

Published in final edited form as:

Hist Human Sci. 2013 July ; 26(3): 3–31. doi:10.1177/0952695113484320.

How autism became autism: The radical transformation of a central concept of child development in Britain

Bonnie Evans

King's College London, UK

Abstract

This article argues that the meaning of the word 'autism' experienced a radical shift in the early 1960s in Britain which was contemporaneous with a growth in epidemiological and statistical studies in child psychiatry. The first part of the article explores how 'autism' was used as a category to describe hallucinations and unconscious fantasy life in infants through the work of significant child psychologists and psychoanalysts such as Jean Piaget, Laretta Bender, Leo Kanner and Elwyn James Anthony. Theories of autism were then associated both with schizophrenia in adults and with psychoanalytic styles of reasoning. The closure of institutions for 'mental defectives' and the growth in speech therapy services in the 1960s and 1970s encouraged new models for understanding autism in infants and children. The second half of the article explores how researchers such as Victor Lotter and Michael Rutter used the category of autism to reconceptualize psychological development in infants and children via epidemiological studies. These historical changes have influenced the form and function of later research into autism and related conditions.

Keywords

autism; childhood schizophrenia; descriptive psychopathology; epidemiology; hallucination; infants; psychiatry

The concept of autism was coined in 1911 by the German psychiatrist Eugen Bleuler to describe a symptom of the most severe cases of schizophrenia, a concept he had also created. According to Bleuler, autistic thinking was characterized by infantile wishes to avoid unsatisfying realities and replace them with fantasies and hallucinations. 'Autism' defined the subject's symbolic 'inner life' and was not readily accessible to observers (Bleuler, 1950[1911]: 63). Psychologists, psychoanalysts and psychiatrists in Britain used the word autism with this meaning throughout the 1920s and up until the 1950s (e.g. Piaget, 1923). However, in the 1960s, many British child psychologists challenged the contentions about infantile thought assumed by Bleuler and created new methods to validate child psychology as a science, in particular epidemiological studies. 'Autism' was then completely reformulated as a new descriptive category to serve the needs of this new model of child development. From the mid-1960s onwards, child psychologists used the word 'autism' to describe the *exact opposite* of what it had meant up until that time. Whereas 'autism' in the 1950s referred to excessive hallucinations and fantasy in infants, 'autism' in the 1970s referred to a complete lack of an unconscious symbolic life. For example, Michael Rutter, a leading child-psychiatric researcher from the UK's Maudsley Hospital who

© The Author(s) 2013

Corresponding author: Bonnie Evans, King's College London, Strand, London WC2R 2LS, UK. bonnie.evans@kcl.ac.uk.

Reprints and permission: sagepub.co.uk/journalsPermissions.nav

conducted the first-ever genetic study of autism, claimed in 1972 that ‘the autistic child has a deficiency of fantasy rather than an excess’ (Rutter, 1972: 327). The meaning of the word autism was then radically reformulated from a description of someone who fantasized excessively to one who did not fantasize at all.

This article traces this radical transformation of the concept of autism in Britain, exploring the reasons behind the shift and the impact that it has had on psychological sciences relating to infants and children. It argues that the change in the meaning of autism was part of a more general shift in Anglo-American psychiatric reasoning which sought to understand psychological problems through epidemiological studies rather than individual cases. The introduction of psychiatric classificatory models has previously been explored in relation to the *Diagnostic and Statistical Manual (DSM)*, in particular the introduction of *DSM-III* in 1980 (Grob, 1991; Mayes and Horowitz, 2005; Wilson, 1993). However, few people have explored this in relation to child psychology and psychiatry. This article examines the way that epidemiological methods shifted and morphed central concepts in these fields, in particular the concept of autism. It argues that the diagnostic practices required of psychiatric epidemiology in the 1960s continue to influence contemporary theories and descriptions of autism in Britain.

There has been a phenomenal increase in diagnoses of autism since the 1960s which has attracted the attention of many researchers ranging from psychiatrists and social scientists to literary analysts (e.g. Murray, 2008; Nadesan, 2005; Silverman, 2011). Victor Lotter’s first epidemiological study of autism posited a rate of 4.5 per 10,000 children but a 2006 *Lancet* article claimed a rate of 116.1 per 10,000 children in the UK and this figure continues to rise (Baird *et al.*, 2006; Baron-Cohen *et al.*, 2009). Gil Eyal *et al.* have argued that, in the USA and many other western countries, diagnoses of autism rose after institutions for the ‘mentally retarded’ were closed down in the 1960s and children were integrated into new educational and social settings (Eyal *et al.*, 2010). Changes in diagnostic methods from the 1960s to the 1980s meant that autism came to be associated with ‘profound mental retardation and other developmental or physical disorders’ thereby increasing the number of children who were considered to display autistic traits (Wing and Potter, 2002). This explains why diagnostic rates of autism did not increase as much in France, where there was no great release of ‘retarded’ children from confinement in the 1960s and where children with developmental problems continue to receive institutional residential care up to the present day (Eyal *et al.*, 2010).

Another reason why diagnoses of autism have risen in Britain and elsewhere is because the closure of institutions for ‘mentally retarded’ children led parents to campaign for better diagnosis and recognition of their children’s problems. Pressure groups such as the UK Society for Autistic Children (est. London 1962) worked hard to ensure that new treatment methods were developed to enable their children to adjust to the new social roles that they were being forced to adopt. This led to a growth in new behavioural treatment methods as well as a massive backlash against psychoanalytic styles of reasoning. Chloe Silverman’s recent book *Understanding Autism* has explored this history in the United States, detailing the work of Bruno Bettelheim and others working at the University of Chicago as well as the parents who challenged them such as Bernard Rimland and Rosalind Oppenheim. Silverman’s work shows how parents have since actively advocated new therapies and funded new research into the condition including genetic and environmental studies (Silverman, 2011).

The closure of institutions for ‘mental defectives’ and the growth of parental advocacy groups help to explain the increase in cases of autism since the 1960s. However, it is important to position these changes in relation to broader shifts in the disciplines of child

psychiatry, psychology and psychoanalysis. Epidemiological studies in child psychiatry experienced a period of expansion in 1960s Britain in the wake of the 1959 Mental Health Act. Autism had always been central to the study of childhood psychopathology in Britain and the introduction of epidemiological studies provided the concept with a new framework in which it has since flourished. 'Autism' appropriated new meanings and this meant that it came to be more easily diagnosed in children who previously would not have been considered to display that particular thought abnormality.

Child psychology and psychiatry in Britain and the introduction of autism prior to 1959

As Gillian Sutherland, Deborah Thom, Nikolas Rose and others have documented, the 1920s and 1930s in Britain witnessed a vast expansion of charitable and governmental services to cater for the psychological problems of children (Rose, 1985; Sutherland and Sharp, 1984; Thom, 1992). In 1913, the Mental Deficiency Act was passed in England and Wales which ensured institutional care for all children identified as 'mental defectives'. In that same year, Cyril Burt was appointed as the first official government psychologist in the UK and tasked with assessing the levels of psychological disturbance in the child population. He worked with infant welfare centres, school medical inspection officers and reformatory and industrial schools in order to do this (Evans *et al.*, 2008). In the late 1920s, the Commonwealth Fund, an American philanthropic body, began to provide funds for the purposes of improving child guidance services in Britain (Thom, 1992). Early child guidance clinics were used to direct child-rearing practices and to guide the behaviour of problem children (Jones, 1999). The expansion of psychological services offered growing opportunities for child psychological professionals to observe and assess infants and children.

It was in this context that the terms 'autistic', 'schizophrenic' and 'psychotic' were introduced into the language of child psychological professionals in order to describe their child subjects. These were associated with a burgeoning discourse relating to the developing subjectivity of infants and children. The early 20th century had witnessed growing speculation about the nature of infantile and unconscious thought processes and their role in causing mental illness. Bleuler, Sigmund Freud, Carl Jung and Pierre Janet were all significant thinkers in this period who sought to unearth the forces that underlay psychological illness in the thoughts, experiences and traumas of childhood (Ellenberger, 1970). A lot of this work was taken up readily by a new generation of child psychological professionals in Britain, such as Susan Isaacs, Melanie Klein and Mildred Creak.

When Bleuler had coined the term 'autism' in 1911, he attributed its etymological roots to Freud, and ultimately Havelock Ellis, through the term '*autoerotism*' (Bleuler, 1950[1911]; McGuire, 1974: 172–9). Freud had used this word in 1905 to describe hallucinatory thinking in conjunction with self-soothing in a stage of thinking which preceded the infant's engagement with external reality (Freud, 2001[1905]). Bleuler also argued that the concept of autism was a refinement of Janet's *perte de la fonction du réel*. In 1903, Janet had explained the function of reality as a synthesis of all psychological functions ranging from automatic functions at the level of the nervous system up to complex thoughts and actions. If the nervous system was weak, psychological tension would drop and an individual would lose the ability to synthesize these complex functions and also lose the sense of reality (Janet and Raymond, 1903). He or she would then revert to a form of thinking which preceded the individual's ability to conceptualize the sense of self.

Although Bleuler's description of schizophrenia covered more than just autism – in particular, disturbances of attention, the will and the intellect – the concept was crucial to his

description of the schizophrenic's lack of contact with reality. According to Bleuler, when schizophrenics tried to conduct logical operations in thought, they were unable to draw upon all appropriate associations in the mind, thus leading to an unsatisfactory sense of reality. They therefore substituted this unsatisfactory reality with fantasies that more readily satisfied their affective needs. By blocking off the perceptive-sensory stimulations of the outside world, autistic thinking then came to obey its own special laws, which were no longer bound by the rules of logic (Bleuler, 1950[1911]: 373). It was thinking that took place 'in symbols, in analogies, in fragmentary concepts, in accidental connections', and it was the source of both delusion and 'crude offenses against logic and propriety' (ibid.: 66–7). Although autism was pathological within schizophrenia, Bleuler always considered it to be merely 'an exaggeration of a physiological phenomenon' that was present in all humans, and which manifested itself in normal fantasies and wishes (ibid.: 374). Bleuler argued that the sense of reality was lost in schizophrenics only in relation to matters that threatened to contradict their complexes, a concept which had originally been developed by Jung who had claimed that it was analogous to what Janet called *idée fixe subconsciente* (Ellenberger, 1970; Moskowitz, 2005). Freud would later expand on the way in which autoerotic thinking and, what he termed, primary narcissism were transformed via the onset of the Oedipus complex.

Bleuler's, Freud's and Janet's interest in the symptoms of autism and autoerotism in adults was shared by many other French alienists who had referred to aspects of autism as 'autophilia, egocentricity, ego-hypertrophy, and *augmentation du sens de la personnalité*' (Bleuler, 1950[1911]: 373). Some French writers, such as Henri Claude of the Hôpital Sainte-Anne in Paris, criticized Bleuler's direct association between autistic thought and the loss of the sense of reality (Claude *et al.*, 1924). However British researchers such as Creak, Klein and Isaacs followed Freud and Bleuler in linking autistic and autoerotic thought with hallucinatory thinking. They also drew substantially from the work of Jean Piaget in making these claims.

In 1922, Piaget gave a paper at the International Conference on Psychoanalysis, Berlin, entitled '*La pensée symbolique et la pensée de l'enfant*' where he put forward his theories on the way that infants developed a relationship to reality via their everyday interactions with people and objects (Chapman, 1988: 121). Drawing from Bleuler and Freud, he claimed that the pre-verbal stages of children's thought could be described as 'autistic' or 'symbolic'. During this stage of thinking, children could not follow logical rules and did not think conceptually and there was a predominance of visual imagery in their minds (Piaget, 1923: 273–304). These thought processes subsided as the infant became more aware of the concrete objects and reality surrounding him or her. Piaget drew direct analogies between infantile thinking and unconscious symbolism as described in psychoanalytic theory (Vidal, 1994: 209–10). He claimed that 'autistic' and 'symbolic' thought were both characterized by three distinctive features, namely, 'absence de suite logique, prédominance de l'image sur le concept, et inconscience des connexions qui relient les images successive entre elles' [an absence of logic, a predominance of visual imagery over conceptual thought, and no awareness of the connections that can be made between visual perceptions] (Piaget, 1923: 290–3, 303–4). Piaget also linked the concept of autism directly to the child's progressive attempts to engage with reality (Vidal, 1994: 209–10). He developed psychological tests which measured children's perception and self-awareness. In his 1929 publication *The Child's Perception of the World*, he reported the results of tests in which he had questioned children on their beliefs about the physical world and argued that their thought developed from primitive magical imagination through to logical reasoning. Drawing attention to Freud's work on mental economy, he argued that when adults thought symbolically, they 'condensed' concepts and 'displaced' one image or concept onto another because they experienced a reversion to primary autistic thinking in which no distinction was made

between the various external stimuli that bombarded the infant in her or his daily life (Piaget, 1923).

In Britain, child psychological professionals introduced these theories in the 1920s and 1930s. Freud's work had already developed an outlet in the British Psycho-Analytical Society, established by Ernest Jones in London in 1913. Melanie Klein, a Viennese émigrée and child analyst who had joined the society in 1926, was extremely influential on the psychological treatment of children in Britain (Steiner, 1991). In 1929 Klein published a paper on personification in the play of children in which she argued that if instinctual wish fulfilment dominated over a child's recognition of reality then the child could be described as experiencing a type of 'psychosis' (Klein, 1929), a term which Freud had used in 1894 to describe 'hallucinatory confusion' (Freud, 2001[1894]). In 1930, she argued that schizophrenia and psychosis should be diagnosed more often in children as this would help child psychologists to understand infantile thought and its extreme pathologies (Klein, 1930).

Susan Isaacs supported Klein's ideas about the importance of describing hallucinations and fantasies within infantile thought and also adopted Piaget's theories on child development. Isaacs was also an influential figure in child psychology in Britain, having supervised Burt's advanced psychology students at University College London and lecturing widely on psychology and psychoanalysis before being appointed as head of the Department of Child Development at the University of London's Institute of Education in 1933. She served on the editorial board of the *British Journal of Educational Psychology* and the *British Journal of Medical Psychology* (Sayers, 2001). In addition, she had been greatly influential in guiding government policy on childcare and education; for example, giving evidence to the Hadow Committee on Infant and Nursery Schools in 1933 and later the Home Office Care of Children Committee in 1945 (ibid.: 219; Wooldridge, 1994: 133–4).

Mildred Creak was another important British child psychological professional who sought to develop ideas on severe psychopathology and hallucination in infancy. She had trained in medicine at University College Hospital, London, and was appointed as head of child psychiatry at the Maudsley Hospital in 1931. Writing in 1937, she argued that although 'normal thought processes, at an early age, recapitulate those primitive and archaic forms so often seen in schizophrenics', childhood schizophrenia should be conceptualized as a 'reaction' which disturbed the normal development of infantile thought leading to problems in the formation of intellect and motor coordination. She claimed that in schizophrenic children, one could observe a 'tendency to fragmentation and interruption in the thinking processes' *as well as* 'dereistic thinking', which Bleuler used as a synonym for autistic thinking.¹ Her 1937 study was the first to present long descriptions of pre-pubescent children who developed what she understood as a 'schizophrenic reaction'. Along with Klein and Isaacs, she paved the way for more detailed discussions on the way that severe psychopathology should be conceptualized in infants and children.

The Second World War increased the opportunities for child psychologists to study the psychological problems of infants and children. In Britain, over 1 million unaccompanied children were evacuated from cities and many high-profile psychologists and psychoanalysts including Klein, Isaacs and John Bowlby established the Cambridge evacuation survey to study the effects of such major environmental changes (B. Harris, 1995; Rose, 1999: 165). At the same time, Anna Freud established wartime nurseries in London for children who could not be evacuated (Burlingham and Freud, 1943). Klein, Isaacs, Bowlby and Anna

¹ On Bleuler's use of the terms 'autistic' and 'dereistic' see Shorter (2005).

Freud employed theories of unconscious processes to explain pathological thought in the infants that they observed.

It was widely thought that 'maternal deprivation' could help to explain why some children developed pathological thinking patterns while others did not. In the early 1940s in the USA, Laretta Bender from the Bellevue Hospital, New York, and William Goldfarb from the Ittleson Center for Child Research, New York, conducted studies on maternal deprivation which echoed the studies on evacuated children in the UK. All of these studies drew similar conclusions. As Bowlby put it, 'with monotonous regularity each put his finger on the child's inability to form relationships as being the central feature from which all other disturbances sprang' (Bowlby, 1951: 34). This was said to affect the child's ability to conceptualize as well as his or her intelligence and capacity for relationships. Bowlby and Bender, in particular, thought that these disturbances affected the unconscious mental processes of these children causing them to retreat from the outside world.

In the early 1940s, major disagreements arose as to how, exactly, the infant's early relationships affected her or his thinking processes to cause psychopathology. Klein and her supporters claimed that they had found evidence for subjective responses to instincts in infants that presupposed the existence of complex mental mechanisms which could control, redirect and repress unconscious instinctual urges from the very first moments of life. Early in 1943, Susan Isaacs described in detail her thesis that children experienced 'phantasies' in relation to their early experiences which led them to repress or divert internal forces and drives which could manifest problems in later life. Isaacs claimed that from the moment that an infant experienced an instinctual urge, he or she also had the capacity to fantasize about that urge and to imagine the direction it might take. As Isaacs put it, 'phantasy is the mental corollary, the psychic representative of instinct'. Isaacs argued that 'every impulse, every feeling, every mode of defence is expressed and experienced in such a specific phantasy, which gives it mental life and shows its specific direction and purpose' (Isaacs, 1991[1943]: 277-8).

Fantasies could be associated with libidinal instincts or drives as well as destructive instincts and impulses. Using evocative language, Isaacs claimed that if the child was feeling 'desires towards his mother', he would experience these as 'I want to suck the nipple, to stroke her face, to eat her up, to keep her inside me, to bite the breast, to tear her to bits, to drown and burn her, to throw her out of me' (Isaacs, 1991[1943]: 277). Infants were also thought capable of altering and prohibiting their unconscious desires (Heimann, 1991[1943]). Within this model, it was possible to understand how infants could employ hallucinations in a pathological way which prevented them from developing a satisfactory relationship to reality. In other words, according to Klein and Isaacs, infants were never wholly 'autoerotic' or 'autistic' and thus some forms of hallucination, even in infants, could concern their relationships to others. Psychopathology could thus be created, via relationships, in infants from the very first moments of life.

The critics of the Kleinian analysts argued that they were attributing advanced psychical processes to infants without giving thorough evidence and explanation for these claims. Anna Freud argued that after an infant was born there was a period of roughly 6 months when the child was inherently 'narcissistic and auto-erotic'. During this phase, the *aim* of an instinct was fundamental but the object of that instinct was 'only dimly taken into account'. In this state 'satisfaction counts for everything and objects count for nothing'. The child had no awareness of the effects of his actions on others, had no sense of guilt or anxiety over his actions, and no sense of loss (Freud in King and Steiner, 1991: 418-21). Anna Freud's position was that environmental factors and relations could affect a child to cause psychopathology and reversion only from 6 months old.

Although the precise concept of 'autism' was rarely mentioned in these discussions, the descriptive concepts of 'autoerotism' and 'primary narcissism', a term which had been developed by Sigmund Freud as a response to Bleuler's concept of autism, were discussed frequently. These discussions of whether, and at what age, one could attribute desires and thoughts to infants were never concluded. Yet they continued to exist as important conceptual problems in child psychology because they concerned the origins of relational thought. Cyril Burt and other educational psychologists in the 1940s also debated how to attribute mental activity and thoughts to infants, clashing dramatically with behaviourists such as J. B. Watson who argued that it was not the vocation of psychologists to describe the thoughts that they imagined infants to have (Watson, 1925; Burt, 1941).

While these controversies were still raging in Britain, Leo Kanner from Johns Hopkins University Hospital in Baltimore claimed that he had identified a unique psychological disorder in children characterized by 'extreme autism, obsessiveness, stereotypy, and echolalia'. He referred to this as 'inborn autistic disturbances of affective contact', claiming that the symptoms brought 'the total picture into relationship with some of the basic schizophrenic phenomena'. Unlike Klein and Isaacs, Kanner was reserved in the attribution of unconscious thought processes and a symbolic life to infants. Instead, he described a list of cases in which he had observed similar symptomatology. Kanner's children were described as having a 'good relation to objects', in particular those 'that do not change their appearance and position, that retain their sameness and never threaten to interfere with the child's aloneness'. On the other hand, the children's relation to people was 'altogether different' and Kanner described instances in which the children would barely notice when other people entered a room. He also noted that these children tended to use language in a very literal fashion and that they failed to relate to other people physically (Kanner, 1943).

Kanner's interest in children who found it difficult to relate to others echoed the general interest of all child psychiatrists in the period. However, his article was significant because it presented a new way to describe infantile thought. Rather than attributing complex unconscious thought processes to children that he observed, he simply described the behaviour of a group of children with similar symptoms. He used the word 'autistic' to convey the fact that the children appeared not to be engaged with their external environment. However, this descriptive mode in child psychiatry was not standard at this time and many other child psychological professionals in both Britain and the USA continued to employ the concepts of autism in conjunction with autoerotism, primary narcissism and symbolic thinking to understand infantile psychopathology and problems with developing relationships.

Postwar conceptualizations of autism and infant psychopathology

After the war, the controversies over how to describe infantile thought continued. The diagnoses of schizophrenia, psychosis and autism in children were largely interchangeable during the 1940s and 1950s. In the USA, Bender and others employed a Kleinian model to understand infant and child psychopathology and focused on schizophrenia as the central psychopathological problem of childhood. Bender was an important figure in the development of perceptual tests for children. In 1947, she published a study on 'one hundred schizophrenics' who had attended the Children's Department at Bellevue during the period 1937–47. She defined childhood schizophrenia as

... pathology in behavior at every level and in every area of integration or patterning within the functioning of the central nervous system, be it vegetative, motor, perceptual, intellectual, emotional or social. (Bender, 1947: 40)

She claimed that childhood schizophrenia struck ‘at the substratum of integrative functioning or biologically patterned behavior’, a definition which had resonances with Janet’s *perte de la fonction du réel*. Bender believed that child schizophrenics became fixated on the stage of infancy characterized by ‘internalised objects’ (Bender, 1947: 51). She also claimed that they were particularly driven by infantile aggression. This caused ‘condensation or the superimposing of many levels of thinking and psychological problems’. Whereas in normal children, symbolism became abstract and appeared only in dreams, fantasies and fairy tales, the symbolic thought of schizophrenic children remained concrete and structured their entire thought disorder. She drew from Arnold Gessell’s *Embryology of Behaviour* (1945) to argue that psychotic children retained primitive embryological motor functions that prevented the integration of mental functions and the establishment of an ego and a relation to reality. Psychotic children retained ‘primitive homeostatic control and primitive patterns of sleep and wakefulness with waning states of consciousness’ (Bender, 1953: 674–5).

In the UK, Elwyn James Anthony and Kenneth Cameron at the Maudsley Hospital employed similar theories of the infantile unconscious to understand childhood schizophrenia and autism. In 1953, they opened a ‘psychotic clinic’ which received referrals of the most severe cases of psychological disturbance in children from across Britain. Anthony, who had trained under Aubrey Lewis and Jean Piaget (Hersov, 1986; Institute of Psychiatry, 1951: 13), argued that observations of these children could be used to formulate a general theory of infantile thought and psychology. In 1958, the *European Journal of Child and Adolescent Psychiatry* published Anthony’s ‘An Aetiological Approach to the Diagnosis of Psychosis in Childhood’ which was very well received (J. K. Wing, 1966; Rutter, 1966: 16).

Anthony argued that the age at which a child developed autism or psychosis affected the form that the disorder took. He believed, as Anna Freud did, that ‘every infant begins its psychological life in an autistic state’. Using a concept borrowed from Sigmund Freud’s *Beyond the Pleasure Principle*, Anthony employed a ‘barrier hypothesis’ to explain the development of different types of autism in children. He argued that during normal development, the constitutional barrier which protects the infant is supplemented by a maternal barrier, which eventually gives way to an ‘autonomous ego barrier’. This barrier enables the child to focus and not to be distracted by every passing stimulus. He argued that in cases of primary autism, infants developed a barrier that was ‘abnormally thick’ and that the infant then went on to block all sensations to the extent that ‘he fails to emerge from his primary narcissism’. In cases of secondary autism, the constitutional barrier is ‘abnormally thin’ allowing an excessive amount of stimulation to affect the psychotic child’s ego. In this situation, the infant then develops his own secondary psychotic barrier which then blocks all stimulation (Anthony, 1958a: 212). He argued that within all cases of childhood psychosis and autism, there were ‘components of three basic conditions of malfunctioning’: an inability to form a coherent and stable sense of self; an inability to ‘cathect’ internal experiences accurately; and ‘a confusion of self and non-self and disturbances in the perception of the self’. Anthony borrowed the term ‘a-dualism’ from Piaget in order to define this last problem. He employed standard Piagetian tests in order to confirm his theories (ibid.: 223–4).

Anthony’s aim was to (re)integrate psychoanalytic theory into the Piagetian scheme of subjective development in order to enable the detailed description of both normal and abnormal infantile thought. He claimed that the initial stages of a child’s life were characterized by primary narcissism or egocentrism where ‘the self and the environment are one and there are no permanent external objects’ (Anthony, 1957b: 262). The emergence of self-awareness came about after the child, as organism, ceased to function through pure

reflex action and came to use 'inventive action' to grasp and direct objects in space. This emergent intellectual ability was paralleled with a new emotional ability to relate to objects. As he described it, 'the child was only able to proceed to a full emotional relationship with objects after he had rendered them permanent and substantial' (ibid.: 258). The 'psychotic ego' failed to draw a distinction between inner fantasy and outer reality resulting in an 'asymbolic' or autistic state of mind (Anthony, 1958a: 212) (Figure 1).

Anthony claimed that the causes of childhood psychosis consisted of 'constitutional, organic, genetic and psychogenic determinants and possibly some still unknown factor' (Anthony, 1958b: 93). He strongly urged against any 'monocausal' view of the condition, especially that which placed excessive emphasis on 'schizophregenic' or 'psychotogenic' parents.

The basic problem which Anthony, Klein, Isaacs and Creak sought to address from the late 1920s to the late 1950s was that of the infant's developing relationship to reality. All of these UK-based theorists assumed that hallucinatory thinking preceded the establishment of relationships with other objects or individuals. Furthermore, all of them established their theories through the study of individual children whom they had observed and/or treated themselves. Their understanding of autism was framed by a broader disciplinary-wide agreement that developmental psychology was a science that tracked the emergence of subjectivity. If they did employ basic statistical methodologies, these were used as an adjunct to these theories. The rest of this article explains how epidemiological studies were employed from the late 1950s in order to radically overturn this model of child development and the concept of autism which supported it.

The 1959 Mental Health Act, epidemiology and the radical transformation of the concept of autism

The 1960s witnessed major transformations in the care of the mentally ill in Britain. In 1959, the British Government passed the Mental Health Act which discredited most legal powers that had previously compelled the mentally defective and insane to institutional treatment. It abolished the Board of Control that had previously managed this process, thereafter making local authorities responsible for institutional and community care. The 1959 Act led to major administrative problems resulting from the large-scale closure of institutions for individuals with mental abnormalities. This led to the development of new social-scientific methods as it became paramount to demarcate the mental problems and needs of children and adults who had previously been confined but were now being integrated into the majority population. One of the most significant fields to develop following the closure of institutions was the technique of psychiatric epidemiology.

In 1958, the 'Social Psychiatry Research Unit' was opened at the Maudsley Hospital in anticipation of the Mental Health Act. The unit was funded by the Medical Research Council (MRC) and became a world-leading centre for epidemiological and statistical research in mental health, in particular relating to schizophrenia and autism. The psychological experimentation that was emerging from the unit in this period was greatly influenced by the work of Hans Eysenck who was then heading the psychology department. Eysenck and influential colleagues such as Jack Tizard, Beate Hermelin and Neil O'Connor conducted statistical analyses that were focused entirely on behavioural measures. Eysenck claimed that clinical research must be experimental and 'scientific' by which he meant that it should be based on direct observation and not on any kind of self-analysis (Derksen, 2001). He argued that Freudian analytic concepts concerning the unconscious were speculative impressions and he challenged the efficiency of psycho-analytic psychotherapy as a curative technique (Eysenck, 1990: 127-9).

Many researchers realized that autism and childhood schizophrenia were important concepts within the theory of children's psychological development which offered much potential for the development of statistical methodologies. In 1961, Mildred Creak set up a working party to identify the key features of childhood schizophrenia and to establish a firm basis for research in childhood psychopathology (Creak, 1964; Lotter, 1966). Creak's working party consisted of 13 members including Kenneth Cameron; Sylvia Ini from Great Ormond Street Hospital; Dr Guy Mitchell from the Tavistock Clinic; Dr Ronald MacKeith from Guy's Hospital; and Frank Orford, a clinical psychologist who had previously worked at the Fountain Hospital for mentally defective children. The committee argued that there were 9 key features of 'schizophrenic syndrome in childhood' which were:

1. gross and sustained impairment of emotional relationships with people
2. apparent unawareness of his own personal identity
3. pathological preoccupation with particular objects
4. sustained resistance to change in the environment
5. abnormal perceptual experience
6. acute, excessive and seemingly illogical anxiety
7. speech may have been lost or never acquired
8. distortion in motility patterns
9. a background of serious retardation in which islets of normal, near normal, or exceptional intellectual function or skill may appear (Creak, 1961: 889–90).

Creak argued that if all psychiatrists could agree on the same 'diagnostic features' this 'would clear the way towards a common understanding and recognition of the phenomenological composition of the syndrome' to enable population-based studies.

In 1963, Hermelin and O'Connor from the MRC Unit used Creak's 9 points to bring together a group of research subjects in whom they could test 'sensory dominance'. The closure of mental deficiency institutions had generated a large supply of 'subnormal' children who were used as controls in these experimental situations. Whereas intelligence tests were by then well established as psychometric instruments, measures of psychopathology in children were new. Hermelin and O'Connor worked with staff at Botley's Park Hospital for the mentally handicapped in Chertsey and St Lawrence's Hospital in Cornwall to select 'autistic' children based on Creak's list and 'subnormal' children identified through intelligence tests. Both groups were matched for IQ levels (mean 40) so that the only difference between them was that the group deemed 'autistic' was 'severely disturbed'. The children were rewarded if they gave correct responses to tactile, auditory and visual stimulation. 'Autistic' children were found more likely to respond to tactile and visual stimulation than auditory stimulation although they could be taught to respond to sound if they were rewarded (Hermelin and O'Connor, 1963).

Hermelin and O'Connor attempted to develop Anthony's theories on sensory dominance in autistic children but they did so by using behavioural tests and statistical methods as their theoretical model, rather than internal psychology. They suggested that the developmental process in all children was driven by a 'hierarchical structure of sensory systems'. At first, an infant responded to 'interoceptive and visceral sensations' and these were later superseded by a dominance of tactile and kinaesthetic sensations. Finally, the auditory and visual sensory systems became dominant. These developments were paralleled by the 'integration of different sensory information' in order that 'stimuli to one sense can be readily recognised and interpreted in another'. It was argued that 'psychotic' or 'autistic'

children found it harder to inhibit earlier, more primitive, responses than controls. They developed a spontaneous preference for tactile and visual stimuli and found it difficult to renounce this preference when presented with auditory stimulation. This distinguished them from their subnormal controls who did not have any preference although they still found it difficult to learn (Hermelin and O'Connor, 1967). These tests appeared to provide psychological proof that 'autistic' children remained stuck in early stages of development in a way which was unique and not related to intelligence.

In 1965, Michael Rutter was appointed as Senior Lecturer in Child Psychiatry at the Institute of Psychiatry, taking over the post left vacant by Anthony in 1958 (Institute of Psychiatry, 1965). Rutter had trained in medicine at Birmingham and specialized in psychiatry at the Maudsley under Aubrey Lewis and Eysenck. In 1961, he studied with the comparative psychologist Herb Birch and the psychiatric epidemiologist Ben Pasamanick. Along with Pasamanick, Rutter was interested in using epidemiological methods in order to determine causation rather than simply to measure prevalence rates (Rutter, 2001). In 1965, he published a manifesto arguing for the classification of all childhood psychiatric disorders, asserting that 'until a disorder can be identified and characterised, it cannot be adequately studied' (1965: 71). He thereafter worked closely with the World Health Organisation in developing a multi-axial system of psychiatric diagnoses (ibid.; Shaffer, 2001). In line with these efforts, Rutter initiated a study of childhood autism in a cohort of children in Aberdeen and encouraged further population studies of this condition in order to assist the general field of child psychiatry. At the same time, Rutter and Tizard embarked on a major study of the complete rates of psychiatric disorder in all children resident on the Isle of Wight (Rutter, Tizard and Whitmore, 1970). According to Rutter, epidemiological studies could gather similar research subjects who could help determine the causes of autism and other disorders thereby eradicating the need for speculative child psychoanalysis and psychology.

It was O'Connor, J. K. Wing and Victor Lotter from the MRC Unit who designed the first mass survey of an entire population cohort in order to generate a percentage figure for the rate of autism in the general population of Britain. Lotter, the principal author, drew from the Creak working party's criteria for his epidemiological study but argued that the 9 points needed to be adapted because they were not confined to observations of children's behaviour but included subjective opinions about children's feelings. Creak had claimed that it was 'impossible' to use purely behavioural criteria 'if we were to convey what we all felt to be the heart of the matter – namely the presence of an impaired capacity for human relationships' (Creak, 1961: 889–90). However, Lotter, following Rutter, considered that clear-cut purely behaviouristic criteria were paramount to the development of that epidemiological research on autism despite the fact the psychological state that was being described concerned the capacity to relate to other people. Lotter therefore discarded the category 'apparent unawareness of his own personal identity' and subsumed it within other behavioural measures. He also replaced the presence of 'islets of ability' with objective test scores (Figure 2). He then developed a list of statements which were used in order to identify children with autistic conditions. This form was issued to teachers of 76,388 children between the ages of 8 and 10 attending schools in the Middlesex area. Children identified by teachers were then further assessed to confirm their autism.

Lotter claimed that he had developed 'adequate behavioural descriptions' for the condition of autism. These descriptions would encapsulate the symptom of autism, which he understood as a behavioural parameter and not a disease entity. As he put it:

... the adjective 'autistic' was used in this study as a convenient descriptive label. It is important to note that the term was *not* intended to refer only to Kanner's syndrome of 'infantile autism', and in what follows is used without qualification to refer to all children who met the behaviouristic criteria used to select cases.

References to ‘autistic behaviour’ are to be similarly interpreted. (Lotter, 1966: 125)

In other words, Lotter’s study was a quantification of the description of ‘the autistic’ within a total population. He reported the prevalence-rate to be 4.5 per 10,000 of the population (Lotter, 1966).

The requirement for ‘precise behavioural criteria’ which epidemiological studies demanded encouraged new perspectives and descriptions of autism. Because this concept had been so central to general developmental psychology, its re-formation within the field of psychiatric epidemiology led new researchers to reconceptualize the central issues of that science. However, Lotter and colleagues reframed the topic of a child’s developing abilities to relate to others as purely a function of her or his behaviour. This model differed widely from those based on theoretical descriptions of a child’s imagined relationships to others such as in the work of Klein, Isaacs and Anthony. Instead of measuring child development and its anomalies via theoretical models of an individual child’s successive attempts to engage with reality through his or her relationships with people and objects, these studies measured child development and its anomalies as behavioural variables within a total population that represented the norm. At the same time, the study of an individual’s response to stimuli was replaced with the statistical analysis of a population’s response to stimuli. The study of human relationships was not written out of this model because human relationships could still be observed as phenomena. However, questions about how, why, or when relationships became pathological, particularly those concerning the child’s capacity to imagine, hallucinate, or fantasize about others, were absent from this new theoretical model.

The disappearance of hallucinations

The integration of children with intellectual disabilities into schools following the 1959 Mental Health Act had led to the employment of increasing numbers of educational psychologists. In 1967, there were 375 full-time educational psychologists employed by local authorities but by 1972, this number had risen to 638 (B. Harris, 1995; Wooldridge, 1994: 316). In 1979 this figure had risen to 935 and in 1983 it had increased to over 1,000 (Hansard, 1983). This new professional group increasingly came to rely on psychiatric measures for child psychological disorder. Furthermore, the early 1970s in the UK saw a major push to increase numbers of speech therapists employed by health authorities following the publication of the *Report of the Committee of Enquiry into Speech Therapy Services* (the Quirk Report) which reported that well over 300,000 individuals in the UK were in need of speech therapy services and that 270,000 of these individuals were children (Lindsay, 1984). Again these were aftershocks of the closure of deficiency institutions and the need to integrate children who had previously been isolated. The Society for Autistic Children began to set up its own schools in the early 1960s, which were exclusively for autistic children, and also campaigned to the Ministry of Education to regard all autistic children as ‘educable’.² The need to integrate all children within the same educational framework also encouraged their integration in a unified theoretical framework concerning the development of their thought.

Many statistical study designs from the 1960s and 1970s were drawn up to analyse and assess childhood schizophrenia and its causes, all of which precluded the possibility of hallucinatory thought in infants. For example, in 1971, Israel Kolvin, from the Nuffield Child Psychiatry Unit in Newcastle, sought to test Anthony’s hypothesis that psychotic disorders in childhood are dependent on the age at which the process begins. In order to do

²National Archives, London. ED50/994. Special Educational Treatment Psychotic Autistic Children 1961–1965.

this, he separated childhood psychotics into groups relating to age of onset and then divided up the 'phenomenology' of the condition according to these different groups. What was significant in the planning of this exercise was the implementation of 'rigorous criteria' to ensure that the children could be compared with one another equally. As with other social-scientific models, the rigorous quality of the data depended on its ability to be examined and then replicated by numerous researchers.

Kolvin argued that researchers should never attribute fantasies to children who did not have the words to describe these themselves. He explained his approach as follows:

Both groups of psychotics were examined for hallucinatory phenomena ... Gazing round in a distracted manner or looking as if they were hearing voices were insufficient. In addition, at some time the child must have given an account of hallucinatory phenomena. (Kolvin, 1971: 22)

These criteria were exceptionally rigorous, to the extent that they were narrowly conceived, when concerning children who could not talk or had very limited language abilities. Nevertheless, they were regarded as essential to the progression of statistical methods in child psychiatry. Not surprisingly, Kolvin found that children with 'late-onset psychosis' were 'commonly hallucinated', whereas those with early-onset psychosis, in the first 3 years of life, were more likely to suffer from 'severe speech delay and many speech anomalies' as well as 'stereotyped movements' and 'poor relationships' rather than hallucinations (Kolvin, 1971). Kolvin's study excluded the possibility that autism in infants and young children was accompanied by hallucinatory thinking of any form. His description of autism was the direct opposite of that which had first been put forward by Bleuler and which had been supported by Creak, Klein and Anthony from the late 1920s to the 1960s. However, it is this model of 'early-onset psychosis' which later became dominant in descriptions of the concept of 'autism', which is ironic because 'autism' had originally been used precisely to describe normal early infantile thought.

Kolvin's work has been extremely influential and all researchers who have followed his study design have reached similar conclusions (e.g. Rapoport *et al.*, 2009). These researchers have increasingly focused on the study of language and increasingly regarded autism as a 'communication disorder' rather than a 'psychotic disorder'. In 1967, Rutter and others conducted a follow-up study of 63 children who had been diagnosed with early-onset psychosis and argued that although a few of the children 'behaved in an odd manner which gave rise to the suspicion that they were having hallucinatory experiences ... in none was there convincing evidence of hallucinations, and no child with speech described sensations or happenings which were hallucinatory' (Rutter, Lockyer and Greenfeld, 1967: 1190). A 1972 quote from Rutter summarizes the problems with using the term autism which followed the introduction of statistical and epidemiological methods: '*autism means a withdrawal into fantasy but this is not what happens in the syndrome of autism*' (Rutter, 1972: 327).

Of course, what constituted 'convincing evidence' of the existence of hallucinations in children differed widely among practitioners. Whereas psychoanalytically influenced psychologists inferred hallucination from children's actions, Rutter and the Maudsley researchers thought that this kind of inference should be eliminated from all research inquiries. This was not because they were averse to the idea of hallucinations in infants and children but rather because such claims would have disrupted the accuracy of epidemiological studies. In general, researchers would follow Kolvin and Rutter in claiming that unless a child described hallucinatory thoughts using speech, she or he could not be assumed to experience hallucinations. Whereas this contention would not eliminate the

concept of hallucination in adult psychiatry, because linguistic descriptions of hallucination still counted as a form of behaviour, it completely transformed child psychiatry.

Autism as communication disorder

As autism became increasingly detached from hallucinations and fantasy, psychiatric researchers looked for new ways in which to identify the problem in individual clinical cases. Perhaps unsurprisingly, these researchers turned to the study of language to identify the central ‘cognitive deficit’ of autism. This reflected the growth of the ‘cognitive’ movement in psychology (Nadesan, 2005). In 1968, Rutter had argued that Creak’s 9 points for autism could be replaced with 3 key features, namely ‘profound abnormalities of language development, a variety of ritualistic and compulsive phenomena ... [and] a particular variety of disturbance in interpersonal relationships’ (1968: 4). Rutter, Hermelin, J. A. M. Martin and Lorna Wing all conducted studies on the language used by autistic children in the late 1960s and 1970s which developed Hermelin and O’Connor’s view that sensory deficits in infancy led to the development of unusual language features in autistic children (Martin, 1971: 295). These language abnormalities or differences then came to be a defining feature of the new concept of ‘autism’ in its new psychological metamorphosis, which followed its radical strip-down to behavioural measures in the 1960s. The main purpose of these studies was to compare the language of autistic children with that of children who had other problems such as executive or receptive aphasia and partial blindness or deafness. Although these researchers did not know the exact form of the central sensory disorder which caused autism, they were all united in the view that the condition was not caused by emotional reactions or hallucinations but was instead characterized by a *deficit* in certain aspects of linguistic thought.

These changes were contemporaneous with a wider interest in the ‘communication’ problems of children as opposed to their emotional problems (e.g. Franklin, 1965). In 1975, Rutter, Lawrence Bartak and Anthony Cox published the first part of a major ‘Comparative Study of Infantile Autism and Specific Developmental Receptive Language Disorder’ in the *British Journal of Psychiatry* (Rutter, Bartak and Cox, 1975: 127–45). Rutter, Bartak and Cox’s studies found that, although there were similarities in these groups, comparisons showed that autistic children demonstrated particular ‘deviant’ forms of language such as echolalia, pronoun reversal, stereotyped utterances and metaphorical language. In the case of children who only had language disorders, such ‘deviant’ speech was not prevalent but this group was much more likely to have defects in articulation.

The language ‘deviance’ and impaired usage of spoken language and gesture seen in autistic children was different from the problems seen in other language-disordered children (Rutter, Bartak and Cox, 1975; Bartak, Rutter and Cox., 1977). Figure 3 shows a section from a table of items used to discriminate between these two groups in 1977 and the discriminant function which had been calculated from the 1975 study.

In 1970, the *Journal of Autism and Childhood Schizophrenia* had been established under the editorship of Leo Kanner with Rutter as associate editor representing Great Britain. The journal claimed to have no theoretical bias but simply the aspiration ‘to promote scientifically ascertained observations and facts from every source which can widen our horizon’ (Kanner, 1971: 14–19). The editors stated that the journal was ‘devoted to all psychoses and severe disorders of behaviour in childhood’ (ibid.). In 1979, the *Journal of Autism and Childhood Schizophrenia* was renamed the *Journal of Autism and Developmental Disorders*. Writing in the editorial of that year, Rutter, who had been promoted to European editor, along with Eric Schopler, who had replaced Kanner as chief editor in 1974, explained the transition as follows:

The title and scope of the journal have been broadened to include a wider range of developmental disorders related to autism. This carefully circumscribed broadening is also intended to clarify the developmental factors that shape the autistic symptom picture. (Schopler, Rutter and Chess, 1979: 1)

It was clear that Rutter and Schopler had ambitions to build a new style of thinking about deviations in children's development and that they saw the categories of 'autism' as central to this conceptual revolution. At the same time, they rigorously excluded the concepts of 'psychosis' and 'schizophrenia' from child psychology.

This was an important moment for child psychology because autism was such a central concept. Once this concept had been appropriated and defined as a developmental problem associated with language, the concept of hallucination, which had been a key concept in all descriptive psychopathology since the 19th century, was written out of developmental psychopathology. As autism was associated further with developmental disorders, hallucination was increasingly eradicated from the concept.

These changes were reflected in the publication of the 3rd edition of the *Diagnostic and Statistical Manual of Mental Disorders* (1980). The category of 'childhood schizophrenia' was completely written out of *DSM-III* (Volkmar, 2005: 15). Instead, *DSM-III* introduced the category of 'pervasive developmental disorders', a diagnosis that included four subcategories, namely 'infantile autism', 'childhood onset pervasive developmental disorder', 'residual autism' and an atypical form (J. C. Harris, 1998: 184). At the same time, the older concept of autism, which had previously played an important part in the diagnostic criteria for *adult* schizophrenia in *DSM-II*, was completely removed from the diagnostic criteria for schizophrenia in adults and Robert Spitzer argued that this was due to its unreliability as an observable symptom (Klerman *et al.*, 1984). In other words, autism was removed as a key concept in the diagnosis of adult schizophrenia and implemented as a category within pervasive developmental disorders of childhood.

DSM-III included a multi-axial model of diagnosis which the chair of the DSM task force, Robert Spitzer, claimed was to avoid the impression that it was a diagnostic bible and to further its use as a statistical manual (Spitzer, 2001). Rutter was central to implementing the multi-axial system. In 1975, Rutter, David Shaffer and Michael Shepherd had published a report for the World Health Organisation which supported the development of a multi-axial system of diagnosis. The first model contained 3 axes, the first being the 'clinical psychiatric syndrome', the second the 'intellectual level' and the third listing 'associated aetiological factors'. This multi-axial model was a development of Rutter's work from the 1960s. His association with the World Health Organisation had broadened his profile and his multi-axial model was becoming well known in the field of psychiatry. After 1980, the *DSM* model of diagnosis in children's psychiatric disorder became well established in the UK.

Autism as a neuro-cognitive/developmental disorder

In 1979, Lorna Wing and Judith Gould from the MRC Unit conducted a prevalence-study of what they termed 'Severe Impairment of Social Interaction and Associated Abnormalities' in children. They used the Camberwell Register, a sophisticated data-collection mechanism which had been established in 1964 by the Social Psychiatry Research Unit, to identify subjects (J. K. Wing and Hailey, 1972). At the time, Wing was establishing herself as a leading figure in autism research and her work later had major national and international influence. Wing and Gould argued that the 'pattern of impairments and behaviour problems' that they were describing had previously been 'variously (and unfortunately) termed *childhood psychosis*, *childhood autism*, or *childhood schizophrenia*' and they argued that all of these conditions needed to be reconceptualized as problems of social impairment (L.

Wing and Gould, 1979: 11). Selection criteria drew from Rutter's 3 key features of autism and were defined as: 'absence or impairment of social interaction', 'absence or impairment of development of verbal or non-verbal language', or 'repetitive, stereotyped activities of any kind'. A total of 132 children was selected (L. Wing, Yeates *et al.*, 1976; L. Wing and Gould, 1979). Further assessments were given using the Children's Handicaps, Behaviour and Skills (HBS) structured interview schedule which was a system of measurement developed by Wing and Gould to amalgamate both 'psychotic' and 'retarded' children, while at the same time enabling distinctions to be made according to their social abilities. The authors argued that this schedule was useful for distinguishing between autism and 'the specific developmental receptive and expressive speech disorders' (L. Wing and Gould, 1978: 80–1).

By reintegrating the study of 'retardation' with the study of autism and then drawing new conceptual divisions between these two problems, Wing and Gould tried to create a new comprehensive framework for the study of problems of thinking in children. Figure 4 is a table showing distinctions between the two groups into which the sample was split – the 'socially impaired' and the 'sociable severely retarded'. A further graph subdivided the 'socially impaired' group according to the severity of their impairment. 'Aloof' children were reported never to interact with others, 'passive' children allowed children to interact with them but showed little response and 'odd' children demonstrated bizarre forms of social interactions including 'repetitive, idiosyncratic preoccupations' in which they had no interest in the feelings of the other person involved. These distinctions were then correlated with associated organic conditions including Down's Syndrome, deafness and visual impairments (L. Wing and Gould, 1979).

Wing and Gould argued that their 'system based on [the] severity of social impairment gave more statistically significant associations with behavioural, psychological and medical variables' than previous systems of categorization and they questioned the usefulness of Kanner's definition of infantile autism (L. Wing and Gould, 1979: 25–7). They hypothesized that 'certain areas or functions of the brain are responsible for the development of social interaction and symbolic imaginative activities' and that these areas were affected in the children that they had described (*ibid.*: 26). Some organic pathologies such as Down's Syndrome left these functions intact but destroyed others. They argued that 'social impairment' measures were the best way to conceptualize the mental problems of children because they were more closely related to known gross aetiology. Wing and Gould recommended that future studies of the mental problems of children based their divisions upon social impairment as measured by the HBS. 'Impairments of reciprocal social interaction' were reported to occur in 21.2 of every 10,000 children in the area studied, of whom 4.9 presented with a history of 'typical autism'.

Wing and Gould's attempt to place 'autistic' children on a continuum with other mentally abnormal children was similar to Anthony's attempts to place 'severely psychotic' children on a continuum with other partially 'psychotic' children and they flagged up this connection (L. Wing and Gould, 1979: 12). However, whereas Anthony's 3 criteria had been based on psychoanalytic and Piagetian styles of reasoning, Wing and Gould described the problem purely in behavioural terms creating their own triad of observable symptoms. In doing so, they helped to transform the problem of childhood psychosis and ego development into a problem of social behaviour and management. As Rutter's work has already distanced the concept of autism from hallucination and severe adult psychopathology, Wing then took the liberty to redefine all forms of psychopathology in infancy as forms of 'social impairment'.

In 1981, Wing published a paper on 'Asperger's Syndrome: a Clinical Account', in which she extended her argument that autism should be included within a 'wider group of

conditions which have, in common, impairment of development of social interaction, communication and imagination' (L. Wing, 1981; Nadesan, 2005). She coined the term 'Asperger's syndrome' after reclaiming a 1944 article on autism by Hans Asperger. Although Asperger's Syndrome was not included in the *DSM* until its 4th edition in 1994, Wing's work in expanding the category of autism and linking it to other developmental disorders was highly influential and encouraged increasing numbers of studies which placed autism as the central problem through which to understand other forms of pathological or abnormal thought development in infants and children. These studies increasingly regarded autism as a problem of 'social' interaction, rather than a problem of emotional relationships with others. The 'autism' employed in these studies was not the 'autism' of schizophrenia, but neither was it Kanner's 'autistic disturbance of affective contact'. It was instead the autism of 'cognitive deficits'. The meaning of autism had been transformed and increasing numbers of children could now be defined by these new classificatory criteria.

Cognitive psychology: Lacking a 'theory of mind' and searching for 'quasi-autism'

When Simon Baron-Cohen, Alan Leslie and Uta Frith argued that autistic children lacked a 'theory of mind' in 1985, they built on the post-1960s conception of autism, describing it as 'a profound disorder in understanding and coping with the social environment', in which the main symptom is 'impairment in verbal and non-verbal communication' (Baron-Cohen, Leslie and Frith, 1985). Frith had conducted her PhD at the Institute of Psychiatry while Rutter and Wing were both there and she was greatly influenced by their approach. She had studied for her PhD under O'Connor and Hermelin on pattern detection in autistic children (Bishop, 2006). Frith had argued that autistic children displayed an 'input processing deficit' which she later described as 'weak central coherence' (Frith, 1970, 2003). Frith, Cohen and Leslie took the term 'theory of mind' from the work of D. Premack and G. Woodruff who had employed it to describe the study of chimpanzees. They used it to describe the ability to attribute autonomous mental states to the self and others so as to predict and explain actions following. Leslie had been conducting work on the abilities of normal 2-year-olds to understand pretend play and argued that autistic children showed deficits in their capacity for imagination. Baron-Cohen, Leslie and Frith then put forward the hypothesis that autistic children suffered an impairment in the cognitive mechanism required for 'mentalizing' or representing mental states. 'False belief' tasks, in which subjects were tested to see if they could predict the thoughts of others, were employed to test this theory. In many trials, these tests were used to compare autistic children with control children that had low language abilities or low IQ levels (Leslie and Frith, 1988; Perner *et al.*, 1989). These study designs were very similar to those used by Hermelin and O'Connor who had used 'retarded' or 'mentally deficient' children as controls. The description of autism as a 'theory of mind' deficit does not exclude subjects who may have good vocabulary, syntax, phonology and rote language. Their only failure relates to their ability to think of the mental states of others.

Baron-Cohen, Frith and Leslie drew from Piaget's tests of 'egocentricity' in their proposition that autistic children lacked a 'theory of mind'; however, they did not elaborate on the ways in which infants may perceive the minds and bodies of others. They had thus found a way to describe an individual's relationship to other minds which completely bypassed the thought processes that may have mediated that relationship. This model was readily taken up by many British researchers because it represented exactly what was required in that historical moment – an account of the development of thought in infants which concerned their ability to relate to others, yet which did not speculate at all on the thought processes, hallucinatory or otherwise, that may have structured those relationships. This model had been imposed on researchers via the spread of epidemiological and statistical methodologies.

Although new models have been developed in Britain to conceptualize the mental problems of autistic children as 'theory of mind' deficits and 'weak central coherence', several pressing issues concerning the possible impact of early relationships on these functions have not gone away. The fact that autism researchers are still attempting to address some of the central questions raised in the 1940s discussions of autism and human relationships is most evident in Rutter et al.'s studies on Romanian orphans who had been seriously deprived during the early stages of their development. In 1999, Rutter and colleagues at the Institute of Psychiatry published a paper on the presentation of what they termed 'quasi-autism' in some of these children (Rutter *et al.*, 1999). In 2007, Rutter drew from a larger sample to argue that around 1 in 10 of these severely deprived children showed 'quasi-autism' which was very similar to 'ordinary autism', although it differed to the extent that the children showed more unusual social approaches and unusual spontaneity in their communication. These children also showed some improvement between the ages of 4 and 6. All the children with 'quasi-autism' showed 'theory of mind' deficits, a finding which confirms the universality of that concept to cover general relational and social difficulties (Rutter *et al.*, 2007). Furthermore, Romanian orphans adopted after 6 months were likely to show 'theory of mind' deficits even if they did not show full-blown quasi-autism (Colvert, Rutter *et al.*, 2008). Interestingly, Rutter and colleagues have argued that infants who are severely deprived during the first 6 months of life do not develop 'quasi-autism', whereas those who were deprived for longer periods do have a tendency to do so. This finding perfectly revisits the controversial discussions between Melanie Klein and Anna Freud about the nature of thought during the first 6 months of life and whether infants during this phase were dominated by 'primary narcissism' as Anna Freud had argued. Of course, Rutter does not discuss these issues in relation to fantasy and hallucination. However, he does accept that environmental circumstances can affect the development of 'quasi-autism', a finding which is less contentious when phrased in new language.

The influence of human relationships on thought will always be a subject of interest to child psychologists but the way in which these issues are currently discussed has been fundamentally shaped by the radical transformation of the concept of autism in the middle of the 20th century. Statistical methodologies and epidemiological studies have ushered in an entirely new way to think about human relationships which have become increasingly dominant. This model of describing children's mental abnormalities has grown together with increases in rates of autism since the 1990s.

There are some researchers who have challenged this general shift in the meaning of autism although they have been rare, and are becoming increasingly so. For example, Peter Hobson, a psychoanalyst and psychiatrist based jointly at the Tavistock Clinic and University College London, has argued that 'theory of mind' deficits are merely secondary phenomena to the primary problem which is the infant's inability to emotionally engage with others (Hobson, 1993, 2002). However, even Hobson's complex description of psychological development in autistic children rarely employs the language of hallucination and fantasy in relation to schizophrenia. Recently, in the USA, Judith Rapoport and colleagues at the National Institutes of Health have started to 'revisit' the link previously drawn between autism and childhood schizophrenia, arguing that autism and other developmental disorders may be a risk-factor for schizophrenia (Rapoport, Chavez *et al.*, 2009). If schizophrenia and autism are linked in the future through genetic studies, there may be another shift in the description of infantile thought. Whether this would change the descriptive methods that have now become entrenched around autism following psychiatric epidemiology, and whether it could again implicate hallucinations in infants and children, is yet to be seen.

Conclusion

This article has focused on the origins and foundations of autism as a concept in Britain. Up until the 1950s, the concepts of childhood schizophrenia and autism were used to reframe central issues in child development based on the idea of infantile hallucination. However, in the 1960s, the expansion of the epidemiological method in child psychiatry and developmental psychology led to new standardized measures of sensory-motor function and language ability. A child's behavioural and linguistic 'stereotypies' could be correlated with similar 'stereotypies' in other children through cohort studies. These studies gave rise to new scientific facts about infantile psychology. Lotter's 24 behavioural items for autism were developed to enable reproducible studies which would not be affected by the subjective judgements of individual researchers. It was in response to these changes that statistical researchers such as Lotter and Rutter transformed the meaning of autism from 'a withdrawal into fantasy', as in the Piagetian description of the concept, to an inability to fantasize which could be calculated through a sum of cognitive measures.

The claim that statistical inference should be used as the basis of scientific knowledge is, of course, not an invention of autism researchers in the 1960s. Such a claim can be traced back to the work of Karl Pearson, Francis Galton and Cyril Burt, and Ronald Fisher and Austin Bradford-Hill developed the statistical method in scientific medical research. However, autism researchers used epidemiological studies in order to answer wider questions about the development of all infantile thought. Autism has always referred to the most severe pathology in infantile thought and changes in its meaning reflect broader historical changes in what is considered abnormal in the thought and behaviour of all infants and children. These central abnormalities are now framed by new language concerning cognitive abilities and deficits which were not considered relevant when autism was related purely to psychopathology rather than learning disabilities as well. The fact that researchers still hold on to autism as a key term is reflected in Rutter's studies of severely deprived children which employ the concept of 'quasi-autism' to explain the possible outcome of social deprivation in all infants (e.g. Rutter, 1998; Rutter, Krepner and O'Connor, 2001).

The most significant development following the introduction of statistical and epidemiological methods in child psychiatry has been the expansion of behavioural, communicative and cognitive categories and the virtual disappearance of the concepts of child hallucination and fantasy. Autism was thereby disassociated from the key concept of descriptive psychopathology – hallucination. Perhaps these are simply more enlightened times in which researchers no longer speculate wildly about the thoughts of infants but collect statistical evidence instead. This has nothing to do with the question of whether psychologists blame parents for infant psychopathology, but rather whether or not psychologists take the liberty to enter the internal mental life of infants. The spread of epidemiology and statistical methodologies in child psychiatry have consequences which spread far wider than the study of just autism. They have entered into all descriptions and studies of infants and children who display mental atypicalities. 'Autism' is a defining concept and changes in its meaning have altered wider perceptions of how infants and children think.

Author biography

Bonnie Evans is a Wellcome Trust postdoctoral research fellow at King's College, London, Centre for Humanities and Health. Her 2010 PhD thesis (Department of History and Philosophy of Science, Cambridge University) examined the origins of child psychiatry and childhood schizophrenia research and its influence on contemporary theories of autism in Britain and was awarded a prize from the International Society for the History of the

Neurosciences. She is currently conducting further research on the history of psychiatric treatment and research at the Maudsley Hospital, London, and on the history of child psychiatry and autism. She is also working on a collaborative book on 'The Brain and the Mind' with Lisa Appignanesi and Lara Feigel.

References

- Anthony EJ. The System Makers: Piaget and Freud. *British Journal of Medical Psychology*. 1957; 30:255–69. [PubMed: 13489140]
- Anthony EJ. An Experimental Approach to the Psychopathology of Childhood: Autism. *British Journal of Medical Psychology*. 1958a; 31:211–27. [PubMed: 13607932]
- Anthony EJ. An Aetiological Approach to the Diagnosis of Psychosis in Childhood. *Acta Paedopsychiatrica*. 1958b; 25:89–96.
- Baird G, Simonoff E, Pickles A, Chandler S, Loucas T, Meldrum D, Charman T. Prevalence of Disorders of the Autism Spectrum in a Population Cohort of Children in South Thames. *Lancet*. 2006; 368:210–15. [PubMed: 16844490]
- Baron-Cohen S, Leslie AM, Frith U. Does the Autistic Child have a "Theory of Mind"? *Cognition*. 1985; 21:37–46. [PubMed: 2934210]
- Baron-Cohen S, Scott FJ, Allison C, Williams J, Bolton P, Matthews FE, Brayne C. Prevalence of Autism-Spectrum Conditions: UK School-Based Population Study. *British Journal of Psychiatry*. 2009; 194(6):500–9. [PubMed: 19478287]
- Bartak L, Rutter M, Cox A. A Comparative Study of Infantile Autism and Specific Developmental Receptive Language Disorders III. Discriminant Function Analysis. *Journal of Autism and Developmental Disorders*. 1977; 7:383–96.
- Bender L. Clinical Study of One Hundred Schizophrenic Children. *American Journal of Orthopsychiatry*. 1947; 17:40–56. [PubMed: 20282040]
- Bender L. Childhood Schizophrenia. *The Psychiatric Quarterly*. 1953; 27:663–81. [PubMed: 13112324]
- Bishop D. Forty Years On: Uta Frith's Contribution to Research on Autism and Dyslexia, 1966–2006. *The Quarterly Journal of Experimental Psychology*. 2006; 61:16–26. [PubMed: 18038335]
- Bleuler, E. *Dementia Praecox or the Group of Schizophrenias*. International Universities; New York: 1950. [1911]
- Bowlby, J. *Maternal Care and Mental Health: A Report Prepared on Behalf of the World Health Organization as a Contribution to the United Nations Programme for the Welfare of Homeless Children*. World Health Organisation; Geneva: 1951.
- Burlingham, D.; Freud, A. *Infants without Families: The Case for and against Residential Nurseries*. Allen & Unwin; London: 1943.
- Burt C. Is the Doctrine of Instincts Dead? A Symposium: 1 – The Case for Human Instincts. *British Journal of Educational Psychology*. 1941; 11:155–72.
- Chapman, M. *Constructive Evolution*. Cambridge University Press; Cambridge: 1988.
- Claude H, Borel A, Robin G. 'Démence Précoce, Schizomanie et Schizophrénie' [Dementia Praecox, Schizomania and Schizophrenia]. *L'Encéphale*. 1924; 19:147–8.
- Colvert E, Rutter M, et al. Do Theory of Mind and Executive Function Deficits Underlie the Adverse Outcomes Associated with Profound Early Deprivation?: Findings from the English and Romanian Adoptees Study. *Journal of Abnormal Child Psychology*. 2008; 36:1057–68. [PubMed: 18427975]
- Creak M. Schizophrenic Syndrome in Childhood. *British Medical Journal*. 1961; 2:889–90.
- Creak MEA. Schizophrenic Syndrome in Childhood: Further Progress Report of a Working Party (April 1961). *Developmental Medicine and Child Neurology*. 1964; 6:530–5. [PubMed: 14215241]
- Derksen, M. Science in the Clinic: Clinical Psychology at the Maudsley. In: Bunn, GD.; Lovie, AD.; Richards, GD., editors. *Psychology in Britain: Historical Essays and Personal Reflections*. BPS Books [British Psychological Society]; Leicester: 2001. p. 267–89.
- Ellenberger, HF. *The Discovery of the Unconscious*. Allen Lane, Penguin; London: 1970.

- Evans B, Rahman S, Jones E. Managing the “Unmanageable”: Interwar Child Psychiatry at the Maudsley Hospital. London. *History of Psychiatry*. 2008; 19:454–75. [PubMed: 19397089]
- Eyal, G.; Hart, B.; Onculer, E.; Oren, N.; Rossi, N. *The Autism Matrix*. Polity; Cambridge: 2010.
- Eysenck, HJ. *Rebel with a Cause: The Autobiography of H. J. Eysenck*. W. H. Allen; London: 1990.
- Franklin, AW. *Children with Communication Problems: Proceedings of a Conference Called by the Invalid Children’s Aid Association*. Pitman; London: 1965.
- Freud, S. *The Standard Edition of the Complete Psychological Works of Sigmund Freud*. Strachey, J., editor. Vol. vol. 3. Vintage; London: 2001. [1894]
- Freud, S. *Three Essays on the Theory of Sexuality*. In: Strachey, J., editor. *The Standard Edition of the Complete Psychological Works of Sigmund Freud*. Vol. vol. 7. Vintage; London: 2001. [1905]
- Frith U. *Studies in Pattern Detection in Normal and Autistic Children*. I. Immediate Recall of Auditory Sequences. *Journal of Abnormal Psychology*. 1970; 76:413–20. [PubMed: 5490707]
- Frith, U. *Autism: Explaining the Enigma*. Blackwell; New York: 2003.
- Grob GN. *Origins of DSM-I – a Study in Appearance and Reality*. *American Journal of Psychiatry*. 1991; 148:421–31. [PubMed: 2006685]
- Harris, B. *The Health of the Schoolchild*. Open University Press; Buckingham, Bucks: 1995.
- Harris, JC. *Developmental Neuropsychiatry*. Oxford University Press; Oxford: 1998.
- Heimann, P. *Some Aspects of the Role of Introjection and Projection in Early Development – 1943*. In: King, P.; Steiner, R., editors. *The Freud–Klein Controversies, 1941–45*. Tavistock/Routledge; London: 1991. p. 501-30.[1943]
- Hermelin B, O’Connor N. *The Response and Self-Generated Behaviour of Severely Disturbed Children and Severely Subnormal Controls*. *British Journal of Social and Clinical Psychology*. 1963; 2:37–43.
- Hermelin B, O’Connor N. *Remembering of Words by Psychotic and Subnormal Children*. *British Journal of Psychology*. 1967; 58:213–18. [PubMed: 5588649]
- Hersov L. *Child Psychiatry in Britain*. *Journal of Child Psychology and Psychiatry*. 1986; 27:781–801. [PubMed: 3539956]
- Hobson, RP. *Autism and the Development of Mind*. Lawrence Erlbaum; Hove, Sx: 1993.
- Hobson, RP. *The Cradle of Thought*. Macmillan; London: 2002.
- Isaacs, S. *The Nature and Function of Phantasy*. In: King, P.; Steiner, R., editors. *The Freud–Klein Controversies, 1941–45*. Tavistock/Routledge; London: 1991. p. 264-321.[1943]
- Janet, PMF.; Raymond, F. *Les Obsessions et la Psychasthénie* [Obsessions and Psychasthenia]. Alcan; Paris: 1903.
- Jones, KW. *Taming the Troublesome Child*. Harvard University Press; London: 1999.
- Kanner L. *Autistic Disturbances of Affective Contact*. *Nervous Child*. 1943; 2:217–50.
- Kanner L. *Childhood Psychosis: a Historical Overview*. *Journal of Autism and Childhood Schizophrenia*. 1971; 1:14–19. [PubMed: 4947754]
- King, P.; Steiner, RE., editors. *The Freud–Klein Controversies 1941–45*. Tavistock/Routledge; London: 1991.
- Klein M. *Personification in the Play of Children*. *International Journal of Psychoanalysis*. 1929; 10:193–204.
- Klein M. *The Importance of Symbol Formation in the Development of the Ego*. *International Journal of Psychoanalysis*. 1930; 11:24–39.
- Klerman G, Vaillant G, Spitzer R, Michels R. *A Debate on DSM-III*. *American Journal of Psychiatry*. 1984; 141:539–54. [PubMed: 6703133]
- Kolvin, I. *Psychoses in Childhood – a Comparative Study*. In: Rutter, M., editor. *Infantile Autism: Concepts, Characteristics and Treatment*. Churchill Livingstone; London: 1971.
- Leslie AM, Frith U. *Autistic Children’s Understanding of Seeing, Knowing and Believing*. *British Journal of Developmental Psychology*. 1988; 6:315–24.
- Lindsay, G. *Screening for Children with Special Needs: Multidisciplinary Approaches*. Croom Helm; London: 1984.
- Lotter V. *Epidemiology of Autistic Conditions in Young Children*. *Social Psychiatry*. 1966; 1:124–37.

- Martin, JAM. Sensory Disorder in the Autistic Child and its Implications for Treatment. In: Rutter, M., editor. *Infantile Autism: Concepts, Characteristics and Treatment*. Churchill Livingstone; London: 1971. p. 286-96.
- Mayes R, Horowitz AV. *DSM-III* and the Revolution in the Classification of Mental Illness. *Journal of the History of Behavioural Sciences*. 2005; 41:249-67.
- McGuire, W., editor. *The Freud-Jung Letters: The Correspondence between Sigmund Freud and C. G. Jung*. Hogarth Press; London: 1974.
- Moskowitz A. Pierre Janet's Influence on Bleuler's Concept of Schizophrenia. *Janetian Studies*. Nov 25.2005 2 online journal accessible @: <http://pierre-janet.com/JSarticles/2005/am05.doc>.
- Murray, S. *Representing Autism*. Liverpool University Press; Liverpool: 2008.
- Nadesan, MH. *Constructing Autism*. Routledge; London: 2005.
- Perner J, Frith U, Leslie AM, Leekam S. Explorations of the Autistic Child's Theory of Mind: Knowledge, Belief and Communication. *Child Development*. 1989; 60:689-700.
- Piaget J. La pensée symbolique et la pensée de l'enfant' [Symbolic Thought and Infantile Thought]. *Archives de psychologie*. 1923; 18:273-304.
- Piaget, Jean. *The Child's Conception of the World*. Kegan Paul; London: 1929.
- Rapoport J, Chavez A, Greenstein D, Addington A, Gogtay N. Autism Spectrum Disorders and Childhood-Onset Schizophrenia: Clinical and Biological Contributions to a Relation Revisited. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2009; 48:10-18. [PubMed: 19218893]
- Rose, NS. *The Psychological Complex*. Routledge; London: 1985.
- Rose, NS. *Governing the Soul*. Free Association Press; London: 1999.
- Rutter M. Classification and Categorisation in Child Psychiatry. *Journal of Child Psychology and Psychiatry*. 1965; 6:71-83. [PubMed: 5851100]
- Rutter, M. Behavioural and Cognitive Characteristics. In: Wing, JK., editor. *Early Childhood Autism: Clinical, Educational and Social Aspects*. Pergamon Press; London: 1966.
- Rutter M. Concepts of Autism. *Journal of Child Psychology and Psychiatry*. 1968; 9:1-25. [PubMed: 4892153]
- Rutter M. Childhood Schizophrenia Reconsidered. *Journal of Autism and Developmental Disorders*. 1972; 2:315-37.
- Rutter M. Developmental Catch-up, and Deficit, following Adoption after Severe Global Early Privation. English and Romanian Adoptees (ERA) Study Team. *Journal of Child Psychology and Psychiatry*. 1998; 39:465-76. [PubMed: 9599775]
- Rutter, M. The Emergence of Developmental Psychopathology. In: Bunn, GD.; Lovie, AD.; Richards, GD., editors. *Psychology in Britain*. BPS Books [British Psychological Society]; Leicester: 2001. p. 422-32.
- Rutter M, et al. Quasi-Autistic Patterns following Severe Early Global Privation. *Journal of Child Psychology and Psychiatry*. 1999; 40:537-49. [PubMed: 10357161]
- Rutter M, et al. Early Adolescent Outcomes of Institutionally Deprived and Non-Deprived Adoptees. III. Quasi-Autism. *Journal of Child Psychology and Psychiatry*. 2007; 48:1200-7. [PubMed: 18093025]
- Rutter M, Bartak L, Cox A. A Comparative Study of Infantile Autism and Specific Developmental Receptive Language Disorder: I. The Children. *The British Journal of Psychiatry*. 1975; 126:127-45. [PubMed: 1131465]
- Rutter M, Kreppner JM, O'Connor TG. Specificity and Heterogeneity in Children's Responses to Profound Institutional Privation. *The British Journal of Psychiatry*. 2001; 179:97-103. [PubMed: 11483469]
- Rutter M, Lockyer L, Greenfeld D. A Five to Fifteen Year Follow-up Study of Infantile Psychosis. *British Journal of Psychiatry*. 1967; 113:1183-99. [PubMed: 6075452]
- Rutter, M.; Tizard, J.; Whitmore, K. *Education, Health and Behaviour*. Longman; Harlow, Essex: 1970.

- Sayers, J. British Psychology and Psychoanalysis: The Case of Susan Isaacs. In: Bunn, GD.; Lovie, AD.; Richards, GD., editors. *Psychology in Britain: Historical Essays and Personal Reflections*. BPS Books [British Psychological Society]; Leicester: 2001. p. 205-22.
- Schopler E, Rutter M, Chess S. Editorial: Change of Journal Scope and Title. *Journal of Autism and Developmental Disorders*. 1979; 9:1–10. [PubMed: 86533]
- Shaffer, D. Classification and Categorisation Revisited. In: Rutter, M.; Green, J.; Yule, W., editors. *Research and Innovation on the Road to Modern Child Psychiatry*, vol. 1, Festschrift for Professor Sir Michael Rutter. Gaskell and Association for Child Psychology and Psychiatry; London: 2001. p. 104-14.
- Shorter, E. *A Historical Dictionary of Psychiatry*. Oxford University Press; Oxford: 2005.
- Silverman, C. *Understanding Autism*. Princeton University Press; Princeton, NJ: 2011.
- Spitzer RL. Values and Assumptions in the Development of *DSM-III* and *DSM-III-R*: an Insider's Perspective and a Belated Response to Sadler, Hulgus, and Agich's "On Values in Recent American Psychiatric Classification. *The Journal of Nervous and Mental Disease*. 2001; 189:351–9. [PubMed: 11434635]
- Steiner, G. Background to the Scientific Controversies. In: King, P.; Steiner, R., editors. *The Freud–Klein Controversies, 1941–45*. Tavistock/Routledge; London: 1991. p. 227-63.
- Sutherland, G.; Sharp, S. *Ability, Merit and Measurement*. Clarendon; Oxford: 1984.
- Thom, D. Wishes, Anxieties, Play, and Gestures. In: Cooter, R., editor. *In the Name of the Child*. Routledge; London: 1992. p. 200-19.
- Vidal, F. *Piaget before Piaget*. Harvard University Press; Cambridge, MA and London: 1994.
- Volkmar, FR. *Handbook of Autism and Pervasive Developmental Disorders*. John Wiley & Sons; Hoboken, NJ and Chichester, Sx: 2005.
- Watson, JB. *Behaviourism*. People's Institute; New York: 1925.
- Wilson M. *DSM-III and the Transformation of American Psychiatry: a History*. *American Journal of Psychiatry*. 1993; 150:399–410. [PubMed: 8434655]
- Wing, JK. Diagnosis, Epidemiology, Aetiology. In: Wing, JK., editor. *Early Childhood Autism: Clinical, Educational and Social Aspects*. Pergamon Press; London: 1966. p. 3-50.
- Wing, JK.; Hailey, AM. *Evaluating a Community Psychiatric Service: The Camberwell Register, 1964–71*. Oxford University Press for the Nuffield Provincial Hospitals Trust; London: 1972.
- Wing L. Asperger's Syndrome: a Clinical Account. *Psychological Medicine*. 1981; 11:115–29. [PubMed: 7208735]
- Wing L, Gould J. Systematic Recording of Behaviours and Skills of Retarded and Psychotic Children. *Journal of Autism and Childhood Schizophrenia*. 1978; 8:79–97. [PubMed: 641003]
- Wing L, Gould J. Severe Impairments of Social Interaction and Associated Abnormalities in Children: Epidemiology and Classification. *Journal of Autism and Developmental Disorders*. 1979; 9:11–29. [PubMed: 155684]
- Wing L, Potter D. The Epidemiology of Autistic Spectrum Disorders. *Mental Retardation and Developmental Disabilities Research*. 2002; 8:151–61.
- Wing L, Yeates SR, Brierley LM, Gould J. The Prevalence of Early Childhood Autism: Comparison of Administrative and Epidemiological Studies. *Psychological Medicine*. 1976; 6:89–100. [PubMed: 935299]
- Wooldrige, A. *Measuring the Mind: Education and Psychology in England, c.1860–c. 1990*. Cambridge University Press; Cambridge: 1994.

Primary Sources

- HANSARD: HC Deb 25 October 1983 vol. 47 c132.
- Institute of Psychiatry Library, London, Institute of Psychiatry (IoP) Report, 1950–1951 (London, 1951).
- Institute of Psychiatry Library, London, Institute of Psychiatry (IoP) Report, 1964–1965 (London, 1965).

National Archives, London. ED50/994. Special Educational Treatment Psychotic Autistic Children
1961–1965.

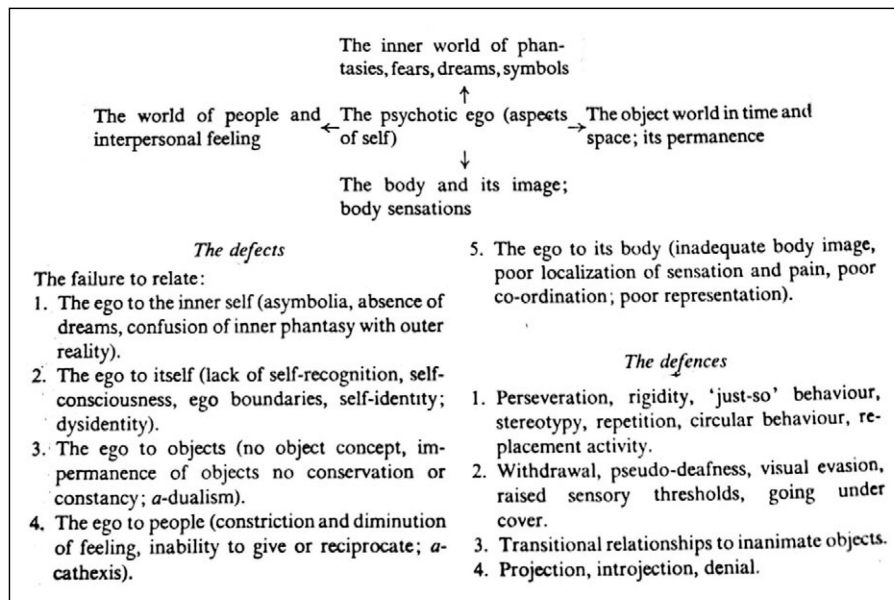


Figure 1.
Table by E. J. Anthony, 'The psychotic ego with its defects and defences', first printed in Anthony (1958a).

Item	Behaviour rated	Mean percentage scores and types of children		
		Autistic Group A (N=15)	Group B (N=17)	Non-Autistic Group C (N=22)
<i>All speech items</i> *		54	38	12
1.	Speech not used for communication	63	33	0
2.	Reversal of pronouns	21	12	8
3.	Echolalia	67	46	25
4.	Repetition of phrases	67	58	13
<i>All social behaviour items</i>		72	53	14
5.	Visual avoidance	53	38	2
6.	Solitary	97	70	32
7.	Ignores children	87	79	15
8.	Aloof and distant	97	70	18
9.	Walks/looks through people	30	6	0
<i>All movement peculiarity items</i>		40	28	8
10.	Self spinning	47	14	0
11.	Jumping	43	44	14
12.	Flapping	33	14	14
13.	Toe walking	13	18	9
14.	Other marked mannerisms	63	47	5
<i>All "auditory" items</i>		45	34	10
15.	Behaves as if deaf	67	50	5
16.	Covers ears	47	26	11
17.	Distress at noise	23	26	14
<i>All repetitive/ritualistic items</i>		49	16	7
18.	Elaborate food fads	27	6	2
19.	Lines and patterns with objects	43	9	0
20.	Spinning objects	17	9	5
21.	Other elaborate ritual play	83	35	11
22.	Carrying, banging, twirling etc. objects	37	38	9
23.	Insistence on sameness (objects)	53	9	15
24.	Insistence on sameness (events)	80	12	9
* Speaking children only				

Figure 2. Table by Victor Lotter, 'Mean percentage scores on 24 behaviour items' (Lotter, 1966).

D. Current language behavior	
1. Pronominal reversal	-0.434
2. Use of stereotyped utterances	0.096
3. Repetition of own phrases over and over	-0.001
4. Immediate echolalia	-0.022
5. Utterance length	0.461
6. Metaphorical language	-0.227
7. Abnormal articulation	0.347
8. Odd intonation	0.039
9. Use of gesture to communicate	-0.037
10. Communication to ask to go somewhere	0.013
11. Communication to comment on things happening	0.251
12. Communication to report on events spontaneously	-0.431
13. Communication to report on events in response to questions	0.143
14. Communication to answer question "What are you doing?"	0.046
15. Communication to chat to adult	-0.168
16. Communication to ask if he can help with activity	0.129
17. Talking to himself about his activity	0.156
18. Displays sympathy to others	0.004
19. Creative play	-0.133
20. Imaginative play	-0.096
21. Cooperative imaginative play (test situation)	-0.217

Figure 3.
Section from table of items used in discriminant functions analyses (Bartak, Rutter and Cox, 1977).

	Socially impaired	Sociable severely retarded
Number of children	74	58
Percentages showing following abnormalities	(100)	(100)
History of typical autism	23	0 ^b
Speech		
None	55	33 ^b
Echolalia	35	17
Idiosyncratic speech and/or reversal of pronouns (ever)	8	0
Symbolic activities		
None	55	10 ^b
Repetitive	42	14
Overall interest pattern		
Repetitive only	72	7 ^b
Repetitive and constructive	28	31
Elaborate repetitive routines	23	0 ^b

^aAt time of interview, unless otherwise specified.
^b $p < .001$ (chi-square test).

Figure 4. 'Comparison of socially impaired with sociable severely retarded' (L. Wing and Gould, 1979).