Did Asperger’s Cases Have Asperger Disorder? A Research Note

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With publication of the fourth edition of the *Diagnostic and statistical manual of mental disorders* (DSM–IV), standardized criteria for Asperger Disorder, a putative subtype of Pervasive Developmental Disorder, are now available. This paper examines the four cases Asperger originally presented in his seminal paper (1991/1944), using DSM–IV criteria to determine whether a diagnosis of Autistic or Asperger Disorder is most appropriate. We found that all four cases met DSM–IV criteria for Autistic Disorder, rather than Asperger Disorder. This suggests that the syndrome Asperger originally described may not be captured by present diagnostic criteria. Implications for future research are discussed.

**Keywords:** Autism, Asperger Disorder, subtype validity, diagnostic criteria.

**Abbreviations:** HFA: High-functioning autism; PDD: Pervasive Developmental Disorder.

Introduction

In 1943, Leo Kanner described 11 children with “early infantile autism”, who demonstrated severe social and communication abnormalities as well as restricted, narrow interests (Kanner, 1943). A year later, unaware of Kanner’s paper, Hans Asperger described a group of individuals suffering from “autistic psychopathy” (Asperger, 1991/1944), highlighting the same types of deficits Kanner had noted in his patients. Later, Asperger claimed that his disorder was related to Kanner’s “early infantile autism” but that the two conditions were “basically different types” (Asperger, 1979). Differences in clinical presentation outlined in the original descriptions have led some researchers to consider the two disorders as distinct (Gillberg & Gillberg, 1989; Green, 1990; Szatmari, Bremner & Nagy, 1989; Tantam, 1988). Similarities apparent in the original papers, however, have caused others to conclude that Asperger Disorder, as it has come to be called, is just a milder form of what we already understand as autism (Schopler, 1985, 1996; Wing, 1986, 1991).

With the advent of the fourth edition of the *Diagnostic and statistical manual of mental disorders* (DSM–IV; American Psychiatric Association, 1994), questions about the validity of the distinction between autism and Asperger Disorder still remain. As outlined in DSM–IV, the syndromes are characterized by similar impairments in social functioning and range of interests. Both require at least two manifestations of social impairment and at least one type of restricted interests or behaviors from an identical list of characteristic symptoms. Criteria for Autistic Disorder, however, specify that at least one symptom from an additional category of communication impairments must also be present for a diagnosis to be made. Criteria for Asperger Disorder do not dictate the absence of these communication impairments, but do specify that language development must not be delayed. This is defined in the DSM–IV as acquisition of single words, used in a meaningful and communicative fashion, before age 2, and acquisition of 2–3 word phrases by age 3. Also, criteria for Asperger Disorder require normal cognitive and self-help skills.

The diagnostic heuristic of the DSM–IV is to provide hierarchically organized categories of mental disorders that aid clinicians in differential diagnoses. The syndromes within the Pervasive Developmental Disorders category are intended to be related, but mutually exclusive and nonoverlapping. Thus, a child cannot simultaneously meet criteria for Autistic Disorder and Asperger Disorder. This strategy is intended to reduce multiple diagnoses in individuals who exhibit symptoms common to more than one disorder and is helpful in reducing the amount of overlap between diagnostic categories. To meet criteria for Autistic Disorder, an individual must have a history of or currently demonstrate six or more of the symptoms listed. Consequently, the possibility of Asperger Disorder is considered in the differential diagnosis only when the individual currently demonstrates or has a history of fewer than six symptoms of autism. Thus, in addition to differences in communication, cognitive ability, and self-help skills, another primary diagnostic distinction between the two disorders lies in the number of symptoms demonstrated. Even if an individual demonstrates other characteristics of Asperger Disorder, such as normal, or even precocious, early language development, yet meets criteria for Autistic Disorder by virtue of demonstrating six or more symptoms, a diagnosis of Asperger Disorder is not made, or even considered. Thus, the classification
of Autistic Disorder takes precedence in the differential diagnostic hierarchy.

In his original description of the syndrome, Asperger presented four cases to illustrate what he considered to be the defining features of the syndrome (Asperger, 1991/1944). This research note examines these cases to determine how modern clinicians might classify them according to DSM-IV criteria. The following excerpt of one of these cases is taken from Frith's English translation of Asperger's initial paper (Asperger, 1991/1944).

Results

Fritz V.

Fritz, a six-year-old considered "uneducable" at the end of his first day of school, was described as a "highly unusual boy who shows a very severe impairment in social integration" (p. 39). "Posture, eye gaze, voice and speech made it obvious at first glance that the boy's relations to the outside world were extremely limited" (p. 42). His parents reported behavior problems and difficulty with self-help skills "from the earliest age" (p. 39).

Specific social impairments Fritz demonstrated include poor nonverbal communication skills (DSM-IV diagnostic criterion 1a for Autistic Disorder) and difficulty with peer relationships (criterion 1b):

He lacked distance ... [and] his eye gaze was strikingly odd... When somebody was talking to him he did not enter into the sort of eye contact which would normally be fundamental to conversation. He darted short "peripheral" looks and glanced at both people and objects only fleetingly... The normal speech melody, the natural flow of speech, was missing. Most of the time, he spoke very slowly, dragging out certain words for an exceptionally long time. He also showed increased modulation so that his speech was often sing-song [p. 42]... This boy also lacks understanding of other people's expressions and cannot react to them appropriately. [p. 46]

He never got on with other children and, in fact, was not interested in them. They only "wound him up". He quickly became aggressive and lashed out with anything he could get ahold of, regardless of the danger to others. [p. 40]

Whereas Fritz spoke his first words at 10 months, several months before he learned to walk, communication impairments were demonstrated from the beginning, including difficulty initiating and sustaining conversation (criterion 2b), stereotyped and repetitive speech (criterion 2c), and social play below developmental level (criterion 2d):

Only rarely was what he said in answer to a question. One usually had to ask a question many times before it was registered. When he did answer, the answer was as short as possible. [p. 42]

Often, instead of answering a question, he said "Nothing at all, nobody at all,"... Occasionally, he stereotypically repeated the question or a meaningless word or perhaps a word he made up. [p. 44]

It was impossible to get him to join in group play, but neither could he play properly by himself. He just did not know what to do with the toys he was given. For instance, he put building blocks in his mouth and chewed them, or he threw them under the beds. The noise this created seemed to give him pleasure. [p. 42]

In the area of restricted or narrow interests and behaviors, Fritz demonstrated both encompassing preoccupations (criterion 3a) and motor mannerisms (criterion 3c):

From very early on he had shown an interest in numbers and calculations. He had learnt to count to over 100 and was able to calculate within that number-space with great fluency. Even before any systematic teaching had begun, he had mastered calculations with numbers over 10.... His ability to use fractions was unusual, and was revealed during his first year of instruction. The mother reported that at the very beginning of schooling he set himself the problem—what is bigger 1/16 or 1/18—and then solved it with ease. [p. 45]

He would suddenly start to beat rhythmically on his thighs, bang loudly on the table, hit the wall, hit another person or jump around the room. [p. 43]

Across the three DSM-IV domains of social impairment, communication abnormalities and restricted interests/behaviors, Fritz demonstrates at least seven symptoms of Autistic Disorder. Some symptoms were not clearly addressed in the narrative (e.g. sharing of enjoyment or interests with other people, social reciprocity, interest in parts of objects, etc.); thus, it is possible that he exhibited even more symptoms of autism. Fritz is described as "never" playing with or showing interest in other children, with behavior problems and self-help delays apparent from very early in life; thus, symptoms appear to have been present before age 3, as required by the DSM-IV. In summary, it appears that Fritz meets criteria for Autistic Disorder and, according to the precedence rule, cannot be diagnosed with DSM-IV Asperger Disorder.

Although space limitations do not permit detailed descriptions and discussion of Asperger's three other cases, we found evidence of at least six symptoms of autism in the narratives of each of them, resulting in diagnoses of Autistic Disorder rather than Asperger Disorder in all cases. (Details of these three cases and their correspondence with DSM-IV criteria can be obtained from the authors.) Table 1 summarizes the symptoms of DSM-IV-defined Autistic Disorder suggested in the accounts of Asperger's four cases, as well as in the general description of the disorder he provided at the end of his seminal paper. As can be seen, there is substantial overlap between the symptoms described by Asperger and those required for a DSM-IV diagnosis of autism, making the results of the differential diagnosis carried out here somewhat less surprising.

An important consideration in this exercise was the reliability with which symptoms of autism would be endorsed by modern clinicians when using only literary narratives of patients' conditions. Since application of
Table 1  
Number of Symptoms of DSM-IV-defined Autistic Disorder Demonstrated by Asperger’s Original Cases

<table>
<thead>
<tr>
<th>Symptom Description</th>
<th>Fritz V.</th>
<th>Harro L.</th>
<th>Ernst K.</th>
<th>Hellmuth L.</th>
<th>Asperger’s Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Impairment in Social Interaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Impaired use of nonverbal communication*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>b. Poor peer relationships*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>c. Lack of sharing*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>d. Lack of social/emotional reciprocity*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Impairment in Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Delayed language development</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>b. Impaired ability to initiate or sustain conversations</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>c. Stereotyped, repetitive or idiosyncratic language</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>d. Social play below developmental level</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3. Restricted Behavior or Interests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Encompassing preoccupation*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>b. Inflexible adherence to routines*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>c. Stereotyped and repetitive motor mannerisms*</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>d. Repetitive use of objects*</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Abnormal Functioning before Age 3</td>
<td>implied</td>
<td>implied</td>
<td>implied</td>
<td>implied</td>
<td>X</td>
</tr>
</tbody>
</table>

* These symptoms are also included in the criteria for DSM-IV-defined Asperger Disorder.

Specific diagnostic criteria to general case reports is not precise, we sought the opinions of several professionals with special expertise in autism and extensive training in the use of DSM-IV criteria. Seven professionals (four child psychiatrists, one educational psychologist and two doctoral-level special educators) were asked to apply DSM-IV criteria to the four case narratives included in Asperger’s original paper (1991/1944). To minimize respondent bias, these professionals also rated narratives from two cases not thought to have Asperger Disorder. Ratings were done independently and raters were blind to the purpose of the undertaking. The limitations of using narratives to diagnose subjects were acknowledged and raters were instructed to indicate only DSM-IV symptoms they judged to be definitely or probably present in the narratives; those for which there was not enough information to derive clinical decisions were to be judged absent. The mean number of symptoms endorsed by these raters for Asperger’s four cases was: 8.1 for Fritz, 6.7 for Harro, 6.4 for Ernst and 7.1 for Hellmuth. Thus, on the average, the raters felt that all four of Asperger’s cases demonstrated sufficient symptoms of Autistic Disorder to receive this diagnosis. Raters were also asked to indicate which diagnosis, Autistic or Asperger Disorder, appeared most appropriate in each case. Percent agreement on this diagnostic judgment was calculated for each of the four cases: 86% of the raters (6 of 7) agreed with our diagnosis of Autistic Disorder for Fritz, 100% for Harro, 71% (5 of 7 raters) for Ernst and 100% for Hellmuth.

Discussion

From the information provided in Asperger’s original papers, all four boys appear to have demonstrated at least six symptoms of autism across the DSM-IV categories of social impairment, communication difficulties and restricted behaviors and interests. Although the descriptions contain omissions and selective reporting that make the reliability of the total number of symptoms uncertain, the presence of a minimum of six symptoms was agreed upon by seven experts in autism with extensive familiarity with the DSM-IV. Thus, although the boys demonstrate many characteristics of Asperger Disorder, such as well-developed, precocious language and unusual intense interests, all demonstrate more symptoms of autism than is currently allowed for an Asperger Disorder diagnosis in the DSM-IV. An examination of these cases according to ICD-10 criteria (International classification of diseases and disorders, Tenth Edition; World Health Organization, 1992) yielded the same results, since ICD-10 and DSM-IV criteria are highly similar and both specify that a diagnosis of autism precludes that of Asperger Disorder.

An additional criterion for a diagnosis of Autistic Disorder is that symptoms must be present before age three. Described as a “constitutional” disorder apparent “from the second year of life” (p. 67), Asperger (1991/1944) outlined symptoms evident in “earliest childhood” in each case, including delays in self-help skills in all four children and “behavior problems” in three. The children were described as “never” forming close relationships. In none of the cases did Asperger describe a period of normal social development followed by a regression and loss of skills, implying that these behaviors were deviant from birth.

In addition to the case synopses, Asperger (1991/1944) provided a more general description of the disorder, which included additional characteristics not detailed in the four cases. Asperger considered the following symptoms to be typical of the disorder: poor eye contact, limited facial expression and voice tone, social isolation and poor peer relations, difficulty understanding emotions, pronoun reversal, stereotyped phrases, pedantic speech, poor reciprocal communication, limited imaginative play, encompassing preoccupations, stereotyped behaviors, inflexible adherence to routines and repetitive use of objects. Additional similarities between Asperger
Disorder and Kanner's description of autism have been outlined elsewhere (Wing, 1981, 1991).

As can be seen in Table 1, there is substantial overlap between the symptoms described by Asperger and those of autism. According to DSM–IV, a diagnosis of Autistic Disorder precludes that of Asperger Disorder; however, if this precedence criterion is ignored, the two disorders appear very similar. Indeed, all of the original cases show evidence of at least 6 symptoms of autism, while Asperger's general account includes at least 8 of the 12 symptoms considered indicative of autism. Thus, it would appear that the DSM–IV criteria may not identify the disorder Asperger originally described.

Two interpretations of this suggestion are possible. First, it may be that Asperger Disorder and autism are two different labels for the same condition. If this is the case, further research to determine the differences between Asperger Disorder and autism is unnecessary and two labels would appear unwarranted. This suggestion has been vigorously put forth by Schopler (1985, 1996). A second interpretation, however, is that current diagnostic criteria specify a disorder different from what Asperger originally intended. That is, the true nature of the disorder is not fully captured by DSM–IV nosology. If the latter interpretation is correct, then research using DSM–IV criteria may not be helpful in examining the validity of the distinction between the disorders described by Kanner and Asperger.

Several areas of potential difference between autism and Asperger Disorder sustain the debate about the external validity of the diagnoses (Wing, 1991). For example, Asperger described all of his cases as noticeably clumsy and felt that motor delays were a primary feature of the syndrome. Kanner, on the other hand, made no mention of motor deficits when he outlined the core symptoms of autism and apparently did not consider them central to the disorder. Two studies comparing motor abilities in Asperger Disorder and high-functioning autism (HFA), using standardized measures of multiple motor skills, have been conducted (Ghaziuddin, Butler, Tsai & Ghaziuddin, 1994; Manjiviona & Prior, 1995). Both investigations demonstrated that individuals with HFA were as impaired on motor tasks as those with Asperger Disorder; both studies concluded that motor ability may not reliably distinguish one disorder from the other. DSM–IV criteria were not available at that time to define the Asperger group in either study, however, and it is unclear how individuals with DSM–IV-defined Asperger Disorder would perform on these motor tests. Thus, more research into the motor abilities of individuals with autism spectrum conditions is needed in order to determine if motor deficits are a core feature of either condition.

Asperger (1991/1944) also described his patients as being acutely aware of other people and able to comprehend complex social situations. For example, he noted that Fritz "often surprised us with remarks that betrayed an excellent apprehension of a situation and an accurate judgement of people. This was the more amazing as he apparently never took any notice of his environment" (p.45). Asperger also remarked that his patients "know who means well with them and who does not" (p.73). This ability to understand other people's intentions may be related to theory of mind abilities, and indeed, two studies have suggested that such social abilities and taking capacities are better in Asperger Disorder than autism (Bowler, 1992; Ozonoff, Rogers & Pennington, 1991). This research, too, was conducted before DSM–IV criteria for Asperger Disorder were available, however, necessitating further research into social perspective-taking abilities in this condition.

Asperger also portrayed many of his patients as highly intelligent. Approximately 25% of individuals with autism obtain IQ scores in the nonretarded range (Gillberg, 1991), but it is unclear how the cognitive abilities of this high-functioning group compare to those of Asperger Disorder. If Asperger Disorder is associated with high intelligence, it may be that these individuals obtain even higher IQ scores than those with HFA; alternatively, the IQ profiles of the groups may differ. Research conducted before DSM–IV criteria were available found that Asperger Disorder subjects had higher Verbal than Performance IQ scores, whereas HFA subjects demonstrated the opposite pattern (Klin, Volkmar, Sparrow, Cicchetti & Rourke, 1995). Additional studies of cognitive abilities in DSM–IV-defined Asperger Disorder and autism are needed.

The central thesis of this paper is that current DSM–IV diagnostic criteria do not identify the types of individuals originally described by Hans Asperger. Indeed, application of DSM–IV criteria has resulted in lower estimates of prevalence than those originally predicted (Asperger, 1991/1944; Szatmari, Bartolucci & Bremner, 1989; Wing, 1991). One recent field trial found that only 20% of nonretarded individuals with Pervasive Developmental Disorder (PDD) received a DSM–IV diagnosis of Asperger Disorder (Volkmar et al., 1994). In another study, Szatmari and colleagues found no individuals in their sample of mild PDD cases who met DSM–IV criteria for Asperger Disorder (Szatmari, Archer, Fisman, Streiner & Wilson, 1995). Although this may be discouraging to researchers studying Asperger Disorder, we hope it will not dampen enthusiasm for studying this critical topic. The accuracy of future research endeavors and effectiveness of clinical interventions rely upon a better understanding of whether Asperger Disorder and autism are distinct subtypes of PDD or one and the same condition.

Acknowledgements—The authors would like to thank two anonymous reviewers for their helpful comments on this manuscript. We are indebted to Richard Justice, Janet Lainhart, William McMahon, Peter Nicholas, Robert O'Neil, Brent Peterson and Scott Stiefel for their help in rating the Asperger narratives.

References


Accepted manuscript received 27 April 1996