THE INFLUENCE OF THE POWER OF PSYCHIATRISTS INVOLVED IN THE CONSTRUCTION PROCESS OF AUTISM IN THE DSM (1952-2013)

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SUMMARY

The Diagnostic Statistical Manual (DSM) is a classification system for mental disorders (Cosgrove & Krimsky, 2012). In the development process of the description of mental disorders in the DSM are multiple professionals of different medical and mental health disciplines involved, for example: psychiatrists, psychologists, pediatrics, nurses and social workers (APA, 2017). Their primary interest is to help people with a mental disorder achieve the correct diagnosis. However, it is assumed that some professionals in the construction process of mental disorders in the DSM could also have secondary interests, because they have direct financial ties with the pharmaceutical industry. It is assumed that they have the power to realize those secondary interests, for example by broadening the criteria. The aim of this thesis is to investigate to what extent the power of psychiatrists influences the construction process of mental disorders in the DSM. The result of this research is that there is a correlation between power and the realization of interests, because an increase in the power of psychiatrists aligned with an increase in the realization of interests of the psychiatrists from the DSM I till the DSM IV. From the DSM IV to the DSM 5 a decrease in the power of psychiatrists aligned with a decrease in the realization of interests of the psychiatrists. Thus, it seems likely that the power of psychiatrists has had an influence on the changes in the construction of autism as a mental disorder in the DSM from 1952-2013.

Key words: DSM, Psychiatrists, Interests, Power, Social Constructionism, Medicalization

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1. AN INTRODUCTION TO THE DIAGNOSTIC STATISTICAL MANUAL AND TO THIS RESEARCH

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is a classification system for mental disorders that is used by mental health professionals all over the world (Cosgrove & Krimsky, 2012). The DSM was developed to increase the reliability of the psychiatric diagnostics and to provide a common language among clinicians (Kaasenbrood & Schnabel, 1993; Jongedijk, 2001; American Psychiatric Association, 2012). The American Psychiatric Association (APA) publishes this diagnostic manual (Cosgrove & Krimsky, 2012). In the development process of the description of mental disorders in the DSM are multiple professionals of different medical and mental health disciplines involved, for example: psychiatrists, psychologists, pediatrics, nurses and social workers (DSM, 2017).

The DSM has changed a lot over the past 65 years. In total, five editions of the DSM have been published. The first DSM was published in 1952. The DSM II followed in 1968, the DSM III in 1980, the DSM IV in 1994 and the DSM 5 in 2013 (Kaasenbrood & Schnabel, 1993; van der Slijde, 2013). All DSM editions are different. For instance, in the number of mental disorders that are included and in the way some mental disorders are classified. Below in table 1, I have provided an overview of the number of mental disorders listed in each DSM edition.

TABLE 1. AN OVERVIEW OF THE NUMBER OF MENTAL DISORDERS IN EACH DSM EDITION

DSM Edition	Number of mental disorders
DSM I (1952)	106
DSM II (1968)	182
DSM III (1980)	265
DSM IV (1994)	292
DSM 5 (2013)	297

Source: Conrad (2007) and van Brakel & van Eijk (2011)

There has been criticism of the DSM from health care professionals and researchers (Van Os, 2012; Cosgrove & Bursztajn, 2009. The first point of criticism is that many of the psychiatrists involved in the construction process of the DSM have tight connections with the pharmaceutical industry and that this

can be considered as a conflict of interest (Van Os, 2012). The hypothesis that there are tight connections between the psychiatrists and the pharmaceutical industry, submitted by Van Os (2012) is supported by research. Research has shown that almost 56 percent of the taskforce members of the DSM IV had direct ties with the pharmaceutical industry and, additionally that 70 percent of the task force members of the DSM 5 had direct ties with the pharmaceutical industry (Cosgrove & Bursztajn, 2009). The majority of those with direct ties were psychiatrists and it was discovered they in fact had direct financial ties (Cosgrove & Bursztajn, 2009). The task force members for example received research funding and/or honoraria. In certain cases, they were also on a corporate or advisory board of a drug company and/or they held equity in a drug company (Cosgrove, Bursztajn, Krimsky, Anaya & Walker, 2009). Therefore, it is clear there are direct financial ties between psychiatrists who are involved in the construction process of the DSM and the pharmaceutical industry. This finding of direct financial ties between psychiatrists and the pharmaceutical industry corroborate the hypothesis of Van Os (2012).

The direct financial ties between the psychiatrists and the pharmaceutical industry can be considered as a conflict of interest. Thompson (1993, p. 573) defines a conflict of interest as "*a set of conditions in which professionals' judgment concerning a primary interest (such as a patient's welfare or the validity of research) tends to be unduly influenced by a secondary interest (such as financial gain)*". With respect to the construction of mental disorders in the DSM, it could be the case that the psychiatrists are influenced by the financial incentives they had received from the pharmaceutical industry. According to Cosgrove and Wheeler (2013), psychopharmacology today is considered the standard treatment for many mental disorders. Consequentially, the more people are diagnosed with a mental disorder, the more medications will be prescribed and sold. The (financial) interests of the psychiatrists who are involved in the construction process of the DSM may have had a strong influence on the descriptions of mental disorders designated in the DSM. Psychiatrists have the power to make changes to the descriptions of mental disorders in the DSM, and could have 'abused' this power to further their own (secondary) interests.

A second critique on the DSM concerns the rise in the number of diagnoses. It is thought that this rise in diagnosis is also caused by the financial ties between the psychiatrists and the pharmaceutical industry. Research has shown that the rise in diagnosis is a consequence of the broadening of diagnostic criteria in the DSM (Chamak & Bonniau, 2013). Psychiatrists in their function as task force members have the power to broaden the criteria. By broadening the diagnostic criteria, a larger number of patients could fall under the diagnosis of autism, (or any other mental disorder). If this is the case, the pharmaceutical industry would benefit financially as would the psychiatrists.

However, these two criticisms are based on assumptions only. It is not known whether there is an influence of the financial ties between psychiatrists and the pharmaceutical industry on the descriptions of mental disorders in the DSM. The aim of this thesis is to investigate to what extent the power of psychiatrists influences the construction process of mental disorders in the DSM.

A CONSTRUCTIVIST APPROACH TO THE CONSTRUCTION PROCESS IN THE DSM

In this thesis, I will describe the influence of power in the construction process of the DSM with the help of the social constructionism perspective as the mental disorders in the DSM are in fact socially constructed. The social constructionism perspective focuses on the conditions under which alleged situations are made out to be deviant (Rubington & Weinberg, 2011). A social problem can be can be defined as "conditions that have become culturally defined as troublesome, widespread, changeable, and in need of change" (Rubington & Weinberg, 2011, p. 297).

According to Rubington & Weinberg (2011, p. 301) "the existence of social problems depends on the continued existence of groups or agencies that define some condition as a problem and attempts to do something about it". They need to gain and maintain attention. Therefore, power is needed (Rubington & Weinberg, 2011). I have previously argued that the psychiatrists have the power in the construction process of the DSM.

In this thesis, I will examine the construction process with the help of the description of autism in the DSM. Autism spectrum disorder is considered a complex developmental disorder. People with autism can struggle with thought process, feeling, language and the ability to relate to others (Serra, Mulder & Minderaa, 2002). The effects of autism and its severity of symptoms is different in each person (Benson, 2016). Below I will describe my research questions, the relevance of this study and the approach of this study.

RESEARCH QUESTIONS

To investigate to what extent the power of psychiatrists influences the construction process of mental disorders in the DSM

The following question will be central in this thesis:

'How has autism in the DSM (1952-2013) been constructed over the years and can these changes be explained by the power of psychiatrists involved in the construction process?'

There are also three sub-questions central in this research:

1. 'Which changes have occurred in the description of autism spectrum disorder in the DSM editions?'

With the help of this question the first part of the main research question can be answered, because the answer to this sub-question shows the changes in the construction of autism in the DSM over the years. This question is important, because the aim of this research is to investigate whether there is a relationship between the power of the psychiatrists and the construction of autism in the DSM. Therefore, we need to know how autism was constructed over the years.

2. 'Which changes have occurred in the power of psychiatrics between 1952 (DSM I) and 2013 (DSM 5)?'

The answer to this question helps to answer the second part of the main research question. We want to know if the changes in the construction of autism in the DSM can be explained by the power of the psychiatrists. Therefore, we need to know whether the power of the psychiatrists has changed over the years.

3. 'How can the changes in the description of autism spectrum disorder in each DSM edition be explained by changes in the power of psychiatrists?'

With the help of this question the second part of the main research question can be answered. To answers this question the answer to sub-question one and two are needed. There need to be analyzed if the changes in the construction of autism in the DSM and the changes in power correlate.

The combined answers to the three sub-questions will provide an answer to the main research question.

RELEVANCE OF THIS STUDY

This research has scientific relevance, because with the help of this research more knowledge is gained about the construction process of the description of autism in the DSM. The constructionism approach has never been applied to the description of autism before. This research could show that autism is socially constructed. Moreover, we can gain more knowledge gained about the influence of the interests of psychiatrists on the construction of mental disorders in the DSM. As I have stated earlier, it is not known whether there is an influence of the interests of psychiatrists on the construction of mental disorders in the DSM. There is only an assumption that there is an influence, because of the direct financial ties between the psychiatrists and the pharmaceutical industry. When it is the case that the interests of the psychiatrists have an influence of the psychiatrists have an influence on the

construction process of mental disorders in the DSM, more knowledge is gained. The findings of this research could attribute to filling the knowledge gap. In figure 2. I have illustrated the knowledge gap. The grey rectangle shows the relationship between the pharmaceutical industry and the psychiatrists which are involved in the construction process of mental disorders in the DSM. This the relationship from which we already know it exists (Cosgrove & Bursztajn, 2009). This research thrives to uncover whether there is a relationship between the power of the psychiatrists and the description of autism in the DSM. In figure 2. I have presented this relationship in the red rectangle.

Figure 2. An illustration of what is already known (grey rectangle) and what is not known yet (red rectangle).

Pharmaceutical industry ➡ Psychiatrists ➡ Description of autism in the DSM
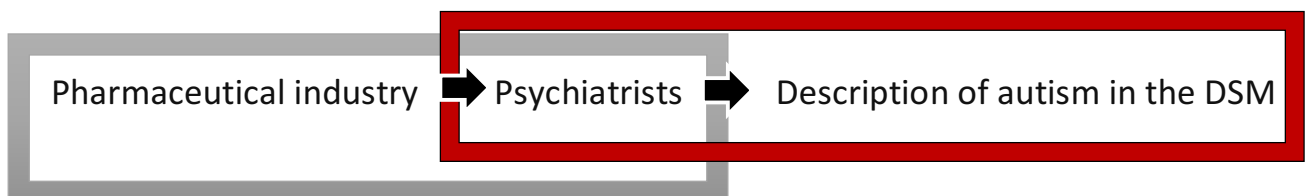
This research is also relevant to society. People who are diagnosed with a mental disorder often experience stigma (Jongedijk, 2001; Rüsch, Angermeyer & Corrigan, 2005; Link, Struening, Rahav, Phelan & Nuttbrock, 1997). There are two types of stigma, public stigma and self-stigma. According to Ben-Zeev, Young and Corrigan (2010, p. 319) public stigma can be defined as "the phenomenon of large social groups endorsing stereotypes, about, and subsequently acting against a stigmatized group". In the definition of Ben-Zeev, Young & Corrigan (2010, p. 319) the stigmatized group are the people with mental illnesses. Self-stigma on the other hand can be defined as: "the loss of self-esteem and self-efficacy that occurs when people internalize public stigma". In that way, public stigma and self-stigma are related to each other. Someone needs to experience public stigma to be able to experience self-stigma. According to Rüsch et al. (2005) public stigma results in everyday life discriminations. These discriminations are experienced by persons with a mental illness and include for example, restricted opportunities. With respect to self-stigma, the loss of self-esteem and self-efficacy are associated with failure in pursuing a job. Which has the consequence that people with self-stigma struggle with living an independent life (Link, 1987). Since being diagnosed with a mental disorder has negative consequences, the professionals in the construction process of the DSM should not let their primary interest (to help people with a mental disorder achieve the correct diagnosis) be influenced by their secondary interest (a financial gain) when constructing the mental disorders. As mentioned before, this could lead to a higher number of criteria so that a larger number of people

could fall under a certain diagnosis. This could lead to a lot of people who get falsely diagnosed and who experience stigma. They would become the 'victim' of the interests of psychiatrists. Therefore, it is important to examine whether the construction process of the DSM is influenced by the interests of the psychiatrists.

If this research shows that there is an influence of the power of psychiatrists on the description of autism in the DSM, this could set people into action. It is already assumed that the pharmaceutical industry influences the construction process of mental disorders in the DSM, but there have not been undertaken any effective measures to prohibit this. When this research shows that the assumption is correct this could set people in action to take steps in order to minimalize the influence of the pharmaceutical industry on the psychiatrists or to minimalize the power of the psychiatrists in the construction process. This could lead to a DSM with a description of mental disorders which is free of secondary interests.

RESEARCH APPROACH AND THE RESEARCH OUTLINE

To answer my research questions, I will conduct a qualitative research. The cases in this research are the different DSM editions. With respect to the first sub-question. I will analyze the descriptions of autism in all DSM editions. To answer the second question, I will analyze how many psychiatrists were involved in the construction process of each DSM edition. To answer the third question, I will analyze whether the changes in the descriptions align with an increase in the description of autism that correlates to the interest of the psychiatrists and also with an increase in the percentage of psychiatrists involved in the construction process of autism in the DSM.

This master thesis has the following structure. In chapter two I will provide a theoretical framework; I will give a preliminary answer to the research questions with the help of literature and I will derive a hypothesis from this literature. In chapter 3 I will describe the research method. For this thesis, I have conducted qualitative research. I will analyze the criteria of autism in the DSM and I will analyze the members of the committee of each DSM to see whether the percentage of psychiatrists for each DSM edition has increased. In chapter 4 I will present the results. I will provide an answer to all (sub)questions in this chapter. In chapter 5 I will make conclusions and discuss the main findings. Additionally, I will make recommendations and I will discuss the strengths and weaknesses of this research.

2. A THEORETICAL FRAMEWORK: THE SOCIAL CONSTRUCTIONISM APPROACH, MEDICALIZATION AND A CONFLICT OF INTERESTS

In this chapter I will discuss the social constructivist approach to illness, medicalization and the theory of the conflict of interests. Additionally, I will give a provisional answer to the research questions with the help of the literature, and at the end of this chapter I will derive one hypothesis from the literature that I have described. In this thesis, I will investigate how autism has been constructed over the years in the DSM and how the changes in these constructions can be explained by the interest and the power of psychiatrists involved in the construction process.

THE SOCIAL CONSTRUCTIVIST APPROACH TO ILLNESS

In this paragraph, the social constructionism perspective will be described and the social constructionism perspective will be applied to the description of autism in the DSM.

The social constructionist perspective focuses on mental disorders constructed as illnesses. Autism in this instance can be considered as an illness. According to Eisenberg (1977, p. 9) "illnesses are experiences of discontinuities in states of being and perceived role performances". Ilnesses are shaped by social experiences, cultural traditions, a paradigm shift in knowledge and power relations. Ilnesses (mental disorders) are something beyond psychical realities (Conrad & Barker, 2010). A social constructionist approach to illness is rooted in the widely recognized conceptual distinction between disease (the biological condition) and illness (the social meaning of the condition)". With respect to most mental disorders, including autism, there cannot be spoken of a disease, because there is no biological proof that they exist (Abrahams & Geschwind, 2008; Lord & Bishop, 2010). For something to be considered as a disease abnormalities need to be present in the body (Eisenberg, 1997; Derksen, 2011; Kraaijenbrink et al., 2016). It has therefore been argued that mental disorders are socially constructed (Jongedijk, 2001; Kraaijenbrink et al. 2016 & Eisenberg, 1997). In the next section I will elaborate on the social constructivist approach to autism as an illness.

The social constructionism perspective studies the social construction of social problems. Sociologists usually define a social problem as "an alleged situation that is incompatible with the values of a significant number of people who agree that action is needed to alter the situation" (Rubington & Weinberg, 2011, p. 3). In the social constructionism perspective, a social problem is defined as "conditions that have become culturally defined as troublesome, widespread, changeable and in need of change" (Rubington & Weinberg, 2011, p. 297). The cause of a social problem is the problem-defining activities that people engage in as they seek a redress for their complaints. The conditions can

be defined as "*the process involving interaction between complainants, as initiators, new agencies, as responders to their demands for redress*" (Rubington & Weinberg, 2011, p. 297).

I will now argue why autism can be considered a social problem. Behavior that is considered as 'autistic behavior' can be considered as deviant. For example, some people with autism find it difficult to make eye-contact and therefore do not look at people with whom they are having a conversation (Serra, Mulder, & Minderaa, 2002). Not making any eye contact is considered as deviant behaviour due to the fact that it is mentioned as a criterion for autism in the DSM IV and DSM 5. In chapter 4. I have provided an overview of the criteria of the DSM IV and the DSM 5. This shows that this kind of behavior is incompatible with the values of a significant number of people. People also agree that action is needed to change the situation, because autism is considered as a mental disorder and is in the DSM. This means it is considered necessary that people with these types of behaviors need to have a diagnosis to get a treatment. This treatment is considered helpful; it will help people with autism to live as normal as possible and to deal with the 'problems' they are considered to face. That people think that treatment is necessary for people with autism, also shows that there is action needed to alter the situation. In short, the definition of a social problem can be applied to autism which means that autism can be considered as a social problem. Given the fact that the social constructionism perspective studies social problems, we can apply the social constructionism perspective on the description of autism in the DSM.

MEDICALIZATION

Medicalization can be defined as a process of designating an illness or disease as a medical problem (Conrad, 2007; Conrad & Schneider, 1980). Trough medicalization, there exists problems which can be defined in medical terms and described using medical language. The problem is understood trough the adoption of a medical framework. For the problem to be 'solved' medical intervention is needed (Conrad, 2007). Conrad & Barker (2010, p. 74) who state that *"medicalization occurs when human problems or experiences become defined as medical problems, usually in terms of illnesses, diseases, or syndromes".* According to Conrad & Barker (2010) the medical knowledge about illness is not given by nature, but rather it is socially constructed by claim-makers and interested parties.

Busfield (2017) describes that the rise in the application of medicalization includes among others the advantages and the interests of the pharmaceutical industry and medical professionals. He argues that professionals might be focused on profits rather than the health of the people. This is in line with the theory of the conflict of interest, mentioned in the introduction. The medical-industrial complex is an example of this. Busfield (2017, p. 9) states that "*the term medical-industrial complex suggests a structure of power founded on a confluence of economic interests involving the medical profession,*

government, service providers, insurers, and medical technology manufacturers – a complex focused on making profits rather than putting the population's health at the forefront. Medicine is seen as part of a wider capitalist health empire extending well beyond the professional's activities". It is thought that the psychiatrists benefit if more people are diagnosed with a mental disorder, because of the financial ties they have with the pharmaceutical industry. It could, therefore, be the case that more and more behavior is medicalized to satisfy the interests of the psychiatrists and the pharmaceutical industry.

People might have the interest to medicalize, but they also need power to be able to medicalize. Lafrance & McKenzie-Mohr (2013, p. 122) state that "*it is a means through which those in power decide what is socially acceptable (deemed 'normal' or 'abnormal', 'healthy' or 'disordered') […]."* With respect to medicalization, it can be argued that the professionals who are involved in the construction process of the DSM have the power to decide what is socially acceptable. They have the power to decide what kind of behavior is considered as deviant. According to Conrad & Barker (2010, p. 73) "*rather than being value-neutral, some medical knowledge, implicitly or explicitly, shores up the interests of those groups in power*". When professionals want to medicalize certain behavior in order to sell more medication, for example, they need to have the power to implement this medicalization. Those who are involved in the construction process of the DSM have such power. They decide what is socially acceptable and they could promote their own interests by widening the criteria, for example. The consequence of the rise in medicalization is that many more behaviors are considered deviant and therefore are able to be medicalized (Busfield, 2017). Aditionally, people who were previously considered as being 'healthy' can be considered as 'ill' as a result of the medicalization process.

CONFLICT OF INTERESTS

In this section I will provide information about the conflict of interest that could be involved in the construction process of autism or any other mental disorder in the DSM. Moreover, I will give a preliminary answer to the main research question '*How has autism in the DSM (1952-2013) constructed over the years and can these changes be explained by the power of psychiatrists involved in the construction process?'*.

According to Lafrance & McKenzie-Mohr (2013) those with the greatest power can decide what will be accepted as legitimate knowledge, or in other words, what is accepted as the 'truth', and due to the fact that those who are involved in the construction process have the most power, the DSM reflects the interests of those people. However, it could also be the case that the professionals that are involved in the construction process of mental disorders in the DSM are influenced by corporate interest, for example, the pharmaceutical industry (Lafrance & McKenzie-Mohr, 2013). With respect

to the influence of corporate interest, it could be the case that there is an influence of the pharmaceutical industry in the construction of autism in the DSM, because of the direct ties between the psychiatrists who are involved in the construction process and the pharmaceutical industry.

In the case of the construction of the DSM it could be that the criteria are not purely based on empirical findings, but also on the personal interests of the professionals that are involved in the construction process of the DSM. If this is the case, the primary interest (to help people with a mental disorder achieve the correct diagnosis) could then be influenced by secondary interests. According to Cosgrove & Bursztajn (2009) almost 56 percent of the task force members of the DSM IV had direct financial ties with the pharmaceutical industry. The task force members received for example: research funding and/or honoraria, or were possibly present on a corporate or advisory board of certain drug companies and/or they held equity in a drug company which can be considered as a secondary interest (Cosgrove, Bursztajn, Krimsky, Anaya & Walker, 2009; Krimsky, 2010). Within the DSM 5 task force there was a larger number professionals (70 percent) who had financial ties with the pharmaceutical industry (Cosgrove & Bursztajn, 2009). This is problematic due to the fact that form many mental diagnoses psychopharmacology is the standard treatment (Cosgrove & Wheeler, 2013). As stated previously, the conflict of interest lies in the direct correlation of the number of people diagnosed with a mental disorder, the prescribed medications, and the financial benefit to the pharmaceutical industry and psychiatrists. The psychiatrists could have an influence on the number of people diagnosed with a mental disorder by describing mental disorder more as a medical problem in each new DSM edition. So, I define medicalization with respect to the description of autism in the DSM, as the materialized interests of psychiatrists.

PRELIMINARY ANSWER TO MY RESEARCH QUESTION AND THE HYPOTHESIS

As I have mentioned earlier those who have certain interest need the power to promote their interests. Each medical profession has different interests and a different amount of power. Psychiatrics might have other interests than other health professionals. Based on the literature I argue that psychiatrists have an influence on the description of autism as a medical problem in the DSM and that their power has increased with each new DSM edition.

The following hypothesis will be central in this thesis:

'As a result of an increase in the power of psychiatrists the description of autism in the DSM has become more and more in accordance with the interests of psychiatrists'.

3. THE RESEARCH APPROACH: RESEARCH DESIGN, DATA COLLECTION & DATA-ANALYSIS

In this chapter I will discuss the methodology of this research. It is a guideline for answering my main research question with the help of my sub-questions. In chapter 1 I have clarified the role each sub-question has in finding an answer to the main research question.

RESEARCH DESIGN

What we already knew from the literature was that the psychiatrists could have secondary interests, because of their direct financial ties with the pharmaceutical industry. However, It was only an assumption that these possible secondary interests of the psychiatrists could influence the construction process of mental disorders in the DSM. To be able to influence the construction process of autism in the DSM the psychiatrists needed power. Only with power they could make changes in the construction that were in line with their secondary interests. The aim of this research was to investigate whether the power of the psychiatrists has influenced the construction process of autism in the DSM. Therefore, a qualitative research was conducted. Qualitative research is a type of research that is able to provide a richer and deeper understanding of the research topic than quantitative research (Burton, 2010) This research was qualitative, because an in-depth analysis of the DSM was needed to answer the research questions. The method that used was a literature review. In this case the DSM editions were analyzed.

I have raised formulated the following research question to be able to investigate whether there is an influence of the power of the psychiatrist on the description of autism in the DSM:

'How has autism in the DSM (1952-2013) been constructed over the years and can these changes be explained by the power of psychiatrists involved in the construction process?' This provide an answer to this question I have formulated sub-questions. With the combined answers to these sub-questions the main research question can be answered. The following sub-questions were central in this research:

1. *Which changes have occurred in the description of autism spectrum disorder in the DSM editions?'*
2. *Which changes have occurred in the power of psychiatrics between 1952 (first DSM edition) and 2013 (DSM 5)?*
3. *'How can the changes in the description of autism spectrum disorder in each DSM edition be explained by changes in the power of psychiatrists'*

The first two sub-questions are descriptive and the third sub-question is explanatory. For this research, all five DSM editions were analyzed. The units of observations were: the DSM I till DSM 5 (DSM I (1952-

1968); DSM II (1968-1980); DSM III (1980-1994); DSM IV (1994-2013); DSM 5 (2013 – current)) and the professionals of different disciplines who were involved in the construction process. All DSM editions have been published by the American Psychiatric Association. Many health professionals have been involved in the construction process of the DSM. In the DSM I and the DSM II there was on single task force. In the construction process of the DSM III, IV and 5 the professionals the task force members were divided over workgroups.

In total, there were two variables important in this thesis. One variable was independent: the power the psychiatrists. Power can be defined as: "the probability that one actor within a social relationship will be in the position to carry out his own will despite resistance" (Grimnes, 1978, p. 725). In the case of the description of autism in the DSM, the psychiatrists could be an actor having the influence to carry out their will despite the resistance of other health professionals who were involved in the construction process of the DSM. There was also one dependent variable: the realization of the interests of psychiatrists. The interests of the psychiatrists will be realized when autism is more and more described as a medical problem in the DSM. The realization of interests is recognizable in the description of autism in the DSM. The more autism is described as a medical problem in the DSM, the more the interests of the psychiatrists are realized. As I have described in chapter 2 Conrad & Barker (2010, p. 74) state that "medicalization occurs when human problems or experiences become defined as medical problems, usually in terms of illnesses, diseases, or syndromes". The medical knowledge of diseases and illnesses is constructed by humans (Conrad & Barker, 2010). In figure 3. the relationship between the independent variable and the dependent variable is presented.

Figure 3. An illustration of the variables which were central in this research

Independent variable (X):   **Dependent   variable (Y):**

Power   **Realization of interests**

The following hypothesis was derived from the literature:

 'As a result of an increase in the power of psychiatrists over the years the description of autism in the DSM has become more and more in accordance with the interests of psychiatrists'.

As I have mentioned earlier in this chapter, this research will be qualitative. All the DSM editions have been analyzed to find an answer to the research question. I will now argue how I have found information for measuring my variables.

THE POWER OF PSYCHIATRISTS

In Appendix F. I have provided an overview of the task force members of each DSM edition. In the DSM III, DSM IV and the DSM 5 the task force was divided over different workgroups. There was a work-group for each mental disorder. However, professionals could be involved in more than one task force. In the DSM III autism was assigned to the workgroup infancy, childhood and adolescence disorders. In the DSM IV autism was assigned to the workgroup 'disorders usually first diagnosed during infancy, childhood or adolescence'. In the DSM 5 autism was assigned to the workgroup 'neurodevelopmental disorders'. With respect to measuring power, I have chosen to not only look at the mental disorder under which autism is assigned, because in the construction process of a mental disorder the whole task group was involved. The members of the different workgroups were only considered to have a certain expertise with respect to the various mental disorders and gave advice on the construction of the mental disorder. However, for a mental disorder to be constructed the whole task force had to decide whether they would accept the changes proposed by the work groups (APA, 2017).

I did the following to be able to analyze the task force of each DSM edition:

- First step: I have documented and numbered all the names of the professionals involved in the construction process. The professionals were divided over the different work groups and could be involved in more than one workgroup. I have documented all these names. Even though some names would be duplicate.

- Second step: because the professionals could be involved in more than one workgroup, I have removed all the duplicate names. The result was a list of members for each DSM edition that could be analyzed.

REALIZATION OF INTERESTS

According to Conrad (2007) the expansion of the medical jurisdiction goes hand in hand with the increase in medicalized categories and diagnoses. Moreover, the existing categories have expanded with each new DSM edition (Conrad, 2007). So, medicalization is visible in the description of autism in the DSM and the more medicalization, the more the interests of psychiatrists are realized. To illustrate:

Medicalization **=** Realization of interests

AND can be seen in the description of autism in the DSM.

In Appendix G. I have added the description of autism in the DSM III, IV and 5. In the DSM I and II autism was not a separate mental disorder. Therefore, I have only screened the DSM I and the DSM II on the word 'autism' or 'autistic'.

I have chosen for the following indicators:

1. Autism as a separate mental disorder in the DSM

    I have chosen for this indicator, because when autism has been taken up in the DSM as a mental disorders this means that the behavior that was associated with autism has been medicalized (Conrad, 2007; Conrad & Barker, 2010; Conrad & Schneider, 1980; Lafrance & McKenzie-Mohr, 2013). The behavior was no longer considered as normal. It was deviant behavior that needed treatment and therefore was taken up in the DSM as a mental disorder.

2. The number of criteria (the more, the more medicalization)

    I have chosen for this indicator, because the more criteria there are the more behavior is considered as deviant and therefore medicalized (Chamak & Bonniau, 2013). The interests of the psychiatrists will be realized, because when more behavior is considered as deviant, there will be more people who will be diagnosed with autism spectrum disorder and treated for it.

3. The number of sub-criteria (the more, the more medicalization)

    I have chosen for this indicator for the same reason as the one above.

I will now show how I have analyzed the data in order to find an answer to my sub-questions.

POWER OF PSYCHIATRISTS

The power of professionals was measured trough the percentage of psychiatrists involved in the construction process of each DSM edition. The more psychiatrists there were involved the more power they were considered to have in the construction process. In each DSM edition, there was a list of professionals who were involved in the construction process. However, it was not explicitly stated what kind of occupation they held. There could also not be found any documents in which it was stated what kind of occupations the members of each DSM edition held. Therefore, I have conducted the following steps to find the occupation of the professionals involved in the construction process and to also measure power. I did this for each DSM edition separately:

- First step: I have googled all the names of the professionals separately. I have googled the names exactly like they were written in the DSM. When I could not found an occupation, I added the word 'DSM' to the search name.

- Second step: When I did get a result after the third step, I added the occupation of the professional to the table. When I could not find an occupation or when it was unsure if someone was, for example, a psychologist, a psychiatrist or both, I have marked the occupation as 'unknown'.

- Third step: to find out how many psychiatrists were involved in the construction process of the DSM I divided the number of psychiatrists by the total number of professionals (unknown included). To present a clear image of the type of professionals involved in the process I have also presented the percentage of psychologists and other professionals who were involved in the construction process of the DSM.

REALIZATION OF INTERESTS

I have measured 'realization of interests' in three ways, I did this for each DSM edition separately:

- First step: I looked if autism was present as a mental disorder in the DSM. If autism was present as a mental disorder in the DSM this would mean that the interests of the psychiatrists were realized. Autism would then be considered as a medical problem which needed treatment.

- Second step: I have analyzed the number of criteria for autism listed in the DSM. There more criteria there were the more the interests of the psychiatrists were realized (and vice-versa).

- Third step: I have analyzed the number of sub-criteria listed in the DSM. The more sub-criteria there were the more the interests of the psychiatrists were realized (and vice-versa).

CONCLUSION

This research was qualitative. I have analyzed the DSM editions in order to find an answer to the sub-questions of this research. There were two variables central to this research: the power of the psychiatrists and the realization of the interests. To measure power, I have first collected the list of the task force members of each DSM edition. Then I have removed all duplicate names from the list of each DSM edition. There were no occupations mentioned on those lists and therefore I had to search what the occupation of each member of the DSM edition was. I did this with the help of google. I googled each member of the list for each DSM edition and added the occupation to the list. When I had finished the list, I divided the number of members of a certain profession by the total number of members. I did this for each DSM edition separately. To measure the realization of interests I had three indicators: autism had to be a separate mental disorder in the DSM, the number of criteria and the number of sub-criteria. The more criteria and sub-criteria there were, the more the interests of the psychiatrists were realized.

4. THE RESULTS OF THIS RESEARCH: THE INFLUENCE OF POWER & THE INTERESTS OF PSYCHIATRISTS

In this chapter I will provide the results of my analysis of the description of autism in each DSM edition and the percentage of psychiatrists involved in the construction process of each DSM edition. After that I will give an answer to the sub-questions.

ANALYSIS OF AUTISM IN ALL THE DSM EDITIONS

In table 2 I have provided an overview of the description of autism in each DSM edition and the percentage of psychiatrists in the process. Before I will answer my sub questions I will provide a description of autism and the power of the psychiatrists for each DSM edition separately.

TABLE 2. THE DESCRIPTION OF AUTISM IN ALL DSM EDITIONS

Medicalization				Power
	A. Autism as a mental disorder in the DSM	*B. The number of main criteria mentioned*	*C. The number of subcriteria*	*D. The % of psychiatrists involved in the construction process*
DSM I (1952)	Not applicable Autism was a symptom of paranoid schizophrenia and childhood schizophrenia	Not applicable	Not applicable	39,3%
DSM II (1968)	Not applicable Autism was a symptom of childhood schizophrenia	Not applicable	Not applicable	56,4%
DSM III (1980)	Infantile autism was introduced as a subtype of pervasive development disorders Unrelated to schizophrenia	Six	Not applicable	58,0%
DSM IV (1994)	Childhood autism, Asperger and PDD-NOS were introduced as a subtype of pervasive development disorders.	Five	Twelve	63,4%
DSM 5 (2013)	Autism spectrum disorder as a main category. No subtypes. Both Asperger and PDD-NOS were removed from the DSM.	Five	Seven	53,7%

DSM I (1952)

THE DESCRIPTION OF AUTISM

Autism was not a separate diagnostic category in the DSM I, rather autism was a symptom of paranoid schizophrenia and childhood schizophrenia. With respect to the paranoid type of schizophrenia it is mentioned in the DSM I that this type of schizophrenia is characterized by autistic thinking. With respect to the childhood type the DSM mentions that there are psychotic reactions in children, which are manifesting primarily autism. See table 2, column A. for the description of autism in the DSM.

PERCENTAGE OF PSYCHIATRICS INVOLVED

In the DSM I 39,3 percent of all the professionals involved in the construction process was a psychiatrist (see table 2. and 14,3 percent were either a neurologist, biologist, psychoanalyst or physician. The occupation of almost the half (46,4 percent) of the professionals involved in the construction process it is unknown what kind of occupation they had. See table 2, column D for the percentage of psychiatrists involved in the construction process. In appendix A there is a list of all the professionals involved in the construction process of the DSM I.

DSM II (1968)

THE DESCRIPTION OF AUTISM IN THE DSM II

Autism was still not a separate diagnostic category in the DSM II. In the DSM II autism was considered a symptom of childhood schizophrenia. It is mentioned that with childhood schizophrenia there is 'autistic' behavior. With respect to the paranoid type of schizophrenia, there was no longer referenced to 'autistic' behavior. See table 2, column A. for the description of autism in the DSM.

PERCENTAGE OF PSYCHIATRICS INVOLVED

In the DSM II 56,4% of all the professionals involved in the construction process was a psychiatrist. There were also psychoanalysts/physicians, neurologists and biologists involved in the construction process, but this is a small number (10,3 percent). The occupation of one third (33,3%) of the professionals who were involved in the construction process it is unknown what kind of occupation they had. See table 2, column D. for the percentage of psychiatrists involved in the construction process. In appendix B. there is a list of all the professionals involved in the construction process of the DSM II.

DSM III (1980)

THE DESCRIPTION OF AUTISM

In the DSM III there was an introduction of pervasive developmental disorder and infantile autism was introduced as a category of this disorder. In the DSM I and II autism was linked to schizophrenia, this is not the case in the DSM III. In the DSM III schizophrenia and infantile autism were considered as two unrelated disorders. In total there were six diagnostic criteria for infantile autism. See figure 4 for the criteria of autism in the DSM III. In table 2, column A, B and C there is an overview of the description of autism in the DSM, the number of criteria and the number of sub-criteria.

FIGURE 4. THE DIAGNOSTIC CRITERIA FOR AUTISM IN THE DSM III

Diagnostic criteria for Infantile Autism
A. Onset before 30 months of age.

B. Pervasive lack of responsiveness to other people (autism).

C. Gross deficits in language development.

D. If speech is present, peculiar speech patterns such as immediate and delayed echolalia, metaphorical language, pronominal reversal.

E. Bizarre responses to various aspects of the environment, e.g., resistance to change, peculiar interest in or attachments to animate or inanimate objects.

F. Absence of delusions, hallucinations, loosening of associations, and incoherence as in Schizophrenia.

PERCENTAGE OF PSYCHIATRICS INVOLVED

In the construction process of the DSM III more than the half (58,0 percent) of the professionals involved in the construction process was listed as a psychiatrist. Of all professionals involved in the construction process, 11,2 percent were listed as psychologists, physicians, sexologists and psychoanalysts, see Appendix A. The occupation of 30,8 percent of the professionals involved in the construction process it is not known what kind of occupation they had. In appendix C. there is a list of all the professionals involved in the construction process of the DSM III.

THE DESCRIPTION OF AUTISM

In the DSM IV childhood autism was designated 'autistic disorder'. There was an introduction of Asperger disorder and PPD-NOS as a subtype of pervasive developmental disorders. These subtypes were related to 'autism'. In the DSM IV there were seventeen diagnostic criteria for 'autistic disorder' in total. See figure 5 for the criteria of autism in the DSM IV. In table 2. I have provided an overview of the description of autism in the DSM, the number of criteria and the number of sub-criteria (column A, B and C).

FIGURE 5. THE DIAGNOSTIC CRITERIA FOR AUTISM IN THE DSM IV

■ **Diagnostic criteria for 299.00 Autistic Disorder**

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

(1) qualitative impairment in social interaction, as manifested by at least two of the following:

(a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction

(b) failure to develop peer relationships appropriate to developmental level

(c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)

(d) lack of social or emotional reciprocity

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

(a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)

(b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others

(c) stereotyped and repetitive use of language or idiosyncratic language

(d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(continued)

☐ **Diagnostic criteria for 299.00 Autistic Disorder** (*continued*)

> (3) restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:
> > (a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
> > (b) apparently inflexible adherence to specific, nonfunctional routines or rituals
> > (c) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
> > (d) persistent preoccupation with parts of objects
>
> B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years: (1) social interaction, (2) language as used in social communication, or (3) symbolic or imaginative play.
>
> C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder.

PERCENTAGE OF PSYCHIATRICS INVOLVED

More than half of the professionals who were involved in the process of the DSM IV was a psychiatrist (63,4%). About 12,2% of the professionals was not a psychiatrist, but had another profession. They were for example a psychologist, neurologist or a physician. Less than one fourth of the professionals was listed as unknown (24,4%). In appendix D. there is a list of all the professionals involved in the construction process of the DSM IV.

DSM 5 (2013)

THE DESCRIPTION OF AUTISM

In the DSM 5 some drastic changes were made. All autism subtypes had become 'autism spectrum disorder' and Asperger and PDD-NOS were totally removed from the DSM. There were twelve criteria in total. This is in fact less than the DSM IV. See figure 6. For the description in the DSM 5. In table 2. Column a, b, and c. there is an overview of the description of autism in the DSM, the number of criteria and the number of sub-criteria.

FIGURE 6. THE DIAGNOSTIC CRITERIA FOR AUTISM IN THE DSM 5

Autism Spectrum Disorder

Autism Spectrum Disorder

Diagnostic Criteria	299.00 (F84.0)

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (seeTable 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).

3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).

4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:
With or without accompanying intellectual impairment
With or without accompanying language impairment
Associated with a known medical or genetic condition or environmental factor
(**Coding note:** Use additional code to identify the associated medical or genetic condition.)
Associated with another neurodevelopmental, mental, or behavioral disorder
(**Coding note:** Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioral disorder[s].)
With catatonia (refer to the criteria for catatonia associated with another mental disorder, pp. 119–120, for definition) (**Coding note:** Use additional code 293.89 [F06.1] catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

PERCENTAGE OF PSYCHIATRICS INVOLVED

In the DSM 5 was 53,7 percent of the professionals involved in the construction process were listed as psychiatrists. Less than a quarter (22,9%) of the professionals was listed as 'unknown'. The remaining professionals had another occupation. They were for example a psychologist, an epidemiologist or a physician. In appendix E. there is a list of all the professionals involved in the construction process of the DSM V.

AN ANSWER TO THE SUB-QUESTIONS

Now that I have described the description of autism in each DSM edition and the number of psychiatrists that were involved in the construction process of each DSM edition.

THE CHANGES IN THE CONSTRUCTION OF AUTISM SPECTRUM DISORDER IN THE DSM EDITIONS

My first sub-question was 'which changes have occurred in the construction of autism spectrum disorder in the DSM editions?'. There have been many changes in the DSM editions over the years. Autism has become designated as a mental disorder in 1980 when the DSM III was introduced. Before that autism was not considered as a mental disorder. In 1980 (DSM III) autism was only considered as a mental disorder that children could have. From the DSM IV and on, also adults could be diagnosed with autism. With respect to the criteria, there has been an increase in the criteria from the DSM III to

the DSM IV. In total, there were six criteria in the DSM III and seventeen in the DSM IV. From the DSM IV to the DSM 5 there was a decrease in the number of criteria. With respect to the answer to the question it can be stated that autism was only a mental disorder in the DSM III, IV and the DSM-5. The diagnostic criteria have increased from the DSM III to IV and there has been a decrease from the DSM IV to the DSM-5. In other words, from the DSM I to the DSM IV the interests of psychiatrists were more realized and from the DSM IV tot the DSM V the interests of psychiatrists were less realized. Now that I have answered the first sub-question, I will answer the second sub-question.

THE POWER OF PSYCHIATRICS BETWEEN 1952 (FIRST DSM EDITION) AND 2013 (DSM 5)

My second sub-question was 'which changes have occurred in the power of psychiatrics between 1952 (first DSM edition) and 2013 (DSM 5)?'. From the percentages provided above we can see that the power of the psychiatrists increased from the first DSM till the fourth (DSM I: 39,3%; DSM II: 56,4%; DSM III: 58,0%; DSM IV; 63,4%). However, with the fifth DSM the power of the psychiatrist decreased. Only 53,7 percent of the professionals involved in the construction process were psychiatrists. This means that with respect to the DSM 5 there were fewer psychiatrists involved than with the DSM II. To answer the second sub-question, it can be stated that the power of psychiatrists has increased from the DSM I to the DSM IV, but not, however, from the DSM IV to the DSM V. From the DSM IV to the DSM V the power of psychiatrics has decreased.

THE CHANGES IN POWER AND THE REALIZATION OF INTERESTS

My third sub-question was 'how can the changes in the construction of autism spectrum disorder in each DSM edition be explained by changes in the power of psychiatrists?'. As I have described there has been an increase from the DSM I till the DSM IV in the percentage of psychiatrists involved in the construction process of the DSM. This increase in power of the psychiatrists aligned with an increase in the number of criteria of autism from the DSM I till the DSM IV. On the other hand, from the DSM IV to the DSM 5 the power of the psychiatrists declined. This was also the case with the number of criteria. With respect to the question 'how can the changes in the construction of autism spectrum disorder in each DSM edition be explained by changes in the power of psychiatrists?' it can be stated that there was a correlation between power and the realization of interests. When the power increased, the realization of interests increased and when the power decreased the realization of interests decreased. So, the changes in the construction of autism spectrum disorder could be explained by the power of psychiatrists.

5. THE CONCLUSION AND THE DISCUSSION OF THE RESULTS OF THIS RESEARCH

In this master thesis, I have researched the relationship between the power of psychiatrists and the realization of interests of the psychiatrists. In this chapter I will give an answer to the main research question and I will discuss if the results have supported the hypothesis. After that I will discuss the main findings, make policy recommendations and discuss the strengths and weaknesses of this research.

The main research question is this master thesis was: '*How has autism in the DSM (1952-2013) been constructed over the years and can these changes be explained by the power of psychiatrists involved in the construction process?'.*

With respect to the first part of the main research question *'How has autism in the DSM (1952-2013) been constructed?'* It can be stated that Autism was only in the DSM from 1980 when the DSM III was introduced. Before that autism was not considered as a mental disorder, but rather it was only considered as a symptom of schizophrenia. From the DSM III to the DSM IV the number of criteria of autism had increased from six tot seventeen criteria and from the DSM IV to the DSM V the number of criteria had decreased from seventeen to twelve criteria.

The second part of the question was *'can these changes be explained by the power of psychiatrists involved in the construction process?'* As I have described in the previous chapter, the power of the psychiatrists had increased from the DSM I (1952) till the DSM IV (1994). From the DSM IV (1994) to the DSM 5 (2013) the power of the psychiatrists had decreased. This aligns with the expansion and reduction of the criteria in the DSM. From the DSM III to the DSM IV the number of criteria had expanded and from the DSM IV (1994) to the DSM 5 (2013) there was a reduction in the number of criteria. Based on this it can be stated that there was a possible correlation between the power of the psychiatrists and the realization of the interests of the psychiatrists. The more power the psychiatrists had the more their interests were realized. With respect to the question *'can these changes be explained by the power of psychiatrists involved in the construction process?'* it can be stated that there has been found a correlation between the power of psychiatrists and the realization of the interests of psychiatrists. An increase in the power of psychiatrists aligned with changes that were realizing the interests of the psychiatrists and a decrease in power aligned with changes that were not realizing the interests of the psychiatrists. It therefore seems likely that the changes (the introduction of autism as a mental disorder and the increase in decrease in the number of criteria) can be explained by the power of psychiatrists.

These findings also support the hypothesis that was central in this thesis.

Hypothesis: *'As a result of an increase in the power of psychiatrists the description of autism in the DSM has become more and more in accordance with the interests of psychiatrists'*.

This hypothesis can be confirmed, because the increase in the realization of interests the DSM aligned with an increase in power of the psychiatrists with respect to the DSM I, DSM II, DSM III and DSM IV. Alternatively, from the DSM IV to the DSM V there was a decrease in the power of psychiatrists which aligned with a decrease in the realization of interests of the psychiatrists.

REFLECTION OF THE THEORY

In chapter 2 of this master thesis I have discussed what the current state of knowledge is with respect to the construction process of mental disorders in the DSM. In particular, I have provided more information about the conflict of interests with respect to the construction of mental disorders in the DSM.

In this research, I have studied the social constructionism perspective and the theory of medicalization. The social constructionism perspective focuses on mental disorders constructed as illnesses (Eisenberg, 1977) and medicalization can be defined as a process of designating an illness or disease as a medical problem (Conrad, 2007; Conrad & Schneider, 1980). These theories could easily be applied to the description of autism in the DSM. Based on the social constructionism perspective I can conclude that autism is socially constructed, an illness and not a disease, because there is no biological proof that autism exists (Abrahams & Geschwind, 2008; Lord & Bishop, 2010). With respect to medicalization, the description of autism in the DSM shows that autism is considered as a medical problem. Autism would not be a medical problem if it was not mentioned as a mental disorder in the DSM. Busfield (2017) states that rise in the application of medicalization has been caused by the interests of the pharmaceutical industry and medical professionals. He argues that professionals might be focused on profits rather than the health of the people. In other words: they have secondary interests. Conrad & Barker (2010) state that medical knowledge could shore up the interests of groups in power. The DSM is an example of this.

The research of Cosgrove & Bursztajn (2009) has shown that more than half of the task force members had direct financial ties with the pharmaceutical industry. This finding has led to the assumption that the professionals involved in the construction process of mental disorder in the DSM had secondary interests and therefore that the description of mental disorders in the DSM would reflect the interests of the pharmaceutical industry and the professionals which had direct financial ties with the pharmaceutical industry (Cosgrove, et al., 2009; Cosgrove & Bursztajn, 2009; Krimsky, 2010). However,

this was only an assumption and had never been investigated. This research has shown that the assumption was correct, at least for the description of autism in the DSM. This research has shown that the increase in the power of the psychiatrists aligned with an increase in the description of autism as a medical problem, or in other words: the realization of the interests of the psychiatrists. When the power decreased, there was a decrease in the realization of interests. Which shows that there was a correlation between the power of the psychiatrists and the realization of interests. With the help of this research I have added more knowledge. Until now it was only an assumption that the construction process of mental disorders in the DSM was influenced by the psychiatrists and (indirectly) by the pharmaceutical industry. In figure 7, I have provided an overview of what we already knew and what we know now based on the findings of this research. The findings of this research have contributed to filling the knowledge gap.

Figure 7. An illustration of what was already known (grey rectangle) and what is now known (blue rectangle).
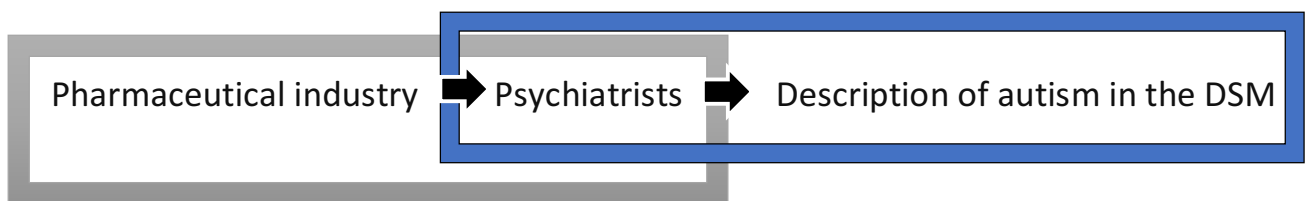
Moreover, these findings have societal relevance. Now that we have found that there are secondary interests involved, it could be the case that people do not get the right diagnosis anymore, because the focus is no longer only on getting people the right diagnosis. This is something that is not desirable, because of the stigmatization that goes hand in hand with being diagnosed with a mental disorder (Jongedijk, 2001; Rüsch, Angermeyer & Corrigan, 2005; Link, Struening, Rahav, Phelan & Nuttbrock, 1997). Therefore, the primary interest of the psychiatrics that are involved in the construction process of the DSM should not be influenced by the secondary interest.

To be sure that the construction process of mental disorder in the DSM is not influenced by the pharmaceutical industry, my advice is to develop a policy that forbids that the majority of the task force members to have direct financial ties with the pharmaceutical industry. This could be considered as a practical way to ensure balance and to avoid that the professionals with secondary interests also have the power to realize those interests.

As it is the case in every research, this research has strengths and weaknesses. The first strength of this research is that there is more knowledge provided about the social constructionism perspective. I have shown that the social constructionism perspective can be applied to the description of autism in

the DSM. Therefore, it can be stated that autism is socially constructed. The second strength of this research is that it has provided more knowledge about the possible controversy with respect to the construction process. In the introduction, there was mentioned that more than half of the professionals involved in the construction process of the DSM had direct financial ties with the pharmaceutical industry and that the professionals involved in the construction process might therefore have secondary interests. (Cosgrove & Bursztajn, 2009; Cosgrove, Bursztajn, Krimsky, Anaya & Walker, 2009; van Os, 2012). In the introduction, I have stated that if the secondary interests of psychiatrists have an influence of the construction of autism in the DSM this could mean that people get falsely diagnosed (Jongedijk, 2011). The results of this research indicate that this could be the case, because have found that there could be a possible correlation between the power and the realization of the interests of psychiatrists. This is relevant to society, because it this would mean that there is a higher probability that people get falsely diagnosed and stigmatized.

There were also a few weaknesses to this research that should be addressed in future research. The first weakness is that I have googled the names of the professionals to find out their occupation, but that it is not known whether the occupation they have now was also the occupation which they had when they were involved in the construction process of the DSM. Additionally, there was a high percentage of professionals of whom their specific occupation was unknown. Therefore, it could be beneficial to measure power in a different way. Power can also be measured by interviewing professionals that were involved in the construction process of the DSM. They could be asked which occupation they do consider having the most power in the construction process of each DSM edition. The second weakness is that autism did not became a mental disorder until the DSM III and that there were only five DSM editions. Therefore, the three indicators of 'realization of interests' (the presence of autism as a mental disorder in the DSM, the number of criteria listed in the DSM, the number of sub-criteria listed in the DSM) could only be applied to three DSM editions. There are no practical solutions for this other than finding extra indicators to measure the realization of interests or a whole other way to measure the realization of interests.

The limitations of this research can be overcome by future research. For future research, it could be an idea to also study the description of other mental disorders in the DSM. The correlation between the power of the psychiatrists and the realization of interests could possibly also be found with other mental disorders. It is also important to study if the decline in the power of psychiatrists from the DSM IV to the DSM 5 on the construction of autism in the DSM has also occurred with other mental disorder. This does not have to be the case, which would mean that the pharmaceutical industry still has a big influence on the construction process of mental disorders in the DSM.

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7. APPENDICES

APPENDIX A. LIST OF PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROCESS OF THE DSM I

Number	Name of member	Occupation
1.	George N. Rainee	Unknown
2.	Moses M. Frohlich	Psychiatrist
3.	Ernest S. Goddard	Biologist
4.	Baldwin L. Keyes	Unknown
5.	Mabel Ross	Unknown
6.	Robert S. Schwab	Neurologist
7.	Harvey J. Tompkins	Psychiatrist
8.	Franz Alexander	Psychoanalyst/physician
9.	John M. Baird	Unknown
10.	Abraham E. Bennett	Psychiatrist
11.	George F. Brewster	Unknown
12.	Norman Q. Brill	Psychiatrist
13.	Walter L. Breutsch	Unknown
14.	John M. Caldwell	Unknown
15.	J. P. S. Cathcart	Psychiatrist
16.	Sidney G. Chalk	Unknown

17.	Neil A. Dayton	Unknown
18.	Clarence O. Cheney	Unknown
19.	Jacob H. Friedman	Psychiatrist
20.	Jacob Kasanin	Psychiatrist
21.	Lawrence Kolb	Psychiatrist
22.	Nolan D. C. Lewis	Psychiatrist
23.	James V. May	Psychiatrist
24.	H. Houston Merritt	Neurologist
25.	J. Davis Reichard	Unknown
26.	George S. Sprague	Unknown
27.	Edward A. Strecker	Psychiatrist
28.	Paul L. White	Unknown

APPENDIX B. LIST OF PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROCESS OF THE DSM II

Number	Name of member	Occupation
1.	Ernest M. Gruenberg	Psychiatrist
2.	Richard L. Jenkins	Psychiatrist
3.	Lothar B. Kalinowsky	Psychiatrist
4.	Henriette Klein	Psychiatrist
5.	Benjamin Pasamanick	Psychiatrist
6.	W. R. Slenger	Unknown
7.	Morton Kramer	Psychiatrist
8.	Ribert L. Spitzer	Psychiatrist
9.	Lawrence C. Kolb	Psychiatrist
10.	Edward Stainbrook	Psychiatrist
11.	Franz Alexander	Psychoanalyst/physician
12.	John M. Baird	Unknown
13.	Abraham E. Bennett	Psychiatrist
14.	George F. Brewster	Unknown
15.	Henry Brill	Psychiatrist
16.	Norman Q. Brill	Psychiatrist
17.	Walter L. Breutsch	Unknown
18.	John M. Caldwell	Unknown

19.	J. P. S. Cathcart	Psychiatrist
20.	Sidney G. Chalk	Unknown
21.	Clarence O. Cheney	Unknown
22.	Neil A. Dayton	Unknown
23.	Jacob H. Friedman	Psychiatrist
24.	Moses M. Frohlich	Psychiatrist
25.	Ernest S. Goddard	Biologist
26.	Jacob Kasanin	Psychiatrist
27.	Baldwin L. Keyes	Unknown
28.	Lawrence Kolb	Psychiatrist
29.	Nolan D. C. Lewis	Psychiatrist
30.	James V. May	Psychiatrist
31.	H. Houston Merritt	Neurologist
32.	George N. Raines	Psychiatrist
33.	J. Davis Reichard	Unknown
34.	Mabel Ross	Unknown
35.	Robert S. Schwab	Neurologist
36.	George S. Sprague	Unknown
37.	Edward A. Strecker	Psychiatrist
38.	Harvey J. Tompkins	Psychiatrist
39.	Paul L. White	Unknown

APPENDIX C. LIST OF PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROCESS OF THE DSM III

Number	Name of member	Occupation
1.	Robert L. Spitzer, M.D., Chairperson	Psychiatrist
2.	Morton Kramer, Sc.D.*	Psychiatrist
3.	Nancy Andreasen, M.D., Ph.D.	Psychiatrist
4.	Z.J. Lipowski, M.D.	Psychiatrist
5.	Robert L. Arnstein, M.D.	Psychiatrist
6.	Michael L. Mavroidis, M.D.	Psychiatrist
7.	Dennis Cantwell, M.D.	Psychiatrist
8.	Theodore Millon, Ph.D.*	Psychologist
9.	Paula J. Clayton, M.D.	Psychiatrist
10.	Henry Pinsker, M.D.	Psychiatrist
11.	Jean Endicott, Ph.D.*	Psychiatrist
12.	George Saslow, M.D., Ph.D.	Psychiatrist
13.	William A. Frosch, M.D.	Psychiatrist
14.	Michael Sheehy, M.D.	Unknown
15.	Rachel Gittelman, Ph.D.*	Unknown
16.	Robert Woodruff, M.D. (deceased)	Unknown
17.	Donald W. Goodwin, M.D.	Psychiatrist

18.	Lyman C. Wynne, M.D., Ph.D.	Psychiatrist and psychologist
19.	Donald F. Klein, M.D.	Psychiatrist
20.	Robert Byck, M.D.	Psychiatrist and pharmacologist
21.	John Kuehnle, M.D.	Unknown
22.	Z.J. Lipowski, M.D.	Psychiatrist
23.	Gene D. Cohen, M.D.	Psychiatrist
24.	Benjamin Seltzer, M.D.	Psychologist
25.	Phillip Zeidenberg, M.D., Ph.D.	Unknown
26.	Barry Gurland, M.D.	Psychiatrist
27.	Sidney Cohen, M.D.	Physician
28.	Robert M. Morse, M.D.	Physician
29.	Everett Ellinwood, M.D.	Unknown
30.	William M. Petrie, M.D.	Psychiatrist
31.	Richard B. Resnick, M.D.	Psychiatrist
32.	Michael I. Good, M.D.	Unknown
33.	Lee N. Robins, Ph.D.	Psychiatrist
34.	Henry L. Rosett, M.D.	Unknown
35.	Jerome H. Jaffe, M.D.	Psychiatrist
36.	Edward J. Khantzian, M.D.	Psychiatrist
37.	Sheldon Zimberg, M.D.	Psychiatrist
38.	Roger E. Meyer, M.D.	Psychiatrist

39.	Janet B.W. Williams, M.S.W.	Psychiatrist
40.	Harrison G. Pope, Jr., M.D.	Psychiatrist
41.	Joseph F. Lipinski, M.D.	Psychiatrist
42.	Michael L. Mavroidis, M.D.	Psychiatrist
43.	Michael Gelder, M.D.	Unknown
44.	Isaac Marks, M.D.	Psychiatrist
45.	David A. Soskis, M.D.	Psychiatrist
46.	Steven E. Hyler, M.D.	Psychiatrist
47.	Paul Luisada, M.D.	Psychiatrist
48.	Norman Sussman, M.D.	Psychiatrist
49.	Roger Peele, M.D.	Psychiatrist
50.	Allen J. Frances, M.D.	Psychiatrist
51.	John Lion, M.D.	Unknown
52.	Roger A. MacKinnon, M.D.	Psychiatrist
53.	Anke A. Ehrhardt, Ph.D.	Psychologist
54.	Diane S. Fordney-Settlage, M.D.	Physician
55.	Richard Friedman, M.D.	Psychiatrist
56.	Paul Gebhard, Ph.D.	Anthropologist and sexologist
57.	Richard Green, M.D.	Psychiatrist and sexologist
58.	Helen S. Kaplan, M.D., Ph.D.	Unknown
59.	Judith B. Kuriansky, Ed.M.	Unknown

60.	Harold I. Lief, M.D.	Psychiatrist and psychoanalyst
61.	Theodore Millon, Ph.D.	Psychologist
62.	Henry Pinsker, M.D.	Psychiatrist
63.	Lee N. Robins, Ph.D.	Psychiatrist
64.	Jon K. Meyer, M.D.	Psychiatrist
65.	John Money, Ph.D.	Psychologist and sexologist
66.	Ethel Person, M.D.	Psychiatrist and psychoanalyst
67.	Lawrence Sharpe, M.D.	Unknown
68.	Robert J. Stoller, M.D.	Psychiatrist
69.	Arthur Zitrin, M.D.	Psychiatrist
70.	Justin D. Call, M.D.	Psychiatrist
71.	Stella Chess, M.D.	Psychiatrist
72.	Everett Dulit, M.D.	Psychiatrist
73.	Richard Jenkins, M.D.	Psychiatrist
74.	Hilde Bruch, M.D.	Psychoanalyst
75.	James M. Ferguson, M.D.	Unknown
76.	Robert J. Lifton, M.D.	Psychiatrist
77.	Chaim F. Shatan, M.D.	Psychiatrist
78.	Robert L. Custer, M.D.	Psychiatrist
79.	John Frosch, M.D.	Unknown

80.	J. Gary May, M.D.	Unknown
81.	Joaquim Puig-Antich, M.D.	Psychiatrist
82.	Judith Rapoport, M.D.	Psychiatrist
83.	David Shaffer, M.D.	Psychiatrist
84.	Richard Ward, M.D.	Unknown
85.	Paul Wender, M.D.	Unknown
86.	Katherine Halmi, M.D.	Psychiatrist
87.	Albert James Stunkard, M.D.	Unknown
88.	Jack Smith	Unknown
89.	Nicholas D. Rizzo, M.D.	Psychiatrist
90.	James Brophy, M.D.	Unknown
91.	Igor Grant, M.D.	Psychiatrist
92.	E.K. Gunderson, M.D.	Psychologist
93.	Martin R. Lipp, M.D.	Unknown
94.	John G. Looney, M.D.	Psychiatrist
95.	Edwin J. Olsen, M.D.	Psychiatrist
96.	William Carpenter, M.D.	Psychologist
97.	Miriam Gibbon, M.S.W.	Unknown
98.	Frederic W. Ilfeld, Jr., M.D.	Psychiatrist
99.	Frederic Kass, M.D.	Psychiatrist
100.	Juan E. Mezzich, M.D., Ph.D.	Psychiatrist

101.	James Morgan, M.D.	Unknown
102.	Robert Simon, M.A.	Unknown
103.	John S. Strauss, M.D.	Psychiatrist
104.	Steven E. Hyler, M.D.	Psychiatrist
105.	Jerrold S. Maxmen, M.D.	Psychiatrist
106.	Lawrence Sharpe, M.D.	Physician
107.	Lorian Baker, Ph.D.	Unknown
108.	Robert Cloninger, M.D.	Psychiatrist
109.	John E. Cooper, M.D.	Unknown
110.	Irving Gottesman, Ph.D.	Psychologist
111.	Samuel Guze, M.D.	Psychiatrist
112.	Assen Jablensky, M.D.	Psychiatrist
113.	Gerald Klerman, M.D.	Psychiatrist
114.	Eli Robins, M.D.	Psychiatrist
115.	Howard Roffwarg, M.D.	Neurologist
116.	Michael Rutter, M.D.	Unknown
117.	Norman Sartorius, M.D., Ph.D.	Psychiatrist
118.	Robert H. Seeman, M.A.	Unknown
119.	Arthur Shapiro, M.D.	Unknown
120.	Elaine Shapiro, Ph.D.	Unknown
121.	Abby Sher, M.A.	Unknown

122.	Andrew E. Skodol, M.D.	Psychiatrist
123.	Richard A. Sternbach, Ph.D.	Psychologist
124.	John K. Wing, M.D., Ph.D.	Psychiatrist
125.	George Winokur, M.D.	Psychiatrist
126.	Hector Jaso, M.D., Chairperson	Unknown
127.	Howard Berk, M.D.	Unknown
128.	Robert Bittle, M.D.	Unknown
129.	Harvey Bluestone, M.D.	Psychiatrist
130.	Richard Finn, M.D.	Unknown
131.	Jerry Morrow, M.D.	Unknown
132.	K.C.R. Nair, M.D.	Unknown
133.	Roger Peele, M.D.	Psychiatrist
134.	Kenneth Pitts, M.D.	Unknown
135.	Erwin R. Smarr, M.D.	Psychiatrist
136.	Granville Tolley, M.D.	Unknown
137.	Stephen Washburn, M.D.	Unknown
138.	Walter Winslow, M.D.	Unknown
139.	H. Keith H. Brodie, M.D., Chairperson	Psychiatrist
140.	John A. Talbott, M.D.	Psychiatrist
141.	Robert Campbell, M.D.	Unknown

142.	Jules H. Masserman, M.D. (ex officio)	Psychiatrist and psychoanalyst
143.	Lew Robbins, M.D.	Unknown

APPENDIX D. LIST OF PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROCESS OF THE DSM IV

Number	Name of member	Occupation
1.	Nancy Coover Andreasen, M.D., Ph.D.	Psychiatrist
2.	David H. Barlow, Ph.D.	Psychologist
3.	Magda Campbell, M.D.	Unknown
4.	Dennis P. Cantwell, M.D.	Psychiatrist
5.	Ellen Frank, Ph.D.	Unknown
6.	Judith H. Gold, M.D.	Unknown
7.	John Gunderson, M.D.	Psychologist
8.	Robert E. Hales, M.D.	Psychiatrist
9.	Kenneth S. Kendler, M.D.	Psychiatrist
10.	David J. Kupfer, M.D.	Psychiatrist
11.	Michael R. Liebowitz, M.D.	Psychiatrist
12.	Juan Enrique Mezzich, M.D., Ph.D.	Psychiatrist
13.	Peter E. Nathan, Ph.D.	Unknown
14.	Roger Peele, M.D.	Psychiatrist
15.	Darrel A. Regier, M.D., M.P.H.	Psychiatrist
16.	A. John Rush, M.D.	Psychiatrist
17.	Chester W. Schmidt, M.D.	Psychiatrist

18.	Marc Alan Schuckit, M.D.	Psychiatrist
19.	David Shaffer, M.D.	Psychiatrist
20.	Robert L. Spitzer, M.D., Special Adviser	Psychiatrist
21.	Gary J. Tucker, M.D.	Psychiatrist
22.	B. Timothy Walsh, M.D.	Psychiatrist
23.	Thomas A. Widiger, Ph.D.,	Psychologist
24.	Janet B. W. Williams, D.S.W.	Psychiatrist
25.	John C. Urbaitis, M.D., Assembly Liaison	Psychiatrist
26.	James J. Hudziak, M.D.,	Psychiatrist
27.	Junius Gonzales, M.D.,	Unknown
28.	Ruth Ross, M.A.,	Unknown
29.	Nancy E. Vettorello, M.U.P.,	Psychiatrist
30.	Wendy Wakefield Davis, Ed.M.,	Research associate
31.	Cindy D. Jones,	Unknown
32.	Nancy Sydnor-Greenberg, M.A.,	Unknown
33.	Myriam Kline, M.S.,	Assistent investigator
34.	James W. Thompson, M.D., M.P.H.,	Unknown
35.	Michael R. Liebowitz, M.D., Chairperson	Psychiatrist

36.	David H. Barlow, Ph.D., Vice-Chairperson	Psychologist
37.	Edna Foa, Ph.D.	Psychiatrist
38.	James C. Ballenger, M.D.	Psychiatrist
39.	Abby Fyer, M.D.	Psychiatrist
40.	Gary Lloyd Gottlieb, M.D.	Lawyer
41.	Michael Popkin, M.D., Vice-Chairperson	Unknown
42.	Igor Grant, M.D.	Neuropsychiatrist
43.	Eric Douglas Caine, M.D.	Unknown
44.	Benjamin Liptzin, M.D.	Psychiatrist
45.	Marshall Folstein, M.D.	Unknown
46.	David Shaffer, M.D., Co-Chairperson	Psychiatrist
47.	Benjamin Lahey, Ph.D.	Psychiatrist
48.	Rolf Loeber, Ph.D.	Psychologist and psychiatrist
49.	Susan J. Bradley, M.D.	Psychiatrist
50.	Jeffrey Newcorn, M.D.	Psychiatrist
51.	Dennis P. Cantwell, M.D.	Psychiatrist
52.	Rhea Paul, Ph.D.	Unknown
53.	Gabrielle A. Carlson, M.D.	Psychiatrist
54.	Judith H. L. Rapoport, M.D.	Psychiatrist

55.	Donald Jay Cohen, M.D.	Psychiatrist and psychoanalyst
56.	Sir Michael Rutter, M.D.	Unknown
57.	Barry Garfinkel, M.D.	Psychiatrist
58.	Fred Volkmar, M.D.	Psychologist and psychiatrist
59.	Rachel Klein, Ph.D.	Unknown
60.	John S. Werry, M.D.	Unknown
61.	James Mitchell, M.D.	Unknown
62.	Paul Garfinkel, M.D.	Psychiatrist
63.	G. Terence Wilson, Ph.D.	Psychologist
64.	Katherine A. Halmi, M.D.	Psychiatrist
65.	Martin B. Keller, M.D., Vice-Chairperson	Psychiatrist
66.	Mark S. Bauer, M.D.	Psychiatrist
67.	David Dunner, M.D.	Psychiatrist
68.	Donald F. Klein, M.D.	Psychiatrist
69.	Howard H. Goldman, M.D., Ph.D.,	Psychiatrist
70.	Alan M. Gruenberg, M.D.	Psychiatrist
71.	Juan Enrique Mezzich, M.D., Ph.D.	Psychiatrist
72.	Stephen Setterberg, M.D.	Psychiatrist
73.	Andrew Edward Skodol II, M.D.	Psychiatrist

74.	John Gunderson, M.D., Chairperson	Psychiatrist
75.	Robert M. A. Hirschfeld, M.D.,	Psychiatrist
76.	Roger Blashfield, Ph.D.	Psychologist
77.	Susan Jean Fiester, M.D.	Psychiatrist
78.	Theodore Millon, Ph.D.	Psychologist
79.	Bruce Pfohl, M.D.	Psychiatrist
80.	Tracie Shea, Ph.D.	Psychologist
81.	Larry Siever, M.D.	Psychiatrist
82.	Jean Endicott, Ph.D.	Psychiatrist
83.	Barbara Parry, M.D.	Psychiatrist
84.	Sally Severino, M.D.	Unknown
85.	Nada Logan Stotland, M.D.	Psychiatrist
86.	C. Robert Cloninger, M.D.,	Psychiatrist
87.	Vice-Chairperson David A. Spiegel, M.D.	Unknown
88.	Jonathan F. Borus, M.D.	Psychiatrist
89.	Jack Denning Burke, Jr., M.D., M.P.H.	Unknown
90.	Joe P. Pagan, M.D.	Unknown
91.	Steven A. King, M.D.	Psychiatrist

92.	Ronald L. Martin, M.D.	Unknown
93.	Katharine Anne Phillips, M.D.	Unknown
94.	Alan Stoudemire, M.D.	Psychiatrist
95.	James J. Strain, M.D.	Psychiatrist
96.	Michael G. Wise, M.D.	Psychiatrist
97.	Samuel Keith, M.D.	Unknown
98.	Kenneth S. Kendler, M.D.	Psychiatrist
99.	John M. Kane, M.D., Vice-Chairperson	Psychiatrist
100.	Thomas McGlashan, M.D.	Psychiatrist
101.	Raul Schiavi, M.D.	Unknown
102.	Leslie Schover, Ph.D.	Psychologist
103.	Charles F. Reynolds III, M.D.,	Psychiatrist
104.	Daniel Buysse, M.D.	Neurologist
105.	Quentin Regestein, M.D.	Psychiatrist
106.	Michael Sateia, M.D.	Psychiatrist
107.	Michael Thorpy, M.D.	Neurologist
108.	Marc Alan Schuckit, M.D., Chairperson	Psychiatrist
109.	John E. Helzer, M.D., Vice-Chairperson	Psychiatrist

110.	Linda B. Cottier, Ph.D.	Unknown
111.	Thomas Crowley, M.D.	Unknown
112.	George E. Woody, M.D.	Psychiatrist
113.	Layton McCurdy, M.D., Chairperson	Psychiatrist
114.	Kenneth Z. Altshuler, M.D. (1987-1992)	Psychiatrist
115.	Thomas F. Anders, M.D. (1988-1994)	Psychiatrist
116.	Susan Jane Blumenthal, M.D. (1990-1993)	Unknown
117.	Leah Joan Dickstein, M.D. (1988-1991)	Psychiatrist
118.	Lewis J.Judd, M.D. (1988-1994)	Unknown
119.	Gerald L. Klerman, M.D. (deceased) (1988-1991)	Psychiatrist
120.	Stuart C. Yudofsky, M.D. (1992-1994)	Physician
121.	Jack D. Blaine, M.D., Consultant (1987-1992)	Unknown
122.	Jerry M. Lewis, M.D., Consultant (1988-1994)	Sociologist
123.	Daniel J. Luchins, M.D., Consultant (1987-1991)	Psychiatrist

124.	Cynthia Pearl Rose, M.D., Consultant (1990-1994)	Psychiatrist
125.	Louis Alan Moench, M.D., Assembly Liaison (1991-1994)	Psychiatrist
126.	Steven K. Dobscha, M.D., Resident Fellow (1990-1992)	Unknown
127.	Mark Zimmerman, M.D., Resident Fellow (1992-1994)	Unknown
128.	Ronald A. Shellow, M.D., Chairperson	Psychiatrist
129.	Harvey Bluestone, M.D.	Psychiatrist
130.	Arthur John Farley, M.D.	Psychiatrist
131.	Carol Ann Bernstein, M.D.	Psychiatrist

APPENDIX E. LIST OF PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROCESS OF THE DSM 5

Number	Name of member	Occupation
1.	David J. Kupfer, M.D.	Psychiatrist
2.	Darrel A. Regier, M.D., M.P.H.	Psychiatrist
3.	William E. Narrow, M.D.,	Psychiatrist
4.	Dan G. Blazer, M.D., Ph.D., M.P.H.	Psychiatrist
5.	Jack D. Burke Jr., M.D., M.P.H.	Unknown
6.	William T. Carpenter Jr., M.D.	Psychologist
7.	F. Xavier Castellanos, M.D.	Neuroscientist
8.	Wilson M. Compton, M.D., M.P.E.	Psychiatrist
9.	Joel E. Dimsdale, M.D.	Unknown
10.	Javier I. Escobar, M.D., M.Sc.	Psychiatrist
11.	Bridget F. Grant, Ph.D., Ph.D. (2009-)	Psychologist
12.	Steven E. Hyman, M.D. (2007-2012)	Psychiatrist
13.	Helena C. Kraemer, Ph.D.	Psychiatrist
14.	Daniel T. Mamah, M.D., M.P.E.	Psychiatrist
15.	James P. McNulty, A.B., Sc.B.	Unknown

16.	Howard B. Moss, M.D. (2007-2009)	Psychiatrist
17.	Charles P. O'Brien, M.D., Ph.D.	Psychiatrist
18.	Roger Peele, M.D.	Psychiatrist
19.	Katharine A. Phillips, M.D.	Unknown
20.	Charles F. Reynolds III, M.D.	Psychiatrist
21.	Maritza Rubio-Stipec, Sc.D.	Unknown
22.	David Shaffer, M.D.	Psychiatrist
23.	Andrew E. Skodol II, M.D.	Psychiatrist
24.	B. Timothy Walsh, M.D.	Psychiatrist
25.	Philip Wang, M.D., Dr.P.H. (2007-2012)	Unknown
26.	William M. Womack, M.D.	Psychiatrist
27.	Kimberly A. Yonkers, M.D.	Psychiatrist
28.	Kenneth J. Zucker, Ph.D.	Psychologist and sexologist
29.	Norman Sartorius, M.D., Ph.D., Consultant	Psychiatrist
30.	Emily A. Kuhl, Ph.D., Senior Science	Psychologist
31.	Diana E. Clarke, Ph.D., M.Sc., Research	Unknown
32.	Lisa H. Greiner, M.S.S.A., DSM-5 Field	Unknown

33.	Eve K. Moscicki, Sc.D., M.P.H.,	Epidemiologist
34.	S. Janet Kuramoto, Ph.D. M.H.S.,	Unknown
35.	Amy Porfiri, M.B.A.	Unknown
36.	Jennifer J. Shupinka	Unknown
37.	Seung-Hee Hong	Unknown
38.	Anne R. Hiller	Unknown
39.	Alison S. Beale	Unknown
40.	Spencer R. Case	Unknown
41.	Joyce C. West, Ph.D., M.P.P.,	Psychiatrist
42.	Farifteh F. Duffy, Ph.D.,	Psychiatrist
43.	Lisa M. Countis,	Unknown
44.	James H. Scully Jr., M.D.	Psychiatrist
45.	Michael B. First, M.D.	Psychiatrist
46.	Paul J. Frick, Ph.D., Text Coordinator	Unknown
47.	Glorisa Canino, Ph.D.	Psychologist
48.	Terrie E. Moffitt, Ph.D..	Psychologist
49.	Joel T. Nigg, Ph.D.	Psychiatrist
50.	Luis Augusto Rohde, M.D., Sc.D.	Psychiatrist
51.	Rosemary Tannock, Ph.D.	Psychologist
52.	Eric A. Taylor, M.B.	Unknown

53.	Richard Todd, Ph.D., M.D. (d. 2008)	Unknown
54.	J. Gavin Andrews, M.D.	Unknown
55.	Susan M. Bögels, Ph.D.	Psychologist and psychotherapist
56.	Matthew J. Friedman, M.D.,	Pharmacologist
57.	Eric Hollander, M.D. (2007-2009)	Psychiatrist
58.	Roberto Lewis-Fernandez, M.D., M.T.S.	Psychiatrist
59.	Robert S. Pynoos, M.D., M.P.H.	Psychiatrist
60.	Scott L. Rauch, M.D.	Psychiatrist
61.	H. Blair Simpson, M.D., Ph.D.	Psychiatrist
62.	David Spiegel, M.D.	Unknown
63.	Dan J. Stein, M.D., Ph.D.	Psychiatrist
64.	Murray B. Stein, M.D.	Psychiatrist
65.	Robert J. Ursano, M.D.	Psychiatrist
66.	Hans-Ulrich Wittchen, Ph.D.	Psychologist and psychotherapist
67.	Michelle G. Craske, Ph.D.	Psychiatrist and psychologist
68.	Ronald E. Dahl, M.D.	Psychiatrist and psychologist
69.	E. Jane Costello, Ph.D. (2007-2009)	Psychology

70.	Regina Smith James, M.D.	Physician
71.	Rachel G. Klein, Ph.D.	Unknown
72.	James F. Leckman, M.D.	Psychiatrist
73.	Ellen Leibenluft, M.D.	Psychiatrist
74.	Judith H. L. Rapoport, M.D.	Psychiatrist
75.	Charles H. Zeanah, M.D.	Psychiatrist
76.	Stephen A. Wonderlich, Ph.D.	Psychiatrist
77.	Marsha D. Marcus, Ph.D.	Psychiatrist and psychologist
78.	Evelyn Attia, M.D.	Psychiatrist
79.	Anne E. Becker, M.D., Ph.D., Sc.M.	Psychiatrist
80.	Rachel Bryant-Waugh, M.D. G.	Psychologist
81.	Richard E. Kreipe, M.D.	Physician
82.	James E. Mitchell, M.D.	Psychologist
83.	Ruth H. Striegel-Moore, Ph.D.	Unknown
84.	Terence Wilson, Ph.D.	Psychologist
85.	Hans W. Hoek, M.D., Ph.D.	Psychiatrist
86.	Barbara E. Wolfe, Ph.D. A.P.R.N.	Psychiatrist
87.	Ellen Frank, Ph.D., Text Coordinator	Unknown
88.	Jules Angst, M.D. (2007-2008)	Psychiatrist
89.	William H. Coryell, M.D.	Psychiatrist

90.	Lori L. Davis, M.D.	Unknown
91.	Raymond J. DePaulo, M.D.	Psychiatrist
92.	Sir David Goldberg, M.D.	Psychiatrist
93.	James S. Jackson, Ph.D.	Psychologist
94.	Kenneth S. Kendler, M.D., Ph.D.	Psychiatrist
95.	Mario Maj, M.D., Ph.D.	Psychiatrist
96.	Husseini K. Manji, M.D. (2007-2008)	Psychiatrist
97.	Michael R. Phillips, M.D.	Psychiatrist
98.	Trisha Suppes, M.D., Ph.D.	Psychiatrist
99.	Carlos A. Zarate, M.D.	Unknown
100.	Maria N. Ward, M.Ed., RHIT, CCS-P	Unknown
101.	Michael B. First, M.D.	Psychiatrist
102.	Katharine A. Phillips, M.D.	Unknown
103.	Daniel S. Pine, M.D.	Unknown
104.	Jan a. Fawcett, M.D.	Psychiatrist
105.	Dilip V. Jeste, M.D. (2007-2011)	Psychiatrist
106.	Ronald C. Petersen, M.D., Ph.D.	Neurologist
107.	Mary Ganguli, M.D., M.P.H.,	Psychiatrist
108.	Deborah Blacker, M.D., Sc.D.	Neuropsychologist

109.	Warachal Faison, M.D. (2007-2008)	Psychiatrist
110.	Igor Grant, M.D.	Psychiatrist
111.	Eric J. Lenze, M.D.	Physician
112.	Jane S. Paulsen, Ph.D.	Psychiatrist
113.	Perminder S. Sachdev, M.D., Ph.D.	Neuropsychiatry
114.	Susan E. Swedo, M.D.	Unknown
115.	Gillian Baird, M.A., M.B., B.Chir.,	Consultant in neurodisability
116.	Edwin H. Cook Jr., M.D.	Psychiatrist
117.	Francesca G. Happé, Ph.D.	Psychology
118.	James C. Harris, M.D.	Psychiatrist
119.	Walter E. Kaufmann, M.D.	Neurology doctor
120.	Bryan H. King, M.D.	Psychiatrist
121.	Catherine E. Lord, Ph.D.	Psychologist
122.	Joseph Piven, M.D.	Psychiatrist and psychologist
123.	Sally J. Rogers, Ph.D.	Psychiatrist
124.	Sarah J. Spence, M.D., Ph.D.	Neurologist
125.	Fred Volkmar, M.D. (2007-2009)	Psychiatrist and psychologist
126.	Amy M. Wetherby, Ph.D.	Unknown
127.	Harry H. Wright, M.D.	Unknown

128.	John M. Oldham, M.D.	Psychiatrist
129.	Robert F. Krueger, Ph.D., Text	Psychologist
130.	Renato D. Alarcon, M.D., M.P.H.	Psychiatrist and psychologist
131.	Carl C. Bell, M.D.	Psychiatrist
132.	Donna S. Bender, Ph.D.	Unknown
133.	Lee Anna Clark, Ph.D.	Psychologist
134.	W. John Livesley, M.D., Ph.D. (2007-2012)	Psychiatrist
135.	Leslie C. Morey, Ph.D.	Psychologist
136.	Larry J. Siever, M.D.	Psychiatrist
137.	Roel Verheul, Ph.D. (2008-2012)	Psychologist
138.	Deanna M. Barch, Ph.D.,	Psychologist
139.	Michael J. Owen, M.D., Ph.D.	Psychiatrist
140.	Juan R. Bustillo, M.D.	Psychiatrist
141.	Wolfgang Gaebel, M.D.	Psychiatrist
142.	Raquel E. Gur, M.D., Ph.D.	Neuropsychiatrist
143.	Stephan H. Heckers, M.D.	Unknown
144.	Dolores Malaspina, M.D., M.S.P.H.	Psychiatrist
145.	Susan K. Schultz, M.D	Psychiatrist
146.	Rajiv Tandon, M.D	Psychiatrist

147.	Ming T. Tsuang, M.D., Ph.D.	Unknown
148.	Jim van Os, M.D.	Psychiatrist
149.	Lori Brotto, Ph.D., Text Coordinator	Psychologist
150.	Irving M. Binik, Ph.D.	Psychologist
151.	Ray M. Blanchard, Ph.D.	Sexologist
152.	Peggy T. Cohen-Kettenis, Ph.D.	Psychologist
153.	Jack Drescher, M.D.	Psychiatrist and psychoanalyst
154.	Cynthia A. Graham, Ph.D.	Psychologist
155.	Martin P. Kafka, M.D.	Psychiatrist
156.	Richard B. Krueger, M.D.	Psychiatrist
157.	Niklas Langström, M.D., Ph.D.	Psychiatrist
158.	Heino F.L. Meyer-Bahlburg, Dr. rer. nat.	Psychologist
159.	Friedemann Pfäfflin, M.D.	Psychiatrist
160.	Robert Taylor Segraves, M.D., Ph.D.	Psychiatrist
161.	Ruth M. O'Hara, Ph.D.,	Unknown
162.	Charles M. Morin, Ph.D.	Psychologist
163.	Allan I. Pack, Ph.D.	Physician
164.	Kathy P. Parker, Ph.D., R.N.	Unknown
165.	Susan Redline, M.D., M.P.H.	Unknown

166.	Dieter Riemann, Ph.D.	Psychologist
167.	Thomas J. Crowley, M.D.	Psychiatrist
168.	James L. Levenson, M.D.,	Psychiatrist
169.	Francis J. Keefe, Ph.D. (2007-2011)	Psychologist
170.	Arthur J. Barsky III, M.D.	Psychiatrist
171.	Francis Creed, M.D.	Psychologist
172.	Michael R. Irwin, M.D.	Unknown
173.	Sing Lee, M.D.	Unknown
174.	Michael Sharpe, M.D.	Psychiatrist
175.	Nancy Frasure-Smith, Ph.D. (2007-2011)	Unknown
176.	Lawson R. Wulsin, M.D.	Psychiatrist
177.	Marc Auriacombe, M.D.	Psychiatrist
178.	Guilherme L. G. Borges, M.D., Dr .Sc.	Unknown
179.	Kathleen K. Bucholz, Ph.D.	Psychiatrist
180.	Alan J. Budney, Ph.D.	Psychiatrist
181.	Deborah S. Hasin, Ph.D.	Psychiatrist
182.	Thomas R. Kosten, M.D. (2007-2008)	Psychiatrist
183.	Walter Ling, M.D.	Psychiatrist

184.	Spero M. Manson, Ph.D. (2007-2008)	Psychiatrist
185.	A. Thomas McLellan, Ph.D. (2007-2008)	Psychiatrist
186.	Nancy M. Petry, Ph.D.	Psychologist
187.	Marc A. Schuckit, M.D.	Psychiatrist
188.	Wim van den Brink, M.D., Ph.D. (2007-2008)	Psychiatrist
189.	Steven E. Hyman, M.D	Unknown
190.	Eric J. Lenze, M.D.	Physician and Psychiatrist
191.	Susan K. Schultz, M.D.	Psychiatrist
192.	Eric A. Taylor, M.B.	Unknown

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000–x24 Schizophrenic reaction, paranoid type

This type of reaction is characterized by autistic, unrealistic thinking, with mental content composed chiefly of delusions of persecution, and/or of grandeur, ideas of reference, and often hallucinations. It is often character-

ized by unpredictable·behavior, with a fairly constant attitude of hostility and aggression. Excessive religiosity may be present with or without delusions of persecution. There may be an expansive delusional system of omnipotence, genius, or special ability. The systematized paranoid hypochondriacal states are included in this group.

000–x28 Schizophrenic reaction, childhood type

Here will be classified those schizophrenic reactions occurring before puberty. The clinical picture may differ from schizophrenic reactions occurring in other age periods because of the immaturity and plasticity of the patient at the time of onset of the reaction. Psychotic reactions in children, manifesting primarily autism, will be classified here. Special symptomatology may be added to the diagnosis as manifestations.

000–x42 Schizoid personality

Inherent traits in such personalities are (1) avoidance of close relations with others, (2) inability to express directly hostility or even ordinary aggressive feelings, and (3) autistic thinking. These qualities result early in coldness, aloofness, emotional detachment, fearfulness, avoidance of competition, and day dreams revolving around the need for omnipotence. As children, they are usually quiet, shy, obedient, sensitive and retiring. At puberty, they frequently become more withdrawn, then manifesting the aggregate of personality traits known as introversion, namely, quietness, seclusiveness, "shut-in-ness," and unsociability, often with eccentricity.

295.8* Schizophrenia, childhood type*

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

301.2 Schizoid personality

This behavior pattern manifests shyness, over-sensitivity, seclusiveness, avoidance of close or competitive relationships, and often eccentricity. Autistic thinking without loss of capacity to recognize reality is common, as is daydreaming and the inability to express hostility and ordinary aggressive feelings. These patients react to disturbing experiences and conflicts with apparent detachment.

PERVASIVE DEVELOPMENTAL DISORDERS

The disorders in this subclass are characterized by *distortions* in the development of multiple basic psychological functions that are involved in the development of social skills and language, such as attention, perception, reality testing, and motor movement.

In the past, children with these disorders have been described by many terms: Atypical Children, Symbiotic Psychotic Children, Childhood Schizophrenia, and others. Since these disorders apparently bear little relationship to the psychotic disorders of adult life, the term "psychosis" has not been used here in the name of this group of conditions. The term Pervasive Developmental Disorder has been selected because it describes most accurately the core clinical disturbance: many basic areas of psychological development are affected at the same time and to a severe degree.

Pervasive Developmental Disorders differ from the Specific Developmental Disorders in two basic ways. First, only a single specific function is affected in each Specific Developmental Disorder whereas in Pervasive Developmental Disorders multiple functions are always affected. Second, in Specific Developmental Disorders the children behave as if they are passing through an earlier normal developmental stage, because the disturbance is a *delay* in development, whereas children with Pervasive Developmental Disorders display severe qualitative abnormalities that are not normal for any stage of development, because the disturbance is a *distortion* in development.

The fifth digit should be used for all of the Pervasive Developmental Disorders to indicate whether the full syndrome is currently present (code=0) or

whether the full syndrome occurred previously, but now the individual has only residual symptoms of the disorder, such as blunted or inappropriate affect, social withdrawal, or eccentric behavior (code=1).

The ICD-9 category Disintegrative Psychosis is not included in this classification since the disorder apparently is a nonspecific Organic Brain Syndrome that consists of a Dementia plus other behavioral abnormalities, such as rapid loss of language and social skills. Such cases should be diagnosed as Dementia.

299.0x   Infantile Autism

The essential features are a lack of responsiveness to other people (autism), gross impairment in communicative skills, and bizarre responses to various aspects of the environment, all developing within the first 30 months of age. Infantile Autism may be associated with known organic conditions, such as maternal rubella or phenylketonuria. In such cases the behavioral syndrome Infantile Autism should be recorded on Axis I, and the physical disorder, on Axis III.

The relationship of this category to Schizophrenia is controversial. Some believe that Infantile Autism is the earliest form of Schizophrenia, whereas others believe that they are two distinct conditions. However, there is apparently no increased incidence of Schizophrenia in the families of children with Infantile Autism, which supports the hypothesis that the two disorders are unrelated.

The failure to develop interpersonal relationships is characterized by a lack of responsiveness to and a lack of interest in people, with a concomitant failure to develop normal attachment behavior. In infancy these deficiencies may be manifested by a failure to cuddle, by lack of eye contact and facial responsiveness, and by indifference or aversion to affection and physical contact. As a result, parents often suspect that the child is deaf. Adults may be treated as interchangeable, or the child may cling mechanically to a specific individual.

In early childhood there is invariably failure to develop cooperative play and friendships; but, as the children grow older, greater awareness of and attachment to parents and other familiar adults often develop. Some of the least handicapped may eventually reach a stage where they can become passively involved in other children's games or physical play such as running with other children. This apparent sociability is superficial, however, and can be a source of diagnostic confusion if mistaken for social relatedness when the diagnosis is made retrospectively.

Impairment in communication includes both verbal and nonverbal skills. Language may be totally absent. When it develops, it is often characterized by: immature grammatical structure, delayed or immediate echolalia, pronominal reversals (use of the pronoun "you" when "I" is the intended meaning), nominal aphasia (inability to name objects), inability to use abstract terms, metaphorical language (utterances whose usage is idiosyncratic and whose meaning is not clear), and abnormal speech melody, such as questionlike rises at ends of statements. Appropriate nonverbal communication, such as socially appropriate facial expressions and gestures, is often lacking.

Bizarre responses to the environment may take several forms. There may be resistance and even catastrophic reactions to minor changes in the environment,

e.g., the child may scream when his or her place at the dinner table is changed. There is often attachment to odd objects, e.g., the child insists on always carrying a string or rubber band. Ritualistic behavior may involve motor acts, such as hand clapping or repetitive peculiar hand movements, or insisting that fixed sequences of events precede going to bed. The fascination with movement may be exemplified by staring at fans, and the child may display inordinate interest in spinning objects. Music of all kinds may hold a special interest for the child. The child may be extremely interested in buttons, parts of the body, playing with water, or peculiar rote topics such as train schedules or historical dates. Tasks involving long-term memory, for example, recall of the exact words of songs heard years before, may be performed remarkably well.

Associated features. Mood may be labile; crying may be unexplained or inconsolable; there may be giggling or laughing without identifiable cause. There is often underresponsiveness or overresponsiveness to sensory stimuli, such as light, pain, or sound. Real dangers, such as moving vehicles and heights, may not be appreciated. Peculiar nervous habits, such as hair pulling or biting parts of the body, are sometimes present. Rocking or other rhythmic body movements also occur.

About 40% of children with the disorder have an IQ below 50; only 30% have an IQ of 70 or more. These children show extreme variability in intellectual functioning; they are often untestable on verbal tasks, and when testable, performance is worst on tasks demanding symbolic or abstract thought and sequential logic. However, tasks requiring manipulative or visual-spatial skills or immediate memory may be performed well.

Age at onset. By definition, the age at onset is always before 30 months. However, it may be difficult to establish age at onset retrospectively unless those who cared for the child during the early years are able to give accurate information about language development, sociability, and play. Parents of only children may be unaware of the problems until the child is observed with other children. The parents may then date the age at onset from that point, although a careful history will usually reveal that the abnormalities were present earlier.

Course. The disorder is chronic. Some of these children eventually are able to lead independent lives, with only minimal signs of the essential features of the disorder; but often the social awkwardness and ineptness persist (Residual State). Overall, one child in six makes an adequate social adjustment and is able to do some kind of regular work by adulthood; another one in six makes only a fair adjustment; and two-thirds remain severely handicapped and unable to lead independent lives. Factors related to long-term prognosis include IQ and development of language skills.

Impairment. The disorder is extremely incapacitating, and special educational facilities are almost always necessary.

Complications. The major complication is the development of epileptic sei-

zures secondary to an underlying physical disorder; about 25% or more of cases develop seizures in adolescence or early adult life. Most of the children with an IQ below 50 develop seizures, but only very few of those with normal intelligence do so.

Prevalence. The disorder is very rare (2-4 cases per 10,000). It is apparently more common in the upper socioeconomic classes, but the reason for this is not clear.

Sex ratio. The disorder is about three times more common in boys than in girls.

Predisposing factors. Maternal rubella (especially when associated with infantile deafness or blindness), phenylketonuria, encephalitis, meningitis, and tuberous sclerosis are among the predisposing factors. In the past, certain familial interpersonal factors were thought to predispose to the development of this syndrome, but recent studies do not support this view.

Familial pattern. The prevalence of Infantile Autism is 50 times as great in siblings of children with the disorder than in the general population.

Differential diagnosis. In **Mental Retardation** there are often behavioral abnormalities similar to those seen in Infantile Autism. However, the full syndrome of Infantile Autism is rarely present. When both disorders are present, both diagnoses should be made. In **Schizophrenia occurring in childhood** there are oddities of behavior; but typically there are hallucinations, delusions, and loosening of associations or incoherence, which are not present in Infantile Autism. In **Childhood Onset Pervasive Developmental Disorder**, the age at onset is later than in Infantile Autism and the full syndrome of Infantile Autism is not present. In children with **hearing impairments** there will be a history of responding consistently only to very loud sounds, whereas in Infantile Autism the response to sounds is inconsistent. An audiogram can rule out the possibility of hearing impairment. In **Developmental Language Disorder, Receptive Type,** the children generally make eye contact and will often try to communicate appropriately by means of gestures, whereas in Infantile Autism there is a pervasive lack of responsiveness.

Diagnostic criteria for Infantile Autism

A. Onset before 30 months of age.

B. Pervasive lack of responsiveness to other people (autism).

C. Gross deficits in language development.

D. If speech is present, peculiar speech patterns such as immediate and delayed echolalia, metaphorical language, pronominal reversal.

E. Bizarre responses to various aspects of the environment, e.g., resistance to change, peculiar interest in or attachments to animate or inanimate objects.

F. Absence of delusions, hallucinations, loosening of associations, and incoherence as in Schizophrenia.

DSM IV

nervous system). If such conditions are present, they should be noted on Axis III. Although terms like "psychosis" and "childhood schizophrenia" were once used to refer to individuals with these conditions, there is considerable evidence to suggest that the Pervasive Developmental Disorders are distinct from Schizophrenia (however, an individual with Pervasive Developmental Disorder may occasionally later develop Schizophrenia).

299.00 Autistic Disorder

Diagnostic Features

The essential features of Autistic Disorder are the presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests. Manifestations of the disorder vary greatly depending on the developmental level and chronological age of the individual. Autistic Disorder is sometimes referred to as *early infantile autism, childhood autism,* or *Kanner's autism.*

The impairment in reciprocal social interaction is gross and sustained. There may be marked impairment in the use of multiple nonverbal behaviors (e.g., eye-to-eye gaze, facial expression, body postures and gestures) to regulate social interaction and communication (Criterion A1a). There may be failure to develop peer relationships appropriate to developmental level (Criterion A1b) that may take different forms at different ages. Younger individuals may have little or no interest in establishing friendships. Older individuals may have an interest in friendship but lack understanding of the conventions of social interaction. There may be a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., not showing, bringing, or pointing out objects they find interesting) (Criterion A1c). Lack of social or emotional reciprocity may be present (e.g., not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids) (Criterion A1d). Often an individual's awareness of others is markedly impaired. Individuals with this disorder may be oblivious to other children (including siblings), may have no concept of the needs of others, or may not notice another person's distress.

The impairment in communication is also marked and sustained and affects both verbal and nonverbal skills. There may be delay in, or total lack of, the development of spoken language (Criterion A2a). In individuals who do speak, there may be marked impairment in the ability to initiate or sustain a conversation with others (Criterion A2b), or a stereotyped and repetitive use of language or idiosyncratic language (Criterion A2c). There may also be a lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level (Criterion A2d). When speech does develop, the pitch, intonation, rate, rhythm, or stress may be abnormal (e.g., tone of voice may be monotonous or contain questionlike rises at ends of statements). Grammatical structures are often immature and include stereotyped and repetitive use of language (e.g., repetition of words or phrases regardless of meaning; repeating jingles or commercials) or metaphorical language (i.e., language that can only be understood clearly by those familiar with the individual's communication style). A disturbance in the comprehension of language may be evidenced by an inability to understand simple questions, directions, or jokes. Imaginative play is often absent or markedly impaired.

These individuals also tend not to engage in the simple imitation games or routines of infancy or early childhood or do so only out of context or in a mechanical way.

Individuals with Autistic Disorder have restricted, repetitive, and stereotyped patterns of behavior, interests, and activities. There may be an encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus (Criterion A3a); an apparently inflexible adherence to specific, nonfunctional routines or rituals (Criterion A3b); stereotyped and repetitive motor mannerisms (Criterion A3c); or a persistent preoccupation with parts of objects (Criterion A3d). Individuals with Autistic Disorder display a markedly restricted range of interests and are often preoccupied with one narrow interest (e.g., with amassing facts about meteorology or baseball statistics). They may line up an exact number of play things in the same manner over and over again or repetitively mimic the actions of a television actor. They may insist on sameness and show resistance to or distress over trivial changes (e.g., a younger child may have a catastrophic reaction to a minor change in the environment such as a new set of curtains or a change in place at the dinner table). There is often an interest in nonfunctional routines or rituals or an unreasonable insistence on following routines (e.g., taking exactly the same route to school every day). Stereotyped body movements include the hands (clapping, finger flicking) or whole body (rocking, dipping, and swaying). Abnormalities of posture (e.g., walking on tiptoe, odd hand movements and body postures) may be present. These individuals show a persistent preoccupation with parts of objects (buttons, parts of the body). There may also be a fascination with movement (e.g., the spinning wheels of toys, the opening and closing of doors, an electric fan or other rapidly revolving object). The person may be highly attached to some inanimate object (e.g., a piece of string or a rubber band).

The disturbance must be manifest by delays or abnormal functioning in at least one of the following areas prior to age 3 years: social interaction, language as used in social communication, or symbolic or imaginative play (Criterion B). There is typically no period of unequivocally normal development, although 1 or 2 years of relatively normal development has been reported in some instances. In a minority of cases, parents report regression in language development, generally manifest as the cessation of speech after a child has acquired from 5 to 10 words. By definition, if there is a period of normal development, it cannot extend past age 3 years. The disturbance must not be better accounted for by Rett's Disorder or Childhood Disintegrative Disorder (Criterion C).

Associated Features and Disorders

Associated descriptive features and mental disorders.   In most cases, there is an associated diagnosis of Mental Retardation, commonly in the moderate range (IQ 35–50). Approximately 75% of children with Autistic Disorder function at a retarded level. There may be abnormalities in the development of cognitive skills. The profile of cognitive skills is usually uneven, regardless of the general level of intelligence (e.g., a 4½-year-old girl with Autistic Disorder may be able to read, i.e., hyperlexia). In many higher-functioning children with Autistic Disorder, the level of receptive language (i.e., language comprehension) is below that of expressive language (e.g., vocabulary). Individuals with Autistic Disorder may have a range of behavioral symptoms, including hyperactivity, short attention span, impulsivity, aggressiveness, self-injurious behaviors, and, particularly in young children, temper tantrums. There may be odd responses to sensory stimuli

(e.g., a high threshold for pain, oversensitivity to sounds or being touched, exaggerated reactions to light or odors, fascination with certain stimuli). There may be abnormalities in eating (e.g., limiting diet to a few foods, Pica) or sleeping (e.g., recurrent awakening at night with rocking). Abnormalities of mood or affect (e.g., giggling or weeping for no apparent reason, an apparent absence of emotional reaction) may be present. There may be a lack of fear in response to real dangers, and excessive fearfulness in response to harmless objects. A variety of self-injurious behaviors may be present (e.g., head banging or finger, hand, or wrist biting). In adolescence or early adult life, individuals with Autistic Disorder who have the intellectual capacity for insight may become depressed in response to the realization of their serious impairment.

Associated laboratory findings.   When Autistic Disorder is associated with a general medical condition, laboratory findings consistent with the general medical condition will be observed. There have been reports of group differences in measures of serotonergic activity, but these are not diagnostic for Autistic Disorder. Imaging studies may be abnormal in some cases, but no specific pattern has been clearly identified. EEG abnormalities are common even in the absence of seizure disorders.

Associated physical examination findings and general medical conditions.
Various nonspecific neurological symptoms or signs may be noted (e.g., primitive reflexes, delayed development of hand dominance) in Autistic Disorder. The condition is sometimes observed in association with a neurological or other general medical condition (e.g., encephalitis, phenylketonuria, tuberous sclerosis, fragile X syndrome, anoxia during birth, maternal rubella). Seizures may develop (particularly in adolescence) in as many as 25% of cases. When other general medical conditions are present, they should be noted on Axis III.

Specific Age and Gender Features

The nature of the impairment in social interaction may change over time in Autistic Disorder and may vary depending on the developmental level of the individual. In infants, there may be a failure to cuddle; an indifference or aversion to affection or physical contact; a lack of eye contact, facial responsiveness, or socially directed smiles; and a failure to respond to their parents' voices. As a result, parents may be concerned initially that the child is deaf. Young children with this disorder may treat adults as interchangeable or may cling mechanically to a specific person. Over the course of development, the child may become more willing to be passively engaged in social interaction and may even become more interested in social interaction. However, even in such instances, the child tends to treat other people in unusual ways (e.g., expecting other people to answer ritualized questions in specific ways, having little sense of other people's boundaries, and being inappropriately intrusive in social interaction). In older individuals, tasks involving long-term memory (e.g., train timetables, historical dates, chemical formulas, or recall of the exact words of songs heard years before) may be excellent, but the information tends to be repeated over and over again, regardless of the appropriateness of the information to the social context. Rates of the disorder are four to five times higher in males than in females. Females with the disorder are more likely, however, to exhibit more severe Mental Retardation.

Prevalence

Epidemiological studies suggest rates of Autistic Disorder of 2–5 cases per 10,000 individuals.

Course

By definition, the onset of Autistic Disorder is prior to age 3 years. In some instances, parents will report that they have been worried about the child since birth or shortly afterward because of the child's lack of interest in social interaction. Manifestations of the disorder in infancy are more subtle and difficult to define than those seen after age 2 years. In a minority of cases, the child may be reported to have developed normally for the first year (or even 2 years) of life. Autistic Disorder follows a continuous course. In school-age children and adolescents, developmental gains in some areas are common (e.g., increased interest in social functioning as the child reaches school age). Some individuals deteriorate behaviorally during adolescence, whereas others improve. Language skills (e.g., presence of communicative speech) and overall intellectual level are the strongest factors related to ultimate prognosis. Available follow-up studies suggest that only a small percentage of individuals with the disorder go on as adults to live and work independently. In about one-third of cases, some degree of partial independence is possible. The highest functioning adults with Autistic Disorder typically continue to exhibit problems in social interaction and communication along with markedly restricted interests and activities.

Familial Pattern

There is an increased risk of Autistic Disorder among siblings of individuals with the disorder.

Differential Diagnosis

Periods of developmental regression may be observed in normal development, but these are neither as severe or as prolonged as in Autistic Disorder. Autistic Disorder must be differentiated from **other Pervasive Developmental Disorders. Rett's Disorder** differs from Autistic Disorder in its characteristic sex ratio and pattern of deficits. Rett's Disorder has been diagnosed only in females, whereas Autistic Disorder occurs much more frequently in males. In Rett's Disorder, there is a characteristic pattern of head growth deceleration, loss of previously acquired purposeful hand skills, and the appearance of poorly coordinated gait or trunk movements. Particularly during the preschool years, individuals with Rett's Disorder may exhibit difficulties in social interaction similar to those observed in Autistic Disorder, but these tend to be transient. Autistic Disorder differs from **Childhood Disintegrative Disorder,** which has a distinctive pattern of developmental regression following at least 2 years of normal development. In Autistic Disorder, developmental abnormalities are usually noted within the first year of life. When information on early development is unavailable or when it is not possible to document the required period of normal development, the diagnosis of Autistic Disorder should be made. **Asperger's Disorder** can be distinguished from Autistic Disorder by the lack of delay in language development. Asperger's Disorder is not diagnosed if criteria are met for Autistic Disorder.

Schizophrenia with childhood onset usually develops after years of normal, or near normal, development. An additional diagnosis of Schizophrenia can be made if an individual with Autistic Disorder develops the characteristic features of Schizophrenia (see p. 274) with active-phase symptoms of prominent delusions or hallucinations that last for at least 1 month. In **Selective Mutism,** the child usually exhibits appropriate communication skills in certain contexts and does not have the severe impairment in social interaction and the restricted patterns of behavior associated with Autistic Disorder. In **Expressive Language Disorder** and **Mixed Receptive-Expressive Language Disorder,** there is a language impairment, but it is not associated with the presence of a qualitative impairment in social interaction and restricted, repetitive, and stereotyped patterns of behavior. It is sometimes difficult to determine whether an additional diagnosis of Autistic Disorder is warranted in an individual with **Mental Retardation,** especially if the Mental Retardation is Severe or Profound. An additional diagnosis of Autistic Disorder is reserved for those situations in which there are qualitative deficits in social and communicative skills and the specific behaviors characteristic of Autistic Disorder are present. Motor stereotypies are characteristic of Autistic Disorder; an additional diagnosis of **Stereotypic Movement Disorder** is not given when these are better accounted for as part of the presentation of Autistic Disorder.

■ **Diagnostic criteria for 299.00 Autistic Disorder**

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

(1) qualitative impairment in social interaction, as manifested by at least two of the following:

    (a) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction

    (b) failure to develop peer relationships appropriate to developmental level

    (c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest)

    (d) lack of social or emotional reciprocity

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

    (a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)

    (b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others

    (c) stereotyped and repetitive use of language or idiosyncratic language

    (d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(continued)

☐ **Diagnostic criteria for 299.00 Autistic Disorder** (*continued*)

    (3)   restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:

        (a)   encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus

        (b)   apparently inflexible adherence to specific, nonfunctional routines or rituals

        (c)   stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)

        (d)   persistent preoccupation with parts of objects

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

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

DSM 5

Autism Spectrum Disorder

Autism Spectrum Disorder

Diagnostic Criteria	299.00 (F84.0)

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (seeTable 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).

3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).

4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity:

Severity is based on social communication impairments and restricted, repetitive patterns of behavior (see Table 2).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:

With or without accompanying intellectual impairment

With or without accompanying language impairment

Associated with a known medical or genetic condition or environmental factor (**Coding note:** Use additional code to identify the associated medical or genetic condition.)

Associated with another neurodevelopmental, mental, or behavioral disorder (**Coding note:** Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioral disorder[s].)

With catatonia (refer to the criteria for catatonia associated with another mental disorder, pp. 119–120, for definition) (**Coding note:** Use additional code 293.89 [F06.1] catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

Recording Procedures

For autism spectrum disorder that is associated with a known medical or genetic condition or environmental factor, or with another neurodevelopmental, mental, or behavioral disorder, record autism spectrum disorder associated with (name of condition, disorder, or factor) (e.g., autism spectrum disorder associated with Rett syndrome). Severity should be recorded as level of support needed for each of the two psychopathological domains in Table 2 (e.g., "requiring very substantial support for deficits in social communication and requiring substantial support for restricted, repetitive behaviors"). Specification of "with accompanying intellectual impairment" or "without accompanying intellectual impairment" should be recorded next. Language impairment specification should be recorded thereafter. If there is accompanying language impairment, the current level of verbal functioning should be recorded (e.g., "with accompanying language impairment—no intelligible speech" or "with accompanying language impairment—phrase speech"). If catatonia is present, record separately "catatonia associated with autism spectrum disorder."

Specifiers

The severity specifiers (see Table 2) may be used to describe succinctly the current symptomatology (which might fall below level 1), with the recognition that severity may vary by context and fluctuate over time. Severity of social communication difficulties and restricted, repetitive behaviors should be separately rated. The descriptive severity categories should not be used to determine eligibility for and provision of services; these can only be developed at an individual level and through discussion of personal priorities and targets.

Regarding the specifier "with or without accompanying intellectual impairment," understanding the (often uneven) intellectual profile of a child or adult with autism spectrum disorder is necessary for interpreting diagnostic features. Separate estimates of verbal and nonverbal skill are necessary (e.g., using untimed nonverbal tests to assess potential strengths in individuals with limited language).

TABLE 2 Severity levels for autism spectrum disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 "Requiring very substantial support"	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action.
Level 2 "Requiring substantial support"	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.
Level 1 "Requiring support"	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence.

To use the specifier "with or without accompanying language impairment," the current level of verbal functioning should be assessed and described. Examples of the specific descriptions for "with accompanying language impairment" might include no intelligible speech (nonverbal), single words only, or phrase speech. Language level in individuals "without accompanying language impairment" might be further described by speaks in full sentences or has fluent speech. Since receptive language may lag behind expressive language development in autism spectrum disorder, receptive and expressive language skills should be considered separately.

The specifier "associated with a known medical or genetic condition or environmental factor" should be used when the individual has a known genetic disorder (e.g., Rett syndrome, Fragile X syndrome, Down syndrome), a medical disorder (e.g. epilepsy), or a history of environmental exposure (e.g., valproate, fetal alcohol syndrome, very low birth weight).

Additional neurodevelopmental, mental or behavioral conditions should also be noted (e.g., attention-deficit/hyperactivity disorder; developmental coordination disorder; disruptive behavior, impulse-control, or conduct disorders; anxiety, depressive, or bipolar disorders; tics or Tourette's disorder; self-injury; feeding, elimination, or sleep disorders).

Diagnostic Features

The essential features of autism spectrum disorder are persistent impairment in reciprocal social communication and social interaction (Criterion A), and restricted, repetitive patterns of behavior, interests, or activities (Criterion B). These symptoms are present from early childhood and limit or impair everyday functioning (Criteria C and D). The stage at which functional impairment becomes obvious will vary according to characteristics of the individual and his or her environment. Core diagnostic features are evident in the developmental period, but intervention, compensation, and current supports may mask difficulties in at least some contexts. Manifestations of the disorder also vary greatly depending on the severity of the autistic condition, developmental level, and chronological age; hence, the term *spectrum*. Autism spectrum disorder encompasses disorders previously referred to as early infantile autism, childhood autism, Kanner's autism, high-functioning autism, atypical autism, pervasive developmental disorder not otherwise specified, childhood disintegrative disorder, and Asperger's disorder.

The impairments in communication and social interaction specified in Criterion A are pervasive and sustained. Diagnoses are most valid and reliable when based on multiple sources of information, including clinician's observations, caregiver history, and, when possible, self-report. Verbal and nonverbal deficits in social communication have varying manifestations, depending on the individual's age, intellectual level, and language ability, as well as other factors such as treatment history and current support. Many individuals have language deficits, ranging from complete lack of speech through language delays, poor comprehension of speech, echoed speech, or stilted and overly literal language. Even when formal language skills (e.g., vocabulary, grammar) are intact, the use of language for reciprocal social communication is impaired in autism spectrum disorder.

Deficits in social-emotional reciprocity (i.e., the ability to engage with others and share thoughts and feelings) are clearly evident in young children with the disorder, who may show little or no initiation of social interaction and no sharing of emotions, along with reduced or absent imitation of others' behavior. What language exists is often one-sided, lacking in social reciprocity, and used to request or label rather than to comment, share feelings, or converse. In adults without intellectual disabilities or language delays, deficits in social-emotional reciprocity may be most apparent in difficulties processing and responding to complex social cues (e.g., when and how to join a conversation, what not to say). Adults who have developed compensation strategies for some social challenges still struggle in novel or unsupported situations and suffer from the effort and anxiety of consciously calculating what is socially intuitive for most individuals.

Deficits in nonverbal communicative behaviors used for social interaction are manifested by absent, reduced, or atypical use of eye contact (relative to cultural norms), gestures, facial expressions, body orientation, or speech intonation. An early feature of autism spectrum disorder is impaired joint attention as manifested by a lack of pointing, showing, or bringing objects to share interest with others, or failure to follow someone's pointing or eye gaze. Individuals may learn a few functional gestures, but their repertoire is smaller than that of others, and they often fail to use expressive gestures spontaneously in communication. Among adults with fluent language, the difficulty in coordinating nonverbal communication with speech may give the impression of odd, wooden, or exaggerated "body language" during interactions. Impairment may be relatively subtle within individual modes (e.g., someone may have relatively good eye contact when speaking) but noticeable in poor integration of eye contact, gesture, body posture, prosody, and facial expression for social communication.

Deficits in developing, maintaining, and understanding relationships should be judged against norms for age, gender, and culture. There may be absent, reduced, or atypical social interest, manifested by rejection of others, passivity, or inappropriate approaches that seem aggressive or disruptive. These difficulties are particularly evident in young children, in whom there is often a lack of shared social play and imagination (e.g., age-appropriate flexible pretend play) and, later, insistence on playing by very fixed rules. Older individuals may struggle to understand what behavior is considered appropriate in one situation but not another (e.g., casual behavior during a job interview), or the different ways that language may be used to communicate (e.g., irony, white lies). There may be an apparent preference for solitary activities or for interacting with much younger or older people. Frequently, there is a desire to establish friendships without a complete or realistic idea of what friendship entails (e.g., one-sided friendships or friendships based solely on shared special interests). Relationships with siblings, co-workers, and caregivers are also important to consider (in terms of reciprocity).

Autism spectrum disorder is also defined by restricted, repetitive patterns of behavior, interests, or activities (as specified in Criterion B), which show a range of manifestations according to age and ability, intervention, and current supports. Stereotyped or repetitive behaviors include simple motor stereotypies (e.g., hand flapping, finger flicking), repetitive use of objects (e.g., spinning coins, lining up toys), and repetitive speech (e.g., echolalia, the delayed or immediate parroting of heard words; use of "you" when referring to self; stereotyped use of words, phrases, or prosodic patterns). Excessive adherence to routines and restricted patterns of behavior may be manifest in resistance to change (e.g., distress at apparently small changes, such as in packaging of a favorite food; insistence on adherence to rules; rigidity of thinking) or ritualized patterns of verbal or nonverbal behavior (e.g., repetitive questioning, pacing a perimeter). Highly restricted, fixated interests in autism spectrum disorder tend to be abnormal in intensity or focus (e.g., a toddler strongly attached to a pan; a child preoccupied with vacuum cleaners; an adult spending hours writing out timetables). Some fascinations and routines may relate to apparent hyper- or hyporeactivity to sensory input, manifested through extreme responses to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects, and sometimes apparent indifference to pain, heat, or cold. Extreme reaction to or rituals involving taste, smell, texture, or appearance of food or excessive food restrictions are common and may be a presenting feature of autism spectrum disorder.

Many adults with autism spectrum disorder without intellectual or language disabilities learn to suppress repetitive behavior in public. Special interests may be a source of pleasure and motivation and provide avenues for education and employment later in life. Diagnostic criteria may be met when restricted, repetitive patterns of behavior, interests, or activities were clearly present during childhood or at some time in the past, even if symptoms are no longer present.

Criterion D requires that the features must cause clinically significant impairment in social, occupational, or other important areas of current functioning. Criterion E specifies that the social communication deficits, although sometimes accompanied by intellectual disability (intellectual developmental disorder), are not in line with the individual's developmental level; impairments exceed difficulties expected on the basis of developmental level.

Standardized behavioral diagnostic instruments with good psychometric properties, including caregiver interviews, questionnaires and clinician observation measures, are available and can improve reliability of diagnosis over time and across clinicians.

Associated Features Supporting Diagnosis

Many individuals with autism spectrum disorder also have intellectual impairment and/or language impairment (e.g., slow to talk, language comprehension behind production). Even those with average or high intelligence have an uneven profile of abilities. The gap between intellectual and adaptive functional skills is often large. Motor deficits are often present, including odd gait, clumsiness, and other abnormal motor signs (e.g., walking on tiptoes). Self-injury (e.g., head banging, biting the wrist) may occur, and disruptive/challenging behaviors are more common in children and adolescents with autism spectrum disorder than other disorders, including intellectual disability. Adolescents and adults with autism spectrum disorder are prone to anxiety and depression. Some individuals develop catatonic-like motor behavior (slowing and "freezing" mid-action), but these are typically not of the magnitude of a catatonic episode. However, it is possible for individuals with autism spectrum disorder to experience a marked deterioration in motor symptoms and display a full catatonic episode with symptoms such as mutism, posturing, grimacing and waxy flexibility. The risk period for comorbid catatonia appears to be greatest in the adolescent years.

Prevalence

In recent years, reported frequencies for autism spectrum disorder across U.S. and non-U.S. countries have approached 1% of the population, with similar estimates in child and adult samples. It remains unclear whether higher rates reflect an expansion of the diagnostic criteria of DSM-IV to include subthreshold cases, increased awareness, differences in study methodology, or a true increase in the frequency of autism spectrum disorder.

Development and Course

The age and pattern of onset also should be noted for autism spectrum disorder. Symptoms are typically recognized during the second year of life (12–24 months of age) but may be seen earlier than 12 months if developmental delays are severe, or noted later than 24 months if symptoms are more subtle. The pattern of onset description might include information about early developmental delays or any losses of social or language skills. In cases where skills have been lost, parents or caregivers may give a history of a gradual or relatively rapid deterioration in social behaviors or language skills. Typically, this would occur between 12 and 24 months of age and is distinguished from the rare instances of developmental regression occurring after at least 2 years of normal development (previously described as childhood disintegrative disorder).

The behavioral features of autism spectrum disorder first become evident in early childhood, with some cases presenting a lack of interest in social interaction in the first year of life. Some children with autism spectrum disorder experience developmental plateaus or regression, with a gradual or relatively rapid deterioration in social behaviors or use of language, often during the first 2 years of life. Such losses are rare in other disorders and may be a useful "red flag" for autism spectrum disorder. Much more unusual and warranting more extensive medical investigation are losses of skills beyond social communication (e.g., loss of self-care, toileting, motor skills) or those occurring after the

second birthday (see also Rett syndrome in the section "Differential Diagnosis" for this disorder).

First symptoms of autism spectrum disorder frequently involve delayed language development, often accompanied by lack of social interest or unusual social interactions (e.g., pulling individuals by the hand without any attempt to look at them), odd play patterns (e.g., carrying toys around but never playing with them), and unusual communication patterns (e.g., knowing the alphabet but not responding to own name). Deafness may be suspected but is typically ruled out. During the second year, odd and repetitive behaviors and the absence of typical play become more apparent. Since many typically developing young children have strong preferences and enjoy repetition (e.g., eating the same foods, watching the same video multiple times), distinguishing restricted and repetitive behaviors that are diagnostic of autism spectrum disorder can be difficult in preschoolers. The clinical distinction is based on the type, frequency, and intensity of the behavior (e.g., a child who daily lines up objects for hours and is very distressed if any item is moved).

Autism spectrum disorder is not a degenerative disorder, and it is typical for learning and compensation to continue throughout life. Symptoms are often most marked in early childhood and early school years, with developmental gains typical in later childhood in at least some areas (e.g., increased interest in social interaction). A small proportion of individuals deteriorate behaviorally during adolescence, whereas most others improve. Only a minority of individuals with autism spectrum disorder live and work independently in adulthood; those who do tend to have superior language and intellectual abilities and are able to find a niche that matches their special interests and skills. In general, individuals with lower levels of impairment may be better able to function independently. However, even these individuals may remain socially naive and vulnerable, have difficulties organizing practical demands without aid, and are prone to anxiety and depression. Many adults report using compensation strategies and coping mechanisms to mask their difficulties in public but suffer from the stress and effort of maintaining a socially acceptable facade. Scarcely anything is known about old age in autism spectrum disorder.

Some individuals come for first diagnosis in adulthood, perhaps prompted by the diagnosis of autism in a child in the family or a breakdown of relations at work or home. Obtaining detailed developmental history in such cases may be difficult, and it is important to consider self-reported difficulties. Where clinical observation suggests criteria are currently met, autism spectrum disorder may be diagnosed, provided there is no evidence of good social and communication skills in childhood. For example, the report (by parents or another relative) that the individual had ordinary and sustained reciprocal friendships and good nonverbal communication skills throughout childhood would rule out a diagnosis of autism spectrum disorder; however, the absence of developmental information in itself should not do so.

Manifestations of the social and communication impairments and restricted/repetitive behaviors that define autism spectrum disorder are clear in the developmental period. In later life, intervention or compensation, as well as current supports, may mask these difficulties in at least some contexts. However, symptoms remain sufficient to cause current impairment in social, occupational, or other important areas of functioning.

Risk and Prognostic Factors

The best established prognostic factors for individual outcome within autism spectrum disorder are presence or absence of associated intellectual disability and language impairment (e.g., functional language by age 5 years is a good prognostic sign) and additional mental health problems. Epilepsy, as a comorbid diagnosis, is associated with greater intellectual disability and lower verbal ability.

Environmental.   A variety of nonspecific risk factors, such as advanced parental age, low birth weight, or fetal exposure to valproate, may contribute to risk of autism spectrum disorder.

Genetic and physiological. Heritability estimates for autism spectrum disorder have ranged from 37% to higher than 90%, based on twin concordance rates. Currently, as many as 15% of cases of autism spectrum disorder appear to be associated with a known genetic mutation, with different de novo copy number variants or de novo mutations in specific genes associated with the disorder in different families. However, even when an autism spectrum disorder is associated with a known genetic mutation, it does not appear to be fully penetrant. Risk for the remainder of cases appears to be polygenic, with perhaps hundreds of genetic loci making relatively small contributions.

Culture-Related Diagnostic Issues

Cultural differences will exist in norms for social interaction, nonverbal communication, and relationships, but individuals with autism spectrum disorder are markedly impaired against the norms for their cultural context. Cultural and socioeconomic factors may affect age at recognition or diagnosis; for example, in the United States, late or underdiagnosis of autism spectrum disorder among African American children may occur.

Gender-Related Diagnostic Issues

Autism spectrum disorder is diagnosed four times more often in males than in females. In clinic samples, females tend to be more likely to show accompanying intellectual disability, suggesting that girls without accompanying intellectual impairments or language delays may go unrecognized, perhaps because of subtler manifestation of social and communication difficulties.

Functional Consequences of Autism Spectrum Disorder

In young children with autism spectrum disorder, lack of social and communication abilities may hamper learning, especially learning through social interaction or in settings with peers. In the home, insistence on routines and aversion to change, as well as sensory sensitivities, may interfere with eating and sleeping and make routine care (e.g., haircuts, dental work) extremely difficult. Adaptive skills are typically below measured IQ. Extreme difficulties in planning, organization, and coping with change negatively impact academic achievement, even for students with above-average intelligence. During adulthood, these individuals may have difficulties establishing independence because of continued rigidity and difficulty with novelty.

Many individuals with autism spectrum disorder, even without intellectual disability, have poor adult psychosocial functioning as indexed by measures such as independent living and gainful employment. Functional consequences in old age are unknown, but social isolation and communication problems (e.g., reduced help-seeking) are likely to have consequences for health in older adulthood.

Differential Diagnosis

Rett syndrome. Disruption of social interaction may be observed during the regressive phase of Rett syndrome (typically between 1–4 years of age); thus, a substantial proportion of affected young girls may have a presentation that meets diagnostic criteria for autism spectrum disorder. However, after this period, most individuals with Rett syndrome improve their social communication skills, and autistic features are no longer a major area of concern. Consequently, autism spectrum disorder should be considered only when all diagnostic criteria are met.

Selective mutism. In selective mutism, early development is not typically disturbed. The affected child usually exhibits appropriate communication skills in certain contexts and settings. Even in settings where the child is mute, social reciprocity is not impaired, nor are restricted or repetitive patterns of behavior present.

Language disorders and social (pragmatic) communication disorder.   In some forms of language disorder, there may be problems of communication and some secondary social difficulties. However, specific language disorder is not usually associated with abnormal nonverbal communication, nor with the presence of restricted, repetitive patterns of behavior, interests, or activities.

When an individual shows impairment in social communication and social interactions but does not show restricted and repetitive behavior or interests, criteria for social (pragmatic) communication disorder, instead of autism spectrum disorder, may be met. The diagnosis of autism spectrum disorder supersedes that of social (pragmatic) communication disorder whenever the criteria for autism spectrum disorder are met, and care should be taken to enquire carefully regarding past or current restricted/repetitive behavior.

Intellectual disability (intellectual developmental disorder) without autism spectrum disorder.   Intellectual disability without autism spectrum disorder may be difficult to differentiate from autism spectrum disorder in very young children. Individuals with intellectual disability who have not developed language or symbolic skills also present a challenge for differential diagnosis, since repetitive behavior often occurs in such individuals as well. A diagnosis of autism spectrum disorder in an individual with intellectual disability is appropriate when social communication and interaction are significantly impaired relative to the developmental level of the individual's nonverbal skills (e.g., fine motor skills, nonverbal problem solving). In contrast, intellectual disability is the appropriate diagnosis when there is no apparent discrepancy between the level of social-communicative skills and other intellectual skills.

Stereotypic movement disorder.   Motor stereotypies are among the diagnostic characteristics of autism spectrum disorder, so an additional diagnosis of stereotypic movement disorder is not given when such repetitive behaviors are better explained by the presence of autism spectrum disorder. However, when stereotypies cause self-injury and become a focus of treatment, both diagnoses may be appropriate.

Attention-deficit/hyperactivity disorder.   Abnormalities of attention (overly focused or easily distracted) are common in individuals with autism spectrum disorder, as is hyperactivity. A diagnosis of attention-deficit/hyperactivity disorder (ADHD) should be considered when attentional difficulties or hyperactivity exceeds that typically seen in individuals of comparable mental age.

Schizophrenia.   Schizophrenia with childhood onset usually develops after a period of normal, or near normal, development. A prodromal state has been described in which social impairment and atypical interests and beliefs occur, which could be confused with the social deficits seen in autism spectrum disorder. Hallucinations and delusions, which are defining features of schizophrenia, are not features of autism spectrum disorder. However, clinicians must take into account the potential for individuals with autism spectrum disorder to be concrete in their interpretation of questions regarding the key features of schizophrenia (e.g., "Do you hear voices when no one is there?" "Yes [on the radio]").

Comorbidity

Autism spectrum disorder is frequently associated with intellectual impairment and structural language disorder (i.e., an inability to comprehend and construct sentences with proper grammar), which should be noted under the relevant specifiers when applicable. Many individuals with autism spectrum disorder have psychiatric symptoms that do not form part of the diagnostic criteria for the disorder (about 70% of individuals with autism spectrum disorder may have one comorbid mental disorder, and 40% may have two or more comorbid mental disorders). When criteria for both ADHD and autism spectrum disorder are met, both diagnoses should be given. This same principle applies to concurrent diagnoses of autism spectrum disorder and developmental coordination disorder, anxiety disorders, depressive

disorders, and other comorbid diagnoses. Among individuals who are nonverbal or have language deficits, observable signs such as changes in sleep or eating and increases in challenging behavior should trigger an evaluation for anxiety or depression. Specific learning difficulties (literacy and numeracy) are common, as is developmental coordination disorder. Medical conditions commonly associated with autism spectrum disorder should be noted under the "associated with a known medical/genetic or environmental/acquired condition" specifier. Such medical conditions include epilepsy, sleep problems, and constipation. Avoidant-restrictive food intake disorder is a fairly frequent presenting feature of autism spectrum disorder, and extreme and narrow food preferences may persist.