History of Autism Spectrum Disorders

: Historical Controversy over the Diagnosis

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The present study aimed to review the historical transitions from the first case report of autistic disorder to later appearances of the concept of autism spectrum disorders (ASD), and to consider influence of the transitions upon the diagnosis for the disorder. The final section showed advantages and disadvantages of the concept of ASD. The new concept will encourage educational support for children who have clinical characteristics of ASD, and also open a window of opportunity for investigating neurological substrates which are common with autistic disorder and Asperger’s disorder. On the other hand, it is necessary to formulate the objective index to measure the severity of ASD and to offer correct knowledge about the concept not for increasing prejudice for the disorder.

Keyword: autism spectrum disorders (ASD), autistic disorder, Asperger’s disorder, diagnosis, historical review.

1. General Description of Autism Spectrum Disorders

Autism spectrum disorders (ASD) is one of the developmental disorders that includes autistic disorder and Asperger’s disorder. There are three main clinical conditions in ASD: 1) qualitative impairment in social interaction, 2) qualitative impairments in communications, and 3) restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (Wing, 1988; Wing, 1997). The severity of the clinical conditions is quite different and exists on a continuum among patients, ranging from mild to severe. Although it has been almost 60 years from the first report of autism (Kanner, 1943), the etiology is still unclear. Recent studies suggest that some dysfunctions in the central nervous system have been attributed etiologically to ASD. These are based on an epidemiological study reported that ASD was comorbid with mental retardation and/or epilepsy

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History of Autism Spectrum Disorders

at a constant rate and the prevalence rates of males with ASD were higher than that of females (Autism and Developmental Disabilities Monitoring Network Surveillance Year 2006 Principal Investigators, 2009). Moreover, the possible etiology is also supported by some genetic investigations that uncovered several candidate genes responsible for ASD and high positive agreement rates in monozygotic twins (Abrahams & Geschwind, 2008; Rosenberg, Law, Yenokyan, McGready, Kaufmann, & Law, 2009).

The concept of ASD was put forward by L. Wing (1988) based on two classical case reports of autistic disorder (Kanner, 1943) and Asperger’s disorder (1944) and many research reports relevant to ASD. In recent years, the concept has been accepted and many researchers have thought of the two disorders as developmental disorders in the same clinical group. But, the sameness and differences of both classical case reports have been discussed for long time. Even recently, when the concept has been spread to the world, “ASD” is not used as the formal diagnostic name (Diagnostic and Statistical Manual of Mental Disorders Forth Edition Text Revision (DSM-IV-TR), American Psychiatric Association (APA), 2000; International Classification of Diseases and Related Health Problems10th Edition (ICD-10), World Health Organization, 1994).

The present study aimed to review the historical transitions from the first case report to later appearances of the concept, and to consider influence of the transitions upon the diagnosis. The final section showed advantages and disadvantages of the concept of ASD.

2. Starting Point for the concept of ASD

2-1. Origins of the Word “Autism”

It is well-known that the term “Autism” is derived from Greek language “Autos”, meaning self (Hirai, 1968). According to Hirai (1968), Bleuler (1911) was the first to use “Autismus (a German word)” as the term to refer to the mental states of human beings based on “Autos”. He used the term in research reports on dementia praecox and the term referred to were mental states that had begun “to lose relationships with external world and lead a life of one’s own world (internal world)”, “to minimalize contacts with external world and withdraw into one’s own world”, or “to be divorced from reality because the patient’s internal world was relatively and/or absolutely occupied in the patients life”. He used the term not only for dementia praecox but also for schizophrenia. However, as Hirai (1968) pointed out, it is necessary to take into account that there are differences in the meaning of the word “autism” which was used by Kanner (1943) to explain clinical condition of children because Bleuler (1911) referred the mental states of patients in early adolescence and adulthood.
2-2. Case Report by Kanner in 1943

At 1943, Kanner published a clinical case report entitled "Autistic Disturbances of Affective Contact" and used the term “autism” for the first time to report on the clinical group of children whose symptoms corresponded with autistic disorder in the present diagnosis. Kanner’s report seemed to appear suddenly without any research background, but it would be natural to place Kanner’s report on the psychiatric research trends like the study by Bleuler (1911) as mentioned above. According to Hirai (1968), since the 1900s, researches about the childhood schizophrenia have accumulated gradually; Heller’s syndrome (childhood disintegrative disorder as a present diagnosis) was reported for the first time this century (Heller, 1908). Moreover, prior to Kanner’s case report, some researchers hypothesized that the fundamental impairments of childhood schizophrenia were thought to be primarily disturbances of affective contact, the secondary impairments being language disorders (e.g., Despert, 1941). In this context, Kanner reported on eleven child patients who had common clinical conditions in 1943 and in the following year, named this clinical group “early infantile autism” (Kanner, 1944). Kanner was the first to use “autism” to refer to the diagnosis mentioned above, though some researchers had reported patients who had similar conditions.

The conditions that were consistent among 11 patients reported by Kanner (1943) are as follows. First, the patients were extremely aloof and autistic. They often refused to being contacted by their parents and doctors, and preferred to be alone. Second, they had language disorders. For instance, some of them did not have obvious languages until the age of 3 and the others had echolalia, selective mutism, inappropriate intonations and accents, failure to constitute structure of a sentence and to use the personal pronoun. Third, some patients had an excellent memory. Kanner (1943) referred to this memory skill as mechanical memory; they tended to remember unsocial things such as the number of pages in the encyclopedia, and the day and date of the calendar. Fourth, they showed abnormal behaviors which were also termed as “insistence on sameness”. Some patients threw dramatic temper tantrums when furniture placements or route directions were changed without their knowledge. Their interests were also restricted and some of those who did express interests did so only for mechanical things like numbers and not for social things like playing with other people. In addition to these characteristics, Kanner reported difficulties in acquiring lifestyle habits such as dietary habits, changing clothes, patterns of elimination and so on. After the detailed report (Kanner, 1943), he conceptualized and redrafted the diagnostic criteria for early infantile autism several times (e.g., Kanner, 1944; Kanner, 1951) and defined the main clinical conditions for the disorder with Eisenberg (Eisenberg & Kanner, 1956). The conditions were two: 1) extreme autistic conditions (aloofness), and 2) extreme insistence on keeping sameness.
While Kanner changed later his assertions for the cause of autistic disorder, he hypothesized the specific cause at first report as follows, "We must, then, assume that these children have come into the world with innate inability to form the usual, biologically provided affective contact with people, just as other children come into the world with innate physical or intellectual handicaps" (Kanner, 1943, p. 250). He thought the specific cause was an innate inability to make and keep relations with other people. It is an undisputed fact that he emphasized the impairments of social interaction as the cause though he changed his etiology of autistic disorders.

2-3. Case Report by Asperger in 1944

Asperger introduced four patients in case report entitled "Die ‘Autistischen Psychopathen’ im Kindesalter" (Asperger, 1944) one year after Kanner's report (1943). While Asperger's report was published without any connections with Kanner's report as many researchers pointed out later (e.g., Wing, 1981), there were seemingly coincidental overlaps between several characteristics of the patients in the two reports. The patients in Asperger's report (1944) had excellent memories (e.g., memory for machineries) and restricted interests in particular things. Moreover, they also favored to be alone; they did not participate in play with their brothers and often stayed away from other children in school. On the other hand, some of the patients demonstrated abnormal approach behaviors with other people. For example, they held the floor when speaking about their pet topics and spoke to people as and when they liked, without any consideration for others involved. The patients did exhibit less severe linguistic developmental delays, using grammar appropriately and having an extensive command of vocabulary. However, their intonations and accents were inappropriate and they had less eye-contact with others.

While patients in Asperger's report, similar to the patients in Kanner's report, were unable to make and maintain relations with others and had restricted interests, they also had good intellectual ability and less severe linguistic developmental delays, which were different from Kanner's patients. These contrasts and similarities led to long debates about the differences between the two disorders in Kanner’s and Asperger’s reports.

2-4. Similarities and Differences between Kanner’s Report, Asperger’s Report, and Childhood Schizophrenia

In the context of psychodynamic research, which formed the basis of clinical thinking around the 1950s, early infantile autism proposed by Kanner (1944) was thought of as one clinical condition of childhood schizophrenia (Bender, 1959; Kanner, 1949) until Asperger’s reports garnered widespread international attention. Later, the differences between early infantile autism and childhood schizophrenia started to be discussed based on the factual evidence, along with
increased awareness of Asperger’s case reports and debates surrounding Kanner’s and Asperger’s case reports. A summary of the contrasts and similarities between the two case reports, and the differences between autistic disorder and childhood schizophrenia will now be explored.

In the beginning, Asperger’s report, first published in German, was less well-known than Kanner’s report in the world amongst non-German-speaking spheres (Wing, 1981). It took about 20 to 30 years from when it was first published for his report to be cited in English research papers and become globally recognized (Isaev & Kagan, 1974; van Krevelen, 1962; van Krevelen, 1971; Wing, 1976; Wolff & Barlow, 1979). In these research papers, Wing (1981) introduced Asperger’s case report using the new term “Asperger’s syndrome” and this research paper spread the knowledge of the syndrome all over the world. Wing was concerned that the term “autistic psychopathy”, which Asperger used in his report, might create a misconception that the syndrome referred to one psychopathic personality with sociopathic behaviors, and introduced the term “Asperger’s syndrome” as a neutral term.

It is not hard to anticipate that the appearance of Asperger’s syndrome created a dispute about the differences from clinical cases proposed by Kanner. As mentioned above, these two disorders had common characteristics and looked similar at first glance. However, van Krevelen (1971), Wolff & Barlow (1979), and even Asperger (1966) recognized Asperger’s syndrome (autistic psychopathy) as a different disorder from early infantile autism (Kanner, 1944). According to Asperger (1966), early infantile autism was one specific psychopathic process and Asperger’s syndrome (autistic psychopathy) was one syndrome as a stable personality trait. However, the indication seems to be unclear because Asperger did not define the difference between psychopathic process and personality trait.

On the other hand, van Krevelen showed the contrasts and similarities between the two disorders from the 1960s (e.g., van Krevelen, 1962; van Krevelen, 1971). The four main themes of contrasts are as follows: 1) social interaction with others, 2) verbal communications, 3) nonverbal communications, and 4) restricted interests and stereotypic behaviors.

1) Social interaction with others:

Both patients had disturbances of affective contact with others and stayed aloof. Early infantile autism had the impairments in their core personality, but autistic psychopathy did not necessarily have the impairments. Patients with early infantile autism always remained aloof and those with autistic psychopathy sometimes showed abnormal approaching behaviors or passive behaviors.
2) Verbal communications:

Early infantile autism did not have languages or developmental delays of verbal communication. Even though they acquired language skills, they used abnormal verbal communication such as echolalia. Autistic psychopathy usually acquired the skills and had knowledge of grammar and vocabulary. But, they often had pragmatic errors and their talks were inappropriate in social context.

3) Nonverbal communications:

Patients with early infantile autism seldom used nonverbal communication tools like gestures in their early childhood. Patients with autistic psychopathy used nonverbal communication tools with spoken languages but the manner in which these were used was peculiar.

4) Restricted interests and stereotypic behaviors:

Both patients showed extremely restricted interests. Patients with early infantile autism were poor in imaginative play and repeated stereotypic behaviors to others and things. Autistic psychopathy had an excellent memory for numbers (e.g., calendar) and usually accumulated knowledge only to suit their interests, not others.

These disputes continued until Wing proposed the concept of ASD (Wing, 1988). While many researchers discussed the contrasts and similarities of the two disorders, the comparisons between early infantile autism and childhood schizophrenia also became a topic of debate, and was affected by the increased number of empirical studies and changes of etiology for autism. Among many researchers, Rutter (1968) or Kolvin and his colleagues (Kolvin, 1971; Kolvin, Garside, & Kidd, 1971; Kolvin, Humphrey, & McNay, 1971; Kolvin, Ounsted, Humphrey, & Garside, 1971; Kolvin, Ounsted, Richardson, & Garside, 1971; Kolvin, Ounsted, & Roth, 1971) in particular, pointed out the differences based on detailed studies.

The first basis of comparison between early infantile autism and childhood schizophrenia was ages at onset. Early infantile autism usually develops before the age of three years and childhood schizophrenia after the age of five years or usually during childhood. The second basis of comparison was family history. Where almost 10% of parents of patients with childhood schizophrenia had schizophrenia, this was seldom the case in early infantile autism. The third basis of comparison was intellectual function. Patients with early infantile autism often had mental retardation and sometimes had excellent memories in a specific field. Those with childhood schizophrenia seldom displayed these two characteristics. The fourth basis of
comparison was delusion and hallucinosis. Early infantile autism patients seldom suffered from delusion and hallucinosis but childhood schizophrenia patients usually did. The fifth basis of comparison was the problem with social interaction. All patients with early infantile autism had difficulties in making and keeping relationships with others. On the other hand, patients with childhood schizophrenia could keep the relationships unless their personalities were extremely disintegrated. Moreover, psychosocial backgrounds (e.g., abuse) and episodes of epilepsy also factored into their background. As such, many researchers came to consider that early infantile autism was a different disorder from childhood schizophrenia. In other words, with the changing of the etiology, early infantile autism came to be identified as a developmental disorder rather than an acquired mental disorder until 1980s, when the researchers started to focus on the differences between early infantile autism and Asperger’s syndrome.

3. The Concept of ASD and Diagnostic Criteria

3-1. The Genesis of the Concept of ASD

In 1981, Wing expressed her view that, even while she agreed with the contrasts and similarities between two disorders as indicated by van Krevelen (1971) or Wolff and Barlow (1979), early infantile autism and Asperger’s syndrome were alike rather than different. She also showed that the difference could be explained in terms of the severity of the impairments. Her fresh viewpoint was based on one epidemiological study which was performed by Wing and Gould (1979). Wing and Gould performed the epidemiological study in the southeast of London and conducted it on children with mental retardation and physical impairments to identify whether the children were autistic or in an autistic-like state, regardless of the level of intellectual functions. As a result, they found out that several autistic behaviors during childhood could be classified into clusters of three similar characteristics: 1) absence or impairments in social interaction with other people, 2) absence or impairments in understanding and using language including verbal and nonverbal communications, and 3) impairments in flexible imagination, and/or restricted and stereotypic interests and behaviors. These clusters were known as triad impairments and each impairment varied depending on the severity of the disorders, and was also related to intellectual functions. In 1988, based on the result of this study and considering the differences highlighted by van Krevelen (1971) or Wolff and Barlow (1979), Wing developed the concept of the autistic continuum or the autism spectrum (Wing, 1988). Later, Wing also highlighted eight common characteristics between the two disorders (Wing, 1991): 1) higher frequency of occurrence in males, 2) aloofness in social relationships, 3) abnormal use of languages (mistakes in the use of personal pronouns and the presence of unique expressions), 4) abnormal nonverbal communication (low eye-contact and the presence of incomprehensible gestures), 5)
absence of imaginative play (e.g., pretend play), 6) repeated and stereotypic behaviors, 7) hypersensitivity to sensory stimuli, 8) imbalanced cognitive ability (e.g., some patients had low intellectual ability and excellent memories for machinery), and 9) others (e.g., difficulties in controlled skilled motor behaviors). Wing insisted that the triad impairments were the core characteristics in ASD and that the other impairments might be derived from the triad impairments. Thus, she maintained that there were common impairments between early infantile autism and Asperger's syndrome, and that the differences in the clinical conditions between the two disorders could be interpreted as differences arising from the intellectual ability and the severity of the impairments.

3-2. Changes in Diagnostic Criteria before and after ASD Was Conceptualized

The concept of ASD was proposed after long discussions on the differences between early infantile autism and Asperger's syndrome as mentioned above. We can also see the influences of the discussion on the diagnostic criteria for autism. Recently, the Diagnostic and Statistical Manual of Mental Disorders (DSM) has been used as one of the main diagnostic criteria for developmental disorders. Here, the history of changes to the criteria based on DSM and the relationships between the ASD concept and the present criteria will be discussed.

The term “autism” appeared firstly in the first edition of DSM (DSM-I: APA, 1952), where “autism” was not an independent disorder but was one of the words used to indicate mental states of childhood schizophrenia (Table 1).

<table>
<thead>
<tr>
<th>Table 1 Diagnostic criteria for schizophrenic reaction, childhood type on DSM-I</th>
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<tr>
<td><strong>000-x28 Schizophrenic reaction, childhood type</strong></td>
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<tr>
<td>Here will be classified those schizophrenic reactions occurring before puberty. The clinical picture may differ from schizophrenic reactions occurring in other age periods because of the immaturity and plasticity of the patient at the time of onset of the reaction. Psychotic reactions in children, manifesting primarily <strong>autism</strong>, will be classified here. Special symptomatology may be added to the diagnosis as manifestations</td>
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*The term “autism” is marked up by the present author.

In 1952, DSM-I was published just nine years after Kanner’s report appeared (1943) and the criteria reflected the view that autism was a mental state in childhood schizophrenia rather than as a developmental disorder. This trend of thought did not change even after 16 years from DSM-I. In the DSM second edition (DSM-II: APA, 1968), the term “autism” was not described. Instead, the term “autistic “ was included as a more precise word to represent mental states
Table 2 Diagnostic criteria for schizophrenia, childhood type on DSM-II

295.8 Schizophrenia, childhood type
This category is for cases in which schizophrenic symptoms appear before puberty. The condition may be manifested by **autistic**, atypical and withdrawn behavior; failure to develop identity separate from the mother's; and general unevenness, gross immaturity and inadequacy in development. These developmental defects may result in mental retardation, which should also be diagnosed. (This category is for use in the United States and does not appear in ICD-8. It is equivalent to "Schizophrenic reaction, childhood type" in DSM-I.)

*The term “autistic” is marked up by the present author.

DSM-I and DSM-II sometimes made the researchers and doctors confused because these criteria did not offer an operational diagnostic system and the classifications of disorders were not perfectly confirmed; some disorders were diagnosed based on symptomatic states and others diagnosed based on etiology. From DSM third edition (DSM-III: APA, 1980), the operational diagnostic system (multiaxial diagnostic system) was introduced and the diagnostic criteria became clearer than previous versions. In DSM-III, infantile autism was described as an independent disorder. This seemed to have been influenced by the view that infantile autism is different from childhood schizophrenia. Even so, the criteria for infantile autism contained in part descriptions of schizophrenia. The remaining descriptions might cause us to consider the difficulties in distinguishing infantile autism from childhood schizophrenia (Table 3).

Table 3 Diagnostic criteria for infantile autism on DSM-III

299.0x Infantile Autism
A. Onset before 30 months of age.
B. Pervasive lack of responsiveness to other people (autism).
C. Gross deficits in language development.
D. If speech is present, peculiar speech patterns such as immediate and delayed echolalia, metaphorical language, pronominal reversal.
E. Bizarre responses to various aspects of the environment, e.g., resistance to change, peculiar interest in or attachments to animate or inanimate objects.
F. Absence of delusions, hallucinations, loosening of associations, and incoherence as in Schizophrenia.

The revised version of DSM-III (DSM-III-R: APA, 1987) was published seven years after
Table 4 Diagnostic criteria for autistic disorder on DSM-III-R

distance=68 height=20
DSM-3rd (1980) ; 68

299.00 Autistic Disorder

At least eight of the following sixteen items are present, these to include at least two items from A, one from B, and one from C.

Note: Consider a criterion to be met only if the behavior is abnormal for the person's developmental level.

A. Qualitative impairment in reciprocal social interaction as manifested by the following:

(The examples within parentheses are arranged so that those first mentioned are more likely to apply to younger or more handicapped, ante the later ones, to older or less handicapped, persons with this disorder.)

(1) marked lack of awareness of the existence or feelings of others (e.g., treats a person as if he or she were a piece of furniture; does not notice another person's distress; apparently has no concept of the need of others for privacy)

(2) no or abnormal seeking of comfort at times of distress (e.g., does not come for comfort even when ill, hurt, or tired; seeks comfort in a stereotyped way, e.g., says "cheese, cheese, cheese" whenever hurt)

(3) no or impaired imitation (e.g., does not wave bye-bye; does not copy mother's domestic activities; mechanical imitation of others' actions out of context)

(4) no or abnormal social play (e.g., does not actively participate in simple games; prefers solitary play activities; involves other children in play only as "mechanical aids")

(5) gross impairment in ability to make peer friendships (e.g., no interest in making peer friendships; despite interest in making friends, demonstrates lack of understanding of conventions of social interaction, for example, reads phone book to uninterested peer)

B. Qualitative impairment in verbal and nonverbal communication, and in imaginative activity, as manifested by the following:

(The numbered items are arranged so that those first listed are more likely to apply to younger or more handicapped, and the later ones, to older or less handicapped, persons with this disorder.)

(1) no mode of communication, such as communicative babbling, facial expression, gesture, mime, or spoken language

(2) markedly abnormal nonverbal communication, as in the use of eye-to-eye gaze, facial expression, body posture, or gestures to initiate or modulate social interaction (e.g., does not anticipate being held, stiffens when held, does not look at the person or smile when making a social approach, does not greet parents or visitors, has a fixed stare in social situations)
DSM-III. It was innovative that the autistic disorder supposed to be diagnosed by triad impairments and the relations with the disorder and schizophrenia were clarified. At the level of diagnostic criteria, autistic disorder tended not to be identified and aligned as one of the clinical conditions of schizophrenia. Moreover, the revised version indicated the specific diagnostic criteria and the required numbers of these criteria to diagnose the disorder. These innovations generally served to increase opportunities to diagnose autistic disorder (Table 4).

DSM forth edition (DSM-IV) and DSM-IV text revision (DSM-IV-TR) were published in 1994
Table 5 Diagnostic criteria for autistic disorder on DSM-IV-TR

299.00 Autistic Disorder

A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3):

(1) qualitative impairment in social interaction, as manifested by at least two of the following:
   (a) marked impairment in the use of multiple nonverbal 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) a lack of social or emotional 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, as manifested by at least one of the following:
   (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

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.

C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.

*The term “autism” is marked up by the present author.*
and 2000, respectively (APA, 1994; APA, 2000). At present, autistic disorder is diagnosed based on these criteria, which highlights three main clinical conditions: 1) qualitative impairment in social interaction, 2) qualitative impairments in communication, and 3) restricted, repetitive, and stereotyped patterns of behavior interests and activities. Additionally, the new criteria makes it clear that autistic disorder is not comorbid with Rett’s disorder and childhood disintegrative disorder, both of which were identified as similar clinical conditions around the 1940s (Table 5).

Figure 1 shows the historical changes of diagnostic criteria for autistic disorder that were influenced by several debates about the diagnoses and differentiation from other disorders.

![Fig. 1. Major findings and historical changes of the concept “autism” and the diagnostic criteria.](image)

Boxes of upper parts (in black) show major findings and boxes of lower parts (in gray) show the diagnostic criteria. Curved lines from upper parts to lower parts (in gray) show the influences of major findings and a research trend (an oval) on the diagnostic criteria. Arrows in black (dotted and solid lines) show periods of discussions about differences between two disorders (e.g., infantile autism vs. childhood schizophrenia).

It is obvious that the triad impairments proposed by Wing (1988) started to be introduced to diagnose autistic disorder in DSM criteria. However, the present diagnostic criteria do not use the expressions “ASD (Autism Spectrum Disorders)”. In DSM-IV-TR, the diagnostic name “autistic disorder” and “Asperger’s disorder” were used and, in ICD-10, “childhood autism” and “Asperger’s syndrome” were used, respectively.

As mentioned above, in DSM-IV-TR, the main clinical conditions to diagnose autistic disorder are 1) qualitative impairment in social interaction, 2) qualitative impairments in communication, and 3) restricted, repetitive, and stereotyped patterns of behavior interests and activities. At least
one of these conditions is supposed to develop before the age of three years. On the other hand, the diagnostic criteria for Asperger’s disorder are as follows: 1) qualitative impairment in social interaction, and 2) restricted, repetitive, and stereotyped patterns of behavior interests and activities. Based on the criteria, patients with Asperger’s syndrome do not show severe delays in language development or display abnormal daily behaviors. In other words, the differential diagnosis between autistic disorder and Asperger’s disorder seems to be dependant on whether or not the patient has developmental delays in languages and in cognitive ability. However, as Wing (1981) pointed out, patients with Asperger’s syndrome usually show abnormalities for understanding and using verbal and nonverbal communication even though they do not have delays in language development. Here, the triad impairments of ASD seem to be similar between autistic disorder and Asperger’s disorder.

Moreover, the two disorders, “autistic disorder” and “Asperger’s disorder”, are viewed as subcategories in one main category named as “Pervasive Developmental Disorders (PDD)” on DSM-IV-TR. According to the criteria, other than the two disorders, PDD is supposed to include “Rett’s disorder”, “childhood disintegrative disorder”, and “pervasive developmental disorder not otherwise specified”. Moreover, subcategories of PDD (F84) in ICD-10 are as follows: childhood autism, atypical autism, Rett’s syndrome, other childhood disintegrative disorder, overactive disorder associated with mental retardation and stereotyped movements, Asperger’s syndrome, other pervasive developmental disorders, and pervasive developmental disorder, unspecified. According to Kikuchi (2009), the term “ASD” and “PDD” were similar but the concept of ASD covered more diverse clinical conditions than that of PDD because ASD concept seemed to contain pragmatic disorders. But, taking into account that Wing (1981) developed the concept of ASD based on clinical case reports by Kanner (1943) and Asperger (1994/1993), there are some diagnostic gaps between ASD and PDD, and it seems premature to determine which concepts would cover more diverse clinical conditions. For example, Rett’s syndrome and childhood disintegrative disorder, both of which were one of the subcategories in PDD but not in ASD, showed different developmental courses from autistic disorder or Asperger’s syndrome, in which Rett’s syndrome and childhood disintegrative disorder appear to show physically and psychologically normal development until specific developmental points and then show developmental regressions in psychomotor ability. The present study does not adopt the extended interpretation for the ASD concept but takes the viewpoint that the concept of ASD is developed based on the triad impairments and minimally covers autistic disorder and Asperger’s syndrome, not other pervasive developmental disorders such as Rett’s syndrome or childhood disintegrative disorder.
4. Advantages and Disadvantages of the Concept of ASD

As mentioned in previous sections, ASD has been conceptualized through long historical discussion and then started to be accepted by researchers and doctors. Although “ASD” is not used as the formal diagnostic name at present time, the concept will be more accepted not only by academic field but also by public society. This current trend is partly identifiable on the next version of DSM (DSM-5, APA) which is now developed by DSM-5 Work Groups (the draft criteria of DSM-5 can be accessed via the web site (http://www.dsm5.org/Pages/Default.aspx:accessed on March 1st, 2011 ) though the draft are not final version). In the draft, Autistic Disorder or Autism Spectrum Disorder is used as a candidate diagnostic name which covers autistic disorder and Asperger’s disorder diagnosed by DSM-IV TR now a days, and Asperger’s disorder is eliminated. Of course, it is not sure that the draft will be used as the formal criteria in 2013. But, this dynamic change of the criteria seems to be a piece of evidence that researchers and medical doctors partly begin to accept the concept of ASD proposed by Wing (1988) initially (Figure 1).

This current trend will create both advantages and disadvantages in the not-so-distant future. One of the advantages is an extension of support for children who have clinical characteristics of ASD. With the concept of ASD, children will receive social assistance like educational support more easily than before even if the children will have the clinical condition slightly but not meet the current criteria for autistic disorder definitively. The “spectrum” concept will enable us to offer the support depending on clinical condition of children, not on “rigid” diagnostic name. Moreover, this advantage will go with the trend of the times in Japanese educational system. In Japan, according to some legal amendments (e.g., Act on Partial Revision of the School Education Act. Act No. 80 of 2006), traditional special education was renamed “special needs education”. This transformation requires us to provide educational opportunity and support for children to meet the children’s educational needs such as social impairments or attention deficits. Thus, the ASD concept will work well in Japanese educational system in the near future.

Furthermore, the concept of ASD opens a window of opportunity for investigating neurological substrates which are common with autistic disorder and Asperger’s disorder. As mentioned above, it has been suggested that some dysfunctions in the central nervous system are etiologically attributed to the two disorders. Both disorders are quite similar in terms of clinical conditions and are viewed as developmental disorders on the same continuum of “ASD”. Thus, it would be acceptable to say that some dysfunctions in the central nervous system, especially in brain function, overlapped between the two disorders. The common dysfunctions in ASD might not perfectly be able to distinguish children with and without ASD such as monogenic disease because historically, long discussions about the clinical conditions did not
indicate the “absolute” diagnostic criteria, such as genetic markers, which provide a definitive
diagnosis. Rather, it seems reasonable to consider that the degree of the dysfunctions in the
central nervous system would be reflected in the clinical condition as one of the spectrum states.
Thus, the neurological dysfunctions are expected to be better elucidated assuming the disorder
as a spectrum condition rather than as an independent disorder which would be perfectly
distinguished from typically developing and developed people or people with other disorders.

On the other hand, it is undeniable that there are several problems to accept the concept
perfectly. One of the problems is lack of criteria or index capable of objectively measuring the
severity of ASD. While we empirically-admit that the severity of ASD ranges from mild to
severe, we do not have objective index to measure the severity which are grounded in factual
evidence. The lack will create confusion for medical doctors and school teachers to access the
children's clinical condition precisely and, at worst, children have possibility to be placed on the
spectrum even though they do not have any clinical condition of ASD. Recently, several research
group have tried to formulate the index such as Autism Diagnostic Interview-Revised (ADI-R)
(Lord, Rutter, & Le Couteur, 1994) or Pervasive Developmental Disorders Autism Society Japan
Rating Scale (PARS) (PARS Committee, 2008). However, these index can be used only in several
countries and not be used worldwide. For example, ADI-R is used only in English-speaking world
and the Japanese translation of ADI-R is not “officially” accepted. The formulation of worldwide-
objective index for the severity of ASD is a matter of great urgency to utilize the advantages of
the concept as mentioned above.

Another problem is misconception about ASD. The concept of ASD will be more easily
accepted for school teachers and pupils than definitive diagnostic names because it can be fit in
special needs education in Japan today. However, the “easy” acceptance has a risk to rebuild a
wall of prejudice. Along with the spread of the ASD concept, unfortunately, a stereotyped image
has been also reinforced though educational and psychological support for ASD children has been
improved. Actually, some people involved in school education do not recognized ASD children as
“a child”, but as an “ASD” child. In other words, the word “ASD” has wings. The stereotyped
image may possibly increase undesirable situations for ASD children such as prejudice against
idea of special needs education. Thus, it is necessary to offer correct knowledge about the concept
and to provide opportunity for people to understand each ASD child regardless of the stereotyped
image. The knowledge and opportunity will deepen their understanding of ASD children, and
encourage effective educational and psychological support for ASD children in Japan.

Over the next decades, these advantages and disadvantages will be more cleared and the
concept of ASD will be also discussed. While we expect the new concept will create better future
for ASD children and people involved in bringing up them, we have to keep in mind that the
historical changes of the diagnostic name or criteria for ASD have caused a resulting misery for the children and people. Thus, further research and practice need to confront the disadvantages and utilize the advantages of the concept of ASD.

【Acknowledgements】

The study was supported in part by a JSPS Grant-in Aid for the Japan Society for the Promotion of Science Fellows (Y.K.). We thank Ms. Stephanie Chua for her assistance.

【References】


History of Autism Spectrum Disorders


自閉症スペクトラム障害の歴史: 診断をめぐる歴史的論争

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本研究では、自閉性障害の最初の研究報告から自閉症スペクトラム障害（Autism Spectrum Disorders: 以下 ASD）の概念までの歴史的な変遷を概観し、その変遷が診断に与えた影響を考察した。また、今日的に ASD の概念が有する利点と問題点を示した。ASD の概念は、障害名にとらわれずに、臨床症状に合わせた教育的支援を促すことや、自閉性障害とアスペルガー障害に共通した神経基盤を解明する可能性を秘めている。一方、ASD の概念にとって必須となる、障害の重症度を評価する基準の確立は遅れており、また概念の不正確な理解とともに偏見の再拡散という問題点も有していると考えられた。

キーワード: 自閉症スペクトラム障害 (ASD)・自閉性障害 (自閉症)・アスペルガー障害 (アスペルガー症候群)・診断・歴史的考察