted me, so I almost
didn’t get the problem done on time!”

   The table went silent after that, but only for a second, until Josh changed the subject. Toby
was just weird like that.
4) (negative symptoms in a social situation):

   After a Math Team competition, the leader of the Math Team took 10-year-old Toby and his teammates out for lunch. The rest of the team tolerated Toby even though sometimes he acted very strangely, because he could do math problems very fast in his head.

   During lunch, the team talked about the various problems they had been given, and glossed over the finer points of the competition. Toby remained silent for the entire time and just smiled, but nobody paid attention to him – that was just Toby. At one point, Josh thought that Toby looked a little left out and wanted to include him in the conversation. “What’d you think of the last problem, Toby? You did really well on that one!”

   Toby froze, and looked at Josh like a deer in headlights. “Uh… the last… oh!” Toby turned red. “That one was… uh… hard!” The table went silent, waiting for Toby to elaborate, but he just smiled pleadingly until Josh changed the subject. Toby was just weird like that.