



A-socio-logy of psychiatric disorder **A study of controversies surrounding etiology,** **diagnosis and therapy of ADHD**

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Abstract

The aim of this article is to analyze the controversies surrounding ADHD and the process whereby this psychiatric unit was formed and constituted as a social and scientific fact. We focus mainly on the arguments around ADHD in the United States – this is dictated by significant differences between the ways to define and treat this disorder between various countries (Bonati 2006; Cohen 2006: 14). The abovementioned controversies make us conscious of the fact that despite what a considerable number of psychiatrists, scientists and other “spokespeople” for the entity that is ADHD claim, the dominating approach to this disorder has not been based on self-evident, irrefutable scientific findings. What is more important, however, is that the quarrelling actors reveal the circumstances and the way in which the definition, as well as the methods of researching and treating ADHD were formed.

Keywords: ADHD; analysis of the controversy; the black boxes; DSM; medicalization; psychiatry; actor-network theory.

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Introduction

Attention deficit hyperactivity disorder (ADHD) is a mental disorder¹⁹⁰ characterised by the occurrence of three types of problems: (1) hyperactivity that is pathological for the given stage of development, (2) impulsiveness, that is the inability to stop oneself from undertaking action and not paying attention to their circumstances, which results in the actions being sudden and chaotic, (3) an attention disorder consisting in difficulty in focusing and absorbing information. ADHD is perceived as a disorder that significantly hinders one's functioning within society. The number of diagnosed cases keeps growing, and increasingly more attention is devoted to ADHD in the scientific, clinical, as well as in the public discourse.

The beginnings of psychiatric inquiry into hyperactivity and attention disorder can be seen already in the 1920s. However, hyperactivity and the attention disorders frequently connected therewith appear as diagnostic categories only in the 1950s. Hyperactivity was being associated with some forms of neurological disorders almost since the very start. The current definition of ADHD has evolved as a result of a long history of transformations – hyperactivity was termed *Minimal Brain Damage* or *Minimal Brain Dysfunction* (MBD), *Hyperactive Syndrome*, *Hyperkinesis*, *Hyperactive Disorder of Childhood* by different scholars in different periods. Within the last years *Attention Deficit Disorder* (ADD) was divided into two distinct types – ADD with hyperactivity (ADD+H) and ADD without hyperactivity (ADD-H) (see: Barkley 2006; Conrad & Potter 2000). All those terms have been replaced by ADHD, and hyperactivity was associated with attention disorders in its very definition.

Representatives of the mainstream research claim that ADHD constitutes an entirely new medical unit. It is considered a condition that is (1) chronic, (2) hereditary, (3) neurobiologically based, and that, despite the original assumptions (4) touches not only children, but also adults and adolescents. It is assumed that we are currently in possession of precise diagnostic criteria that allow not only for identifying various subtypes of ADHD, but also for matching pharmacological therapies with individual cases. There exists a rich body of literature concerning this disorder, which is a result of many years of neurobiological, genetic, behavioural, pedagogical and psychiatric research (see: Conrad & Potter 2000: 566).

¹⁹⁰ In psychiatric literature, the term “disorder” is preferred over “disease” (which is of more biological character) or “illness” (which signifies self-identification as sick). Although ADHD is described as a disorder, we decided to use all three terms interchangeably. Our choice is not only motivated by stylistic variation, but also by the complexity of biomedicalisation, which, in general, turns disorders into biological diseases, as the processes we describe blur the boundaries between the conceptions of disorder, disease or sickness.

So much for the official vision of the disorder. Although the existence, scale and characteristics of ADHD are presented in public as facts that are non-controversial and established by science, a closer analysis of the discourse reveals that the consensus regarding ADHD is not commonplace at all. The disorder turns out to be an object of numerous controversies, both scientific and public. It is not only therapy by means of strong stimulants that are derivatives of amphetamine, such as Ritalin or Adderall, which cause a string of negative side effects, including strong addiction, that gives rise to much debate. Attention is also drawn to the ambiguity of criteria regarding ADHD, which leave a large leeway for diagnosing people, resulting in, among others, the danger of overdiagnosis. The doubts reach further, as they concern the very nature of ADHD and its ontological status: numerous psychiatrists, sociologists, pediatricians and psychologists contest the neurobiological etiology of the illness or its hereditary character. ADHD is repeatedly denied the status of a new, separate mental illness. Finally, in extreme cases, it is openly considered an invention of more or less vested actors, among which pharmaceutical companies are named. In this context, various authors write about the “ADHD industry” or treat the disorder as a “hoax” or a “fraud”. Voices of criticism are formulated not only by marginal scholars, but also by those of a significant standing. The critics of the dominating paradigm also quote reliable research and formulate methodologically correct hypotheses (Cohen 2006: 12-33).

It is worth considering a number of questions here. How is it possible that the scientists, relying on their methodologies, are unable to reach a consensus regarding the status, etiology and therapy of a disorder? How is it possible that despite abundant controversies doctors diagnose ADHD on a massive scale and prescribe strong stimulants as a part of the therapy? How useful here is thinking that the representatives of one side have strayed, or that their notions fell prey to cognitive distortions, while the representatives of the other side deliver objective knowledge? Are we dealing here with a situation marginal to science and medicine or, perhaps, a commonplace one? And above all, how can an outside observer know who is closer to the truth in the end?

The aim of this article is to analyse the controversies surrounding ADHD and the process whereby this psychiatric unit was formed and constituted as a social and scientific fact. We focus mainly on the arguments around ADHD in the United States – this is dictated by significant differences between the ways to define and treat this disorder between various countries (Bonati 2006; Cohen 2006: 14). The above-mentioned controversies make us conscious of the fact that despite what a considerable number of psychiatrists, scientists and other “spokespeople” for the entity that is ADHD claim, the dominating approach to this disorder has not been based on self-evident, irrefutable scientific findings. What is more important, however, is that the quarrelling actors

reveal the circumstances and the way in which the definition, as well as the methods of researching and treating ADHD were formed.

It has to be noted at the outset that in the present description we do not take a stand in the reconstructed disputes, and we do not seek to solve or invalidate them. We only attempt to trace their dynamics, as well as identify resources and strategies utilised by the representatives of both sides while endeavouring to establish their definition of the situation as the dominating one. Finally, we try to show the social, political and cultural consequences of the activities of the described actors.

The research framework that we use in our analysis is actor-network theory (ANT) (Callon 1991; Latour 1999, 2005). It is a general theoretical perspective that has been developed for three decades by representatives of various social sciences. It derives from sociology of scientific knowledge and science and technology studies and stems directly from the anthropology of laboratory (see: Latour & Woolgar 1979; Knor Cetina 1981, 1999). Its main creators are Bruno Latour (1991, 1993, 1999, 2004), Michael Callon (1986, 1991) and John Law (1997, 1999). It is a particular feature of ANT that it describes society not only from the point of view of “strictly social” relations and processes which were within the field of interest of standard sociology, but it also takes into account the results of factors that have been produced by scientific, medical and engineering practice. This regards, on the one hand, technological innovations, and, on the other, elements of nature investigated and represented by the scientists. ANT assumes a rather particular ontology of the world, but it allows one to avoid certain problems of philosophical nature that traditional sociology of knowledge, as well as general social theory, would become embroiled with (see e.g. Sojak 2004).

The present text constitutes not only an analysis of research and controversies surrounding ADHD, but, above all, an attempt at showcasing in what way it is possible / worth it to consider medicine, science and engineering and their products. It is pointed out with increasing frequency that psychiatry, medicine, engineering or science as such do not deliver unambiguous answers to the questions posed to them. The role of experts and their analyses in social life, as well as the way they are perceived, have undergone significant changes in the age of late modernity. It is with increasing frequency that controversies, ambivalence and ambiguity surrounding the creation of knowledge and resolving scientific controversies are publicly revealed (Beck 1992; Callon & Lascoumes Bartheet 2009; Latour 1999; Collins & Evans 2002, 2007). The scientific disputes around global warming, made public within the last decade, are a great example. These controversies touch upon the reasons, consequences, or the scope of this phenomenon, as well as the methods of research and ways of dealing with it (see: Demeritt 2001, 2006; Levitt & Dubner 2009;

Zehr 2000). A similar level of uncertainty is encountered in the case of the diagnosis, therapy and status of ADHD.

In the first part of the text we introduce selected tools and assumptions of ANT. We suggest that the readers who are well-familiar with this framework move to the second, essential part of the text, which is devoted to the analysis of the controversies surrounding ADHD. We begin by reconstructing the representation of ADHD maintained within the main trends of research and the way it is socially adopted and sustained. We then focus on the methods by the means of which one tries to dismantle or re-build the social and scientific perception of ADHD. We are especially interested in the decisions regarding the definition and classification of mental disorders, selected scientific studies, public appearances of experts, popularising publications, reactions of the parents of children with ADHD, the actions of pharmaceutical companies and the work of social organisations promoting the fight against ADHD. The three processes this analysis focuses on are (1) the gradual making of ADHD into a socially irrefutable, objective construct, which becomes an element of *Lebenswelt*; (2) the process of medicalisation associated with ADHD, consisting in a gradual redefinition of the illness, as a result of which it encompassed increasingly more potential patients; (3) the attempts at questioning and problematising ADHD as an objective phenomenon. The text is closed by a summary focusing on the issue of managing scientific, medical and technological controversies in the age of late modernity.

Part 1: Follow the actors!

Closing the black boxes

ANT constitutes a general theoretic perspective in the field of sociology, which has developed as a result of ethnographic analyses of laboratory practice. The motivation behind such research was the wish to confirm theses regarding social construction of scientific facts that were stemming from the strong program of sociology of knowledge (Bloor 1991; Barnes, Bloor & Henry 1996). However, the first ethnographic studies already showed the inadequacy of social constructivism – on the level of laboratory practice scientific knowledge was not determined by cultural, ideological or political factors in such a way as sociology of scientific knowledge had hitherto imagined. Yet, it does not mean that the anthropology of science returned to the objectivist model of cognition. As anthropologists show, scientists in their laboratories do not represent nature as much as actively transform it. It does not happen exclusively on the level of knowledge, but already in the layer of the very object of study – the scientists physically manipulate samples and process them, re-create or create effects, finally, they visualise the phenomena in the format most suitable for themselves in order to reduce the complexity of cognitive problems

before them. This is necessary, because the world given us in the everyday, common experience is usually too complex for us to be able to grasp regularities or identify general patterns (Latour 1983; see Abriszewski & Afeltowicz 2007).

On the grounds of ANT the complex transformations and shifts that objects, concepts and visualisations undergo are termed translations. This term is supposed to encapsulate the fact that every reconfiguration of the objects of research allows one to gain something, but that it also means losses (analogically to the fact that linguistic translation causes a term or a phrase to lose some meanings, gaining new ones at the same time) (Latour 1999: 24-79; Law 2006). One of the aims of the researcher's work is to maintain the credibility of individual translations and to defend them from the criticism of co-researchers. Visualisations, models and explanations generated by science do not mirror nature. We mostly realise that when one object of nature is translated in at least two competing ways, as a result of which we receive incommensurable "versions" thereof (see e.g. Mol 2002; cf. Abriszewski & Afeltowicz 2009).

Establishing a scientific fact does not come down exclusively to creating credible and repeatable translations of the world. Apart from "negotiating with nature" it is also necessary to negotiate with other scientists. Latour devotes much attention to positive and negative modalisations of scientific theses (Latour 1987: 22-29). Positive modalisations are such framings of a thesis that cause it to be perceived as more credible, or, at least, less problematic. This refers to such statements as "it is true that x," "it has been shown that x." A negative modalisation consists in distancing the thesis from the status of objective knowledge. Examples of negative modalities are not only "it is not true that x" or "it is doubtful that x," but also "A and B determined that x" – evoking the context in which a thesis was formulated results in it being treated as someone's creation or a fact speaking for itself. The fewer modalities a thesis is surrounded with, the closer it is to the status of objective knowledge. Significantly, theses situated at both ends of the objective / unobjective spectrum are passed over in the discourse. Theses of extreme non-objectivity are treated as unworthy of discussion. Generally accepted theses pass into the sphere of unarticulated assumptions and tacit knowledge; moreover, on their basis new instruments might be designed. As this reveals, it is the researches who make decisions regarding the fate of theses and postulated phenomena – by the means of positive modalisations of statements, removing modalities or stacking new works over them, thus making them more objective. When a thesis becomes entwined into various fields of scientific experience, undermining it turns out to be extremely expensive.

When trying to establish a scientific fact, a scholar must also take care of negotiations with institutions and non-scientific actors, whose resources are necessary for continuing the (most frequently) expensive research. The lack of relations of such kind may hinder or paralyse the process of building stable translations. However, the means indispensable for “mobilising the world” are provided to the scientists not for pure knowledge, but because of products, services, techniques, predictions and expertises that they might produce. It ought to be kept in mind that the interests of the institutions supporting science most frequently also require being constructed (Latour 1983: 144-145, 1987: 108-121). The groups of interest do not always wait for a scientist that would solve their problems – frequently their interest constitutes a result of actions of the researchers; researchers frequently articulate or define what is of interest to others and what is not.

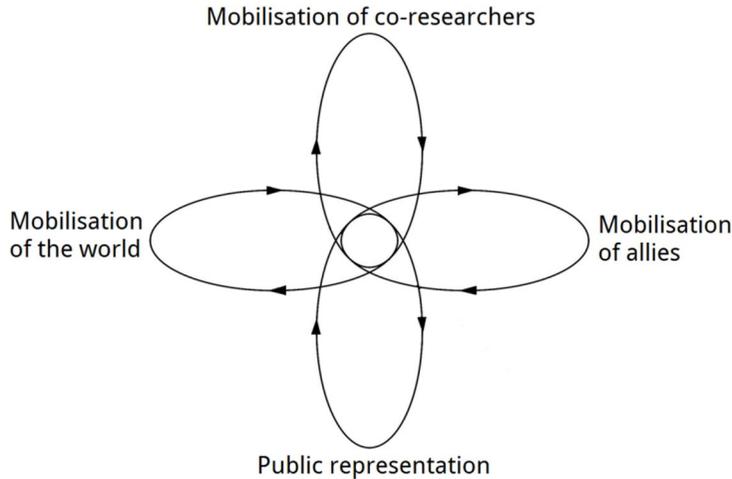
Finally, scientists must take care of a proper public representation of their products. This regards not only a given phenomenon postulated by scientists becoming an element of the common perception of the world. A statement or an object are the more objective, the more social practices they become entwined in and the more institutions are founded upon them.

It is important to consider all the aforementioned processes together. Mobilising allies is necessary for effective, if expensive, creation of credible translations. Non-scientific institutions will supply given research, but most often only when the scholars are able to offer results that are credible and recognised in the environment, and when they [the scholars] skillfully sign into their interest. Thus, in order to receive “supply”, the scholars also have to mobilise the world itself. Similar significance can be ascribed to rooting the awareness of a given phenomenon in non-scientific knowledge and practices. Mutual relations between mobilising the world by the means of scientific translations, mobilising co-researchers, mobilising non-scientific allies and public representations are illustrated by Latour’s circulatory system of scientific facts – or so called “blood flow” (see Fig. 1).

Why, however, does a given thesis become irrefutable due to circulation of resources? Scientific fact, that is a socially “stable” construct which is perceived as objective, is referred to as a black box within ANT terminology (Calton 1991; Latour 1987). Black boxes constitute strong associations of diverse interests, research resources, convictions and social relations that are difficult to question / sever. A black box can be defined in terms of the costs of its possible dismantling – an object is the more stable (which can be read as “more objective” or “real”), the more resources its possible deconstruction would take up. Deconstructing a given fact might be connected not only with the necessity of questioning the works of other researchers, or the knowledge written down in textbooks, but it can also mean the necessity of reconstructing practices and social institutions, in which a given scientific construct was

entangled. A construct is the more stable, the more was stacked over it and the more the field of knowledge and practices would have to be reconstructed as a result of its deletion. However, it ought to be remembered that there always exists a possibility of dismantling a black box – it remains only a question of costs that a community would have to bear (cf. Sojak 2004: 238-244).

Fig. 1. The circulatory system of scientific facts model (cf. Latour 1999: 98-108).



Effective mobilisation of “resources” within one loop allows for effective mobilisation of resources in the remaining areas. Stopping the circulation of resources in one loop may significantly slow down the process of creating irrefutable knowledge. The resources from one loop may be partially converted in order to improve the compensating for various deficiencies in individual loops. Within this model there cannot be drawn a borderline between the content and the context of science, or between strictly cognitive and social actions of scientists.

Seamless networks

ANT is not limited to explaining the process of constructing black boxes. Above all, it shows the way in which products of science shape and co-constitute society (Latour 1991, 1992). The creators of ANT reach as far as ascribing the status of actors to such technological factors and elements of the natural environment as microbes, cancer, global warming, etc. In order to illustrate this, let us utilise an example taken from Latour (1983, 1988). When making discoveries within microbiology, not only did Louis Pasteur introduce a new, theretofore unknown source of danger into common consciousness, thus organising a large area of cultural experience – he explained mysterious symptoms and unpredictable epidemics – but, most of all, he introduced a wholly new actor into society: microbes that are invisible to the naked eye, ubiquitous, and potentially dangerous. Microbes do not speak with their own voices, they need “spokespeople” in the shape of doctors, sanitarians, epide-

miologists or scientists who create and hold up their public representation. Moreover, these spokespeople can show other actors - this time, people - how they should behave when it comes to the activity of microbes. Under the influence of the microbiological concept people started to approach various practices, relations, and social institutions in a new way. The conviction regarding microbiological causes of some illnesses has become preserved in such prosaic actions as boiling milk, washing hands and brushing teeth. A number of market and political institutions had to start taking into account the activity of a new (f)actor. Theory of microbiology and techniques compiled by Pasteur had a colossal importance for medical care, hygiene, urban planning, animal breeding, preservation and transportation of food, as well as for the methods of warfare.

On the grounds of ANT the objects of science and other products of laboratories are ascribed a certain amount of autonomy and agency. This enforces a change in the way of thinking about the range of subjectivity of groups and individuals. Most of all, within this framework individual elements – people, groups, technologies or natural phenomena represented by scientists – never act independently, in separation from the other elements. ANT is consistently anti-essentialist and relational: all actors are constituted by the networks of relations within which they are located, and their properties are derivative of these connections. The objects stabilise each other reciprocally, at the same time setting each other frameworks for acting. Every social change constitutes a deep intervention into this network of reciprocal relations. Let us emphasise that these networks are hybrid and, at the same time, seamless – although they are woven out of entities that are ontologically different (that is knowledge, people, technology, utterances, physical interactions), they constitute an inextricable whole.

This way, we arrive at the very name of the concept – the “actor - network” formula is supposed to convey that the actor cannot be analysed in isolation from the network and that he/she *de facto* does not exist outside the network. An alternative name for the concept reconstructed herein, evoked in the title of our essay, is “a-socio-logy” (see Sojak 2004: 256-266). ANT is “a-sociology,” that is a concept which does not limit its analyses to that which is social. At the same time, ANT is “asocio-logy,” that is a branch of science focusing not on the objects themselves as much as on the associations between them.

ANT does not constitute a theory as such, but rather a certain methodological perspective – it offers a set of notions, directives and models that serve studying the social world in a new, fuller manner (Latour 1999). In its most minimalist version, ANT can be expressed with the directive “Follow the actors!”: try to establish elements that affect other elements, without assuming from the very beginning differentiation into factors that are active or passive, social or natural, etc.; next, follow the trace of transformations, translations and

mobilisations that are the result of the actions of these elements, thus reconstructing the complex network of processes and resources (Law 1991; cf. Latour 1987).

In the following part we attempt to trace the way in which the actors closed or pried open the black box of ADHD. We take a closer look at the way associations of heterogenic factors are strung together and torn apart, and we show the way in which ADHD may be perceived in terms somewhat of an actor – a construct, which “started to live its own life.” At the outset, however, it is worth making the reader aware of some methodological notions and articulate the tenets of our analysis.

Part 2: A study of controversies surrounding ADHD

Introductory remarks

In our analysis we consistently employ the demand for symmetry, formulated on the grounds of sociology of scientific knowledge (Bloor 1991: 7). It is frequent that statements considered false are explained in terms of a cognitive error, distortion, the influence of interests or ideology, while opinions considered true are treated as a result of rational, methodologically correct proceedings, or possibly as something self-evident, which *de facto* does not require explanations. However, the fact that a statement is considered obvious does not explain the way in which it achieved such a status. According to the rule of symmetry, knowledge considered true and convictions regarded as false should be explained in the same categories. Let us elaborate this point. Science studies show that tangles of interests emerge both around the established and the rejected scientific convictions (it is a separate issue to what degree these interests can explain the course of the controversies). Moreover, they demonstrate that within scientific controversies both sides usually formulate arguments and proofs that are equally internally consistent, methodologically correct and reliable. It is only when a controversy is closed and a “correct” outlook on the world is known, some opinions are ascribed the status of a self-evident truth or a cognitive error. A retrospective rationalisation (Fleck 1981) of this kind should not be considered an explanation of scientific knowledge, but rather it demands scientific explanation of its own.

Another rule we follow is avoiding ascribing interests in order to explain knowledge. We can frequently ascribe interests of various kinds to the individual participants of disputes. Significantly, non-cognitive interests can be ascribed both to the spokespeople for theses considered true, and people representing concepts that were eventually rejected. The interests not only motivate the actors to act, but repeatedly constitute an effect of these very actions. Furthermore, it is very probable that around the winning concept there will

be produced a stabilising weave of technological and social factors and interests that are inevitably connected therewith. Thus, the statement that a given concept is entangled in some non-cognitive interests does not automatically discredit it, not does it constitute its explanation. Rather than ascribe human actors interests, we prefer to act according to the “Follow the actors!” directive. Obviously, social and cognitive interests play an important role in our study. Let us, however, emphasise: we do not impute interests to the actors, but, rather, we trace the way the participants of the dispute themselves do so. We limit ourselves to reconstructing the interests articulated within self-presentation and pointed out with the aim of discrediting the opponents. We do not take any sides and our reconstruction does not constitute a move within a social game described here. Nonetheless, we realise that an a-socio-logical analysis of various statements regarding ADHD is inevitably a form of their negative modalisation.

Finally, let us add that we do not adopt some specific vision of the world as a reference point for defining the aptness of opinions analysed: we do not adopt either the dominating mainstream vision of ADHD or the perspective formulated by the dissenters. We focus on the various ways ADHD is articulated, criticised, defended, assumed and utilised in order to fulfill the goals of individual actors. We do not talk about the relation of scientific opinions to “the world out there,” but we analyse them in terms of the procedures of translations, the cost of undermining them and the possibility of their revision.

To summarise, (1) we do not assume any privileged point of view that would be external to the discourse and social practices – “a look from nowhere,” nor (2) do we start from any specific model of interests and factors that distort cognition. When we write that a given hypothesis cannot be grounded or a given statement cannot be proven on the grounds of methodological standards, it does not mean that we refer to some idealised standards of scholarship - we only evoke methodological standards declared by the participants of the discourse, as well as their own, specific utterances, as points of reference.

ADHD as a scientific black box¹⁹¹

ADHD constitutes an object of interest of many scholars and psychiatric practitioners. There exists a rich literature regarding this condition, its etiology and therapy. ADHD functions in the psychiatric, medical and scientific discourses alike. According to many scholars, precise diagnostic criteria have been worked out. Scholars and practitioners utilise this knowledge not only in

¹⁹¹ The official representation of ADHD in the scientific discourse is reconstructed herein mainly on the basis of Richard Barkley's work of 2006.

diagnosis and therapy, but this disorder is increasingly frequently cited as an example or a starting point for various neurobiological studies. In other words, ADHD is treated by many as an unproblematic black box.

The presence of ADHD in psychiatric diagnostic manuals

Let us begin with the fact that this unit figures in the commonly used diagnostic textbook *Diagnostic and Statistical Manual of Mental Disorders* (DSM), used by American psychiatrists. By definition, this publication is supposed to be an auxiliary tool in the process of diagnosing mental disorders. The textbook is prepared by the *American Psychiatric Association* (APA) and has been published since 1952. The fourth, revised edition of the manual – DSM-IV-TR (*Diagnostic and Statistical Manual of Mental Disorders* 2000), published in 2000 – is currently in force. The conditions found in the manual are described by means of specific symptoms. Depending on the case, there exists a predetermined number of symptoms a patient has to display in order to be considered ill. Additionally, a number of conditions are divided into appropriate subtypes. The appearance of a disorder in DSM constitutes a very important point in stabilising a given psychiatric unit.

It is only in 1987 in the third, revised edition of the manual (DSM-III-R) that a unit known as ADHD appears, but disorders associated with hyperactivity were introduced already in the second edition. The latest DSM divides the symptoms of ADHD into two categories: those connected with attention deficit and those connected with hyperactivity / impulsiveness. All symptoms are behavioural in character. The categories count nine symptoms each. In order to diagnose someone with ADHD, base criteria must be fulfilled: (1) the symptoms have to begin before one is seven years old, (2) the child or the adult has to demonstrate problems with behaviour in at least two situations (at school, at home or at work). (3) the behaviour has to significantly impede the individual's social functioning, (4) the behaviour cannot be explained better by other diagnostic units. Subsequently, the patient's specific symptoms have to be counted and compared to the list of the two categories. In order to diagnose ADHD, within the last six months the patient has to have displayed at least six out of the nine symptoms in the attention deficit category, or at least six out of the nine symptoms in the hyperactivity / impulsiveness category.

DSM-IV-TR specifies three subtypes of ADHD. The first, the combined type, occurs when there are present symptoms (at least six out of nine) both in the attention deficit category, and in the hyperactivity / impulsiveness category. We deal with the second type, the predominantly inattentive type, when attention deficit dominates, that is, within the last six months the patient has displayed at least six out of nine symptoms in the attention deficit category. In a case when the third type of ADHD – predominantly hyperactive-impulsive

type – is diagnosed, six out of nine symptoms in the hyperactivity / impulsiveness category have to be observed.

The neurobiological and genetic character of ADHD

ADHD functions in the discourse and medical practice as a disorder that has its permanent place in the illness classification. Likewise, its etiology seems to be established. It is considered a biologically hereditary condition of neurobiological background. It is most frequently not treated as a result of the influence of cultural factors or social surroundings. Speculations regarding the neurobiological background of ADHD have appeared almost since the very beginnings of studying the cases of children with attention and sensorimotor disorders. However, it is only recently that, thanks to the development of technology, psychiatrists were able to point towards specific neurobiological factors responsible – in their opinion – for the troubling behaviour and lack of focus. One of the first studies of this kind was conducted in 1990 by Alan Zametkin and his team from *National Institute of Mental Health* (NIMH). Using Positron Emission Tomography (PET), he examined a group of twenty five adults, who were diagnosed with ADHD as children or whose children were thusly diagnosed. The study showed a diminished metabolic brain activity in the subjects as compared to the control group (Zametkin et al. 1990). The study was criticised, among other reasons, due to the too small size of the experimental group; yet, it is considered one of the first proofs for the existence of a natural (and not cultural) reason behind the disorder. Analogous study was conducted with the use of magnetic resonance (Biedermann et al 1995). Neurobiological studies pointed to regions of the brain especially connected with the disorders observed in the ADHD patients.

The latest achievements in the research on the etiology of ADHD have taken place in the field of genetics. Most of all, Joseph Biederman's team needs to be mentioned here. The study he conducted in 1995 suggested that the level of heredity in case of ADHD reaches up to 57% (Biedermann et al. 1995). The 1992 study on identical and fraternal twins is another significant piece of research in the field (cf. Gilder et al. 1992). There also exist studies showing that the gene responsible for Tourette syndrome and alcoholism may be the reason for ADHD as well. All these factors are associated with brain metabolism, and, more precisely, with dopamine excretion. Dopamine is a compound produced by the prefrontal cortex in order to control and provide stimuli. It is thought that a deficit of dopamine might be the very reason behind ADHD (Pliszka et al. 1996). The current genetic research focuses on the attempts to identify the gene associated with dopamine excretion (Cook 1995).

ADHD as a chronic condition

For a long time, ADHD was associated with hyperactivity and attention disorders in children and adolescents; however, since mid-nineties there has been talk about ADHD in adults. The currently conducted long-term research suggests that it is a chronic disorder, displayed not only in childhood, but also during adolescence and in adulthood. In order to diagnose adults, the criteria found in DSM had to be changed – it is only the 2000 diagnostic manual that includes work environment among the situations in which the presence of behavioural symptoms has to be checked for an ADHD diagnosis.

The issue of ADHD in adults has gained common interest due to, among others, the work by Edward M. Hallowell and John J. Ratey entitled *Driven to Distraction: Recognizing and Coping with Attention Deficit Disorder from Childhood Through Adulthood* (Hallowell & Ratey 1994). The authors are psychiatrists: one works with children, the other – with adults, both claim to have ADHD. The book contains a number of examples and descriptions that are supposed to make the reader realise that as a child he/she could have suffered from ADHD without being aware of it. Additionally, there can be found a list of a hundred questions that a reader can ask of him/herself in order to self-diagnose ADHD. One can also learn how frequent ADHD is and that – according to the authors – such personas as Henry Ford, Beethoven or John F. Kennedy also suffered from it.

Obviously, the issue of ADHD in adults is also the subject of wide-reaching scientific studies. One can refer to a number of works that have shown that for many children with an ADHD diagnosis, the symptoms persist throughout adolescence (as was documented in sometimes up to 70% of cases), and in adulthood (some studies mention 66% of cases) (cf. Barkley et al 1990, Mannuzza et al. 1993, International Consensus Statement on ADHD). This only confirms the fact commonly accepted in the official medical discourse that the occurrence of the illness is not age-limited.

ADHD as a pharmacologically treated condition

In the psychiatric discourse there exists quite a wide consensus regarding the most appropriate ways of treating ADHD. Pharmacological treatment is pointed towards as the method of choice. As the representatives of the main stream of studies over ADHD, over the last decade efficient medications and a dosage system has been worked out, making it possible to manage a variety of diagnosed cases and working throughout most of the day.

Before moving on to discuss specific medications, it is important to sketch the institutional context connected with production and distribution of a cure. Due to the fact that our analysis pertains the United States, we restrict it to the

characteristics of that system. In 1970 the Congress passed a special act¹⁹² that regulates the manufacture, import, possession, distribution and use of certain chemical substances, including medications and drugs. The substances were divided depending on the level of harmfulness, tendency for addiction and usefulness in treatment into five categories (the so-called Schedules)¹⁹³. In the first Schedule there are substances that are extremely harmful and very addictive, which is why they are generally illegal (their usage in experiments is allowed). Heroin and LSD are classified herein. Schedule II contains highly addictive substances, which, however, can be used in treatment if necessary. Schedule III consists of medications used in treatment, which do not display addictive tendencies, and thus do not come under strict monitoring. The institutions in USA responsible for classifying the medications into Schedules are the Drug Enforcement Administration (DEA) and Food and Drug Administration (FDA).

The majority of medications utilised as strong stimulants in the therapy of people with ADHD are classified into Schedule II. The main stimulant prescribed by psychiatrists was methylphenidate. It was first synthesised in 1944 in order to create a stimulant that would not be addictive. This ended in a failure. The chemical structure of methylphenidate and its metabolism are close to those of amphetamine (Diller 1998: 21). It was first approved for use by FDA in 1955. In the early 60s, the company Ciba-Geigy¹⁹⁴ started to manufacture and sell methylphenidate under the name of Ritalin¹⁹⁵. At the beginning it was used in the treatment of narcolepsy, improving memory in the elderly, and only then in order to deal with problematic behaviour of children. In the 90s Ritalin was most commonly prescribed to people with diagnosed ADHD (Diller 1998: 21). Another medication belonging to the family of stimulants is Adderall, produced by the Shire concern. It combines two structurally different forms of amphetamine (Barkley 2006: 614-615; Diller 1998: 268). One of the latest medications is Strattera (Barkley 2006: 38). It is not a stimulant, and as such it was not classified within the Schedules. It was first approved for market circulation in USA in 2003.

¹⁹² *Controlled Substances Act* and its guidelines can be found on the DEA webpage: <http://www.fda.gov/RegulatoryInformation/Legislation/ucm148726.htm> (DOA December 9 2009).

¹⁹³ The list of the most important and the most commonly encountered substances as well as medications and drugs produced out of them can be found on the DEA webpage: <http://www.justice.gov/dea/pubs/scheduling.html> (DOA December 9 2009).

¹⁹⁴ At the end of 1996 Ciba-Geigy merged Sandoz and created the pharmaceutical giant Novartis that now produces Ritalin.

¹⁹⁵ Methylphenidate is also manufactured by the company ALZA under the name Concerta.

The public representation of ADHD

We have presented the consensus regarding ADHD among a broad group of scientists and psychiatrists. Let us now focus on the non-scientific reception of ADHD and its social institutionalisation.

ADHD in everyday and public discourses

ADHD is broadly represented in the everyday discourse and in the media coverage. The publication of the book *Driven to Distraction* resulted in a wide social interest in the notion of ADHD. Hundreds of thousands of copies were sold in the USA. Within the last two decades there have been published tens of books presenting what ADHD is and how one deal with it¹⁹⁶. Partly due to the influence of the aforementioned publications, this disorder started to be discussed on morning shows, on talk shows and in popular glossy magazines. In the mid-90s various authors reproduced scientific and medical statements, carrying them as indisputable, established facts into public discourse. They mentioned the neurobiological basis of the illness and pointed to Ritalin as the solution to problems of attention disorders and hyperactivity. They also warned that many adults may not even realise that they have ADHD (Diller 1998: 135-137). Following the publicly presented criteria, people more and more frequently “diagnosed” themselves with symptoms of the disorder, drawing towards it the attention of their physicians. This was probably one of the main reasons behind a significant raise in diagnoses among US residents in the last decade of the 20th century – from 900 thousand in 1990 to 5 million at the end of the decade (Diller 1998: 2).

ADHD has become fixed in discourse and public consciousness as an illness with neurological basis. This, in turn, significantly influenced various social processes. ADHD has become a permanent element of the theoretical framework that people use to grasp the social world and other people’s activities. ADHD is utilised in social interactions in order to explain why others behave in a particular way, and also to rationalise one’s own actions, successes and failures to oneself. On the other hand, people who decide they have ADHD

¹⁹⁶ Other popular books on ADHD addressed to a mass audience include: *The Gift of ADHD: 101 Ways to Turn Your Child’s Problem into Strengths* (Honos-Web 2008); *The Survival Guide for Kids with ADD or ADHD* (Taylor 2006); *Parenting Children With ADHD: 10 Lessons that Medicine Cannot Teach* (Monastra 2004); *Cory Stories: A Kid’s Book About Living With ADHD* (Kraus 2004); *Scattered Minds: A New Look At The Origins And Healing of Attention Deficit Disorder* (Maté 1999); *My Brain Needs Glasses: Living With Hyperactivity* (Vincent 2004); *Putting on the Brakes: Young People’s Guide to Understanding Attention Deficit Hyperactivity Disorder* (Quinn & Stern 1992); *Help4ADD@High School* [Nadeau 1998]; *The Defiant Child: A Parent’s Guide to Oppositional Defiant Disorder* (Riley 1997); *Give Your ADD Teen a Chance: A Guide for Parents of Teenagers With Attention Deficit Disorder* (Weiss 1996); *Change Your Brain, Change Your Life: The Breakthrough Program for Conquering Anxiety, Depression, Obsessiveness, Anger, and Impulsiveness* (Amen 1999).

start to refer to themselves through the vision of the disorder as fixed in the discourse. People repeatedly use the concepts of ADHD so as to justify various behaviours. Talking about oneself this way frequently forces one to live with the illness and to perceive it as something positive. The increased creativity or the ability to multitask is thus emphasised in order to counterbalance the negative phenomena associated with ADHD. In extreme cases, ADHD is perceived in social discourse not as a disruptive illness, but as something we can use to our advantage in order to achieve success in life (LoPorto 2005). It happens sometimes that people use the notion of ADHD in a way that breaks its connotations with a pathological state.¹⁹⁷

The Internet provides numerous examples of social autoidentification associated with ADHD. One can find discussion boards gathering the people suffering from ADHD¹⁹⁸, blogs¹⁹⁹, or sites that offer special techniques of dealing with the condition²⁰⁰.

ADHD support organisations

When analysing factors that have stabilised ADHD, we cannot omit the activities of organised social groups. There functions a range of organisations whose aim is to popularise knowledge about this disorder and ways of dealing with it. One of them is Attention Deficit Disorder Association (ADDA), an association of people suffering from ADHD founded in the late 80s. Undoubtedly the largest, the most widely recognised and the most influential initiative focusing on the ADHD problems is Children and Adults with Attention Deficit Disorder (CHADD).²⁰¹ The organisation was founded in 1987 by a group of parents whose children were struggling with this ailment; it publishes a special bulletin called *Attention!* At present, CHADD counts around 20,000 members, 2,000 of which are practising psychiatrists and other people professionally dealing with ADHD patients. The most important members of CHADD are Edward M. Hallowell and John J. Ratey (the authors of *Driven to Distraction*),

¹⁹⁷ For example, in Poland people more and more frequently describe themselves or others as “ADHDs” which, in practice, does not denote a person with a diagnosed mental disorder, but a person who is very dynamic, full of initiative, who “cannot sit in one place” etc.

¹⁹⁸ See e.g. <http://www.addforums.com/forums/>, <http://www.medhelp.org/forums/ADD--ADHD/show/313>, <http://forums.about.com/n/pfx/forum.aspx?nav=messages&webtag=ab-add&lgnF=y> (DOA December 10 2009).

¹⁹⁹ See e.g.: <http://adhdguide.blogspot.com/>, <http://www.myaddblog.com/>, <http://www.addadhdblog.com/#b6607> (DOA December 9 2009).

²⁰⁰ For example <http://www.adhdtraining.co.uk/>, http://www.adhdparenttrainer.com/php-files/viewpage.php?page_id=31, <http://adhd-add-coping-strategies.suite101.com/> (DOA December 10 2009).

²⁰¹ See the official webpage: <http://www.chadd.org/> (DOA December 10 2009); the initiative was initially named *Children with Attention Deficit Disorder*; the name was changed to CHADD in 1993, as the group's activity was broadened to fight ADHD in adults.

Russell A. Barkley (the author of the constantly re-printed book *Attention Deficit Hiperactivity Disorder. A Handbook for Diagnosis and Treatment* and the initiator of the emergence of international consensus of scientists regarding ADHD, which we discuss later), Alan Zametkin (the author of the first studies over ADHD with the use of PET). The number of members of the organisation and its social influence result in the fact that CHADD sets the tone of the American dispute on ADHD.

It is easy to guess that CHADD accepts, following the main trends of research, that ADHD is an objective medical unit of genetic and neurobiological basis that should be treated pharmacologically. The main aims of CHADD are to provide latest information about progress in research over the illness and to advise parents of ADHD children. Another important activity is making teachers aware about the nature of the illness and ways of dealing with it.

Juridisation of ADHD

Finally, it should be noted that ADHD is reinforced as a black box in the American legal system. In 1973, the Congress passed Vocational Rehabilitation Act²⁰², regarding persons with physical or mental disabilities. Section 504 of the act states that “[n]o otherwise qualified handicapped individual in the United States [...] shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” This act was later amended by such laws as the 1990 Individuals with Disabilities Education Act (IDEA)²⁰³. IDEA specifies special educational benefits available to children fulfilling its criteria. A child diagnosed with a condition listed in IDEA is entitled to an individual learning plan, classes and teaching techniques being adjusted to their needs, and individualised methods of assessment. At the very moment of the law coming into force, CHADD began lobbying efforts aiming to have ADHD introduced on the list. These efforts came to fruition in 1991. Since then, several schools which did not meet the requirements of IDEA have been brought to court by parents of schoolchildren (Diller 1998: 152).

It is not only children with mental disorders, but adults as well. Americans with Disabilities Act (ADA) was passed in 1990. The Act initially referred to persons with physical disabilities, but in time came to include mental disabilities as well, including adults diagnosed with ADHD. The Act does not regulate, however, the range of services to be extended for specific diseases. The way of dealing with adult employees with mental disorders was regulated by the fed-

²⁰² Full text of the act is available at <https://www.civilrights.dot.gov/page/rehabilitation-act-1973> (DOA April 29 2013).

²⁰³ Cf. The history of the act and its most important tenets: <http://www.ed.gov/policy/speced/leg/idea/history.html> (DOA June 28 2013).

eral agency Equal Employment Opportunity Commission (EEOC), which set the guidelines for employers in 1997. EEOC points out that coming to work late recurrently or aversion towards other employees may stem not from intentional behaviour, but from mental problems. If the issues of the employee exhibiting such behaviour do not affect the efficiency of their job, the employee is obligated to adapt the workplace to their employee. While EEOC guidelines do not refer to ADHD directly, if a person suffering from significant and permanent attention, concentration and behaviour disorder is diagnosed as suffering from ADHD, then they do meet those guidelines, and therefore may be entitled to special treatment. This may include: schedule adjusted to the needs of a given employee, sick leave, or adjusted workplace environment.

All the aforementioned factors contribute to the fact that ADHD must be treated as a social actor – through grassroots initiatives, practising doctors, the media and the legal system it functions as a regulator of human actions.

Controversies surrounding ADHD

We have shown how dense the network of practices and institutions that ADHD, understood as a neurobiological mental disorder, is entwined in. When trying to challenge scientific findings regarding this disorder, one has to face not only the resistance of the research community and social organisations such as CHADD (which can, in support of their point of view, evoke results of numerous studies and statements of authorities), but also everyday and media representations of ADHD, common practices of rationalisation and explanation, or, finally, the legislative system, which establishes a dominating vision of ADHD. It turns out, however, that a number of journalists, practising doctors of medicine, scientists and representatives of parent communities challenge almost every aspect of what ADHD is²⁰⁴. They criticise the diagnosis, way of treating, and the etiology of the illness alike. There are, finally, also those who refuse to consider ADHD a new medical unit.

Diagnosis

ADHD diagnosis is possibly the subject of the greatest controversies in medical society. In his book *Running on Ritalin*, Lawrence H. Diller enumerates a number of problems connected with diagnosing ADHD (Diller 1998: 60-65). Firstly, he draws attention to the fact that entering illnesses to or removing them from the list is very frequently dictated by factors other than “scientific

²⁰⁴ Those critical of the dominating paradigm are also engaged in organised activities; they organise societies, create discussion boards and Internet portals, where they share information and present their opinions. This, in particular, pertains to parents who focus on the negative consequences of pharmacological therapy of ADHD.

objectivity.” He provides the example of homosexuality, which DSM contained as a mental disorder until 1974 – it was political factors that decided about its removals, not scientific research. Secondly, formulating diagnostic guidelines is, to a large degree, open to interpretation – different doctors may diagnose the same cases in different ways. Problems may arise, for example, while estimating the frequency and intensity of undesirable behaviour (for instance: Does a child’s wriggling when he/she sits is so intensive that it can be considered a symptom from a DSM list?), and the very list of symptoms necessary for a diagnosis (Is a patient who strongly displays five instead of six symptoms healthy?) Thirdly, there exist no objective indicators, other than outside symptoms, that would point to the occurrence of the disorder. Despite neurobiological and genetic research, scientists did not manage to construct unambiguous clinical tests. In other words, many people (including practising doctors) are surprised by the fact that it is officially stated that ADHD is a condition with a neurobiological basis, while in practice, it is tested by the means of behavioural tests.

At the same time, it is emphasised that the DSM list of criteria was supposed to fulfill auxiliary functions, yet it is treated like a diagnostic test. Fourthly, although DSM-IV-TR states that the symptoms must occur in at least two environments, in practice it is most frequently the same people making observations in both environments, for instance, the parents or the patients themselves. The doctor is forced to rely on their statements, which by themselves may be utterly subjective and distorted. The fifth point to be made here is that diagnoses generally do not take into consideration environmental factors, such as the characteristics of familial relations, which may be key in cases of children with heightened levels of activity and dispersed attention. The sixth is that diagnostic criteria are overly inclusive. This objection is partly a result of the aforementioned problems. When no conclusive tests exist and the diagnostic criteria are open to interpretation, the risk is that the condition will be marginalised or diagnosed too often. In the case of ADHD, the critics point to the latter option. As new statistical manuals have been published, the numbers of diagnosed cases of ADHD have risen consistently and, consequently, so have the production and consumption of appropriate medications. The seventh point is that the criteria formulated in DSM may very well apply to other conditions described as discrete units in the manual, such as obsessive compulsive disorder (OCD) or oppositional defiant disorder (ODD).

The above problems may be directly referred to medical practice dilemmas. As the sociologist Adam Rafalovich points out (2005), the case of ADHD constitutes an example of the problem of uncertainty faced by doctors in everyday practice. Rafalovich shows the chasm between the theoretical academic disputes and the perspective of practising doctors. The latter not only approach patients in a different way but, most importantly, exhibit scepticism in relation to the existing guidelines, which are prepared by “the academics,” as

a result of encountering specific cases. The question of ambivalence and negotiation is particularly striking where mental disorders and DSM guidelines are concerned. Rafalovich conducted interviews with twenty-six professionals (psychiatrists, educators, pediatricians and psychologists) dealing with persons suffering from ADHD. Twenty-four of the interviewees in their statements expressed doubts and fears regarding the methods of diagnosing and treating ADHD. Most of them confirmed differences and inconsistencies between the etiology of ADHD derived from DSM-IV and specific cases of the condition. The difficulty stems partly from the fact that the eighteen criteria listed by DSM-IV are not divided into biological and environmental ones. Doctors fairly often make the distinction on their own, dividing ADHD into primary (neurological) and secondary (social/environmental). One of the interviewees stated that only the former is “true” ADHD. Many among them believed that it is not enough to simply count the symptoms according to the DSM-IV guidelines – more detailed and time-consuming observations must be conducted. DSM-IV constitutes an introductory guide, but it does not exhaust the multiplicity of factors that they face where ADHD is concerned. One of the respondents expressed the awareness of the changeability of the ADHD definition in the following words: “I really think that ADHD is a garbage can diagnosis. ... I wouldn’t be surprised if we see the diagnosis changed within the next couple of years” (Rafalovich 2005: 311). Some respondents rejected DSM-IV wholesale, as it did not fit their approach to the patient. Eighteen of the interviewees remained unconvinced by the neuro-biological explanations. They could not provide their own answers as to the cause of ADHD. The answers provided by the remaining professionals differed significantly from one another – the explanations ranged from experiencing trauma in the child’s life to brain defects. Many of the participants asserted that there is no consensus as to what ADHD is. Such perspectives denote ADHD as a disease “in process,” the origins of which have yet to be entirely understood. (Rafalovich 2005: 312)

In spite of those reservations, using DSM-IV is mandated by legal and bureaucratic factors. It appears that thanks to basing diagnosis on the manual, it is possible to obtain coverage of the costs of treatment. In the words of one of the women psychiatrists taking part in the study, “Insurance companies like to get some kind of diagnosis, and the plain fact is that they do cover ADHD, or just about anything in it [referring to the contents of DSM-IV]. I guess you might say there is a pressure to use the letters ‘A-D-H-D’, so that we can move ahead and get a kid treated” (Rafalovich 2005: 313). If the diagnosis is not based on DSM-IV, chances are that the cost of treatment will rise exponentially. Such conditions constitute institutional incentives to positively diagnose ADHD and it may result in an overly large number of cases. Furthermore, clients may have reasons to believe that a misdiagnosis is in their best interest, as it ensures coverage of the costs of treatment (Kirk & Kutchins 1992: 240).

Perhaps the most substantial allegations against the dominant paradigm concern gradual expanding of the ADHD category to include an increasingly large group of potential patients. This process has taken place in two ways: firstly, the category has included more and more children, and secondly, the condition has been “broadened” to other age groups. As a result, an increasingly large group of people were diagnosed with ADHD. This happened through small modifications to one after another diagnostic criterion written into the DSM. To give an example, the addition of situations in which symptoms should be observed meant that a person capable of focusing on work but distracted in interpersonal relations or during partaking in entertainment could be diagnosed positively. The category has embraced more and more children’s behaviours that previously were not treated as symptoms of mental disorders. Additionally, hyperactivity and attention disorders were combined. Definition changes led to the fact that children who were not diagnosed as “hyperkinetic” according to DSM-II may be considered in such terms according to DSM-III. (Conrad, Potter 2000: 563-564).

As a result of reconceptualisations introduced in DSM-IV, the number of ADHD diagnoses rapidly rose; Mark Wolraich and his team conducted a study (Wolraich et al., 1995) on a group of 1077 children (aged 5 to 12 years). The subjects were diagnosed using DSM-IV and then DSM-III. In the same group, 9.6% of patients were classified as patients with ADHD according to DSM-III and 17.8% of the patients according to DSM-IV. Moreover, the medical category was broadened to include adults, which additionally increased the number of diagnosed cases. Presumably, in addition to that, such phenomena as self-diagnoses also appeared among patients influenced by public representations of the condition who would pressure their doctors with expectations of a specific diagnostic pronouncement.

The gradual expansion of the inclusiveness of the ADHD category constitutes one of the many symptoms of increasing medicalisation (Williams & Calnan 1996). This process consists in broadening boundaries of definitions and medical practice. Medicalisation in the case of ADHD does not only concern broadening of the diagnostic category. We should also remember that the very spread of ADHD category results in a certain type of human behaviour being made into a strictly medical problem (Conrad & Potter 2000).

Etiology

Unequivocal ascertainment of what ADHD is constitutes another important sphere of controversy as well. Officially ADHD is held to be a congenital neurobiologically-based condition. We have already mentioned various neurophysiological and genetic studies referred to by the supporters of a naturalistic account of the condition. Many of those “findings” have emerged as sub-

ject of controversy. Three areas in the etiology of ADHD can be delineated in connection to problematisation within those discussions. Firstly, the naturalist account itself had a long history rife with various definitions of the condition and various attempts at explaining its causes. This has a negative impact on the evaluation of the reliability of these explanations and puts the very status of the condition in doubt. Obviously, in light of normative scientific methodology, the changeability of a notion or definition does not deprive it of legitimacy. Nonetheless, from the perspective of laypersons or practising physicians the historical changeability of the definition and description of ADHD influences negatively the reliability of the prevalent paradigm. We are therefore in a situation where physicians are to accept a new medical unit characterised by a long history of re-definitions and explanations that came to be considered incorrect, which, in addition, constitutes a combination of conditions previously considered to be separate units.

The second issue concerns the conclusiveness of contemporary neurobiological and genetic research. This is of key importance. The legitimacy of the biological paradigm in explaining ADHD is based on the aforementioned studies from the 90s. The critique of neurophysiological studies focuses, above all, on the issue of experiment reliability and presumed overinterpretation. The authors were criticised for too small experimental samples (Timimi and 33 Co-endorsers 2004: 60), the lack of unequivocal proof of the existence of meaningful pathology in brain function and confusing the cause and effect (it is possible that ADHD causes changes in the brain rather than the other way round) (Baumeister & Hawkins 2001). It has also been pointed out that changed brain function may be the result of ADHD treatment. As it turned out, most neurophysiological studies were carried out on persons who had previously been treated pharmacologically (Leo & Cohen 2003). Genetic tests have also been criticised through pointing out some areas of result overinterpretation. It is, for instance, highlighted that family cases do not take into consideration environmental factors which are the same for all family members (Joseph 2000). It is also the case that there is no proof whatsoever pointing to ADHD being caused by a specific gene (Diller 1998: 110).

A third sphere of controversy around naturalist etiology is pointing to such alternative explanations for ADHD causes which are associated with the outside environment. In the early 1970s the pediatrician Benjamin Feingold, specialising in treating allergies, hypothesised that child hyperactivity may be attributed to inappropriate diet. Symptoms related to ADHD were to be caused by consuming preservatives, sweeteners or flavour enhancers. Feingold composed a special diet which eliminated these factors. A second, currently quite popular, alternative explanation of the causes of ADHD regards the state of contemporary culture. Too high expectations towards growing children, cultural acceleration or lack of moral authorities capable of “tempering” prob-

lematic behaviour²⁰⁵ are all mentioned in this context. The third explanation focuses on typically sociological factors. It is argued that the cause of ADHD may be related to the disturbed social structure and social roles, connected, for instance, with rising numbers of divorces and passive participation in family life. At the same time, it is said that paying attention to children may influence the development of their cognitive faculties, and relegating children to being cared for outside the home environment may impact them negatively (Diller 1998: 77-78).

Therapy

Controversies arising around treatment may be partly considered to stem from the ambiguities surrounding diagnosis and etiology. Pharmacological treatment fits naturalist explanations for ADHD (since the condition is congenital and biologically-motivated, it should be treated with the use of substances that influence the organism directly). ADHD is typically treated with Schedule II substances, which may worry persons pointing to the ambiguity of the criteria, excessive inclusiveness of the definition or the danger of overdiagnosis. It should not, therefore, come as a surprise that the opponents rejecting naturalist explanations or challenging the legitimacy of diagnostic procedures typically attack also the dominant mode of treatment.

Again, several problematised issues may be noticed. Considering the fact that in the US pharmacological treatment is prevalent in cases of persons with ADHD, all problematic issues will concern stimulants as such. Firstly, the high addictivity of these substances is frequently mentioned. This is particularly true for Ritalin, which has been singled out by the DEA. Cases of severe addiction have been noted. The existence of groups selling the drug illegally as a narcotic substitute has been confirmed. This is especially true for students who resell the drug to each other as performance-enhancer for studying. The drug is ingested similarly to cocaine – the pill is crushed and then inhaled nasally. In 1995, two fatal cases attributed to this drug were noted in the United States. According to DEA reports, Ritalin is listed among top ten most frequently stolen medicines in the US. It is not irrelevant that in the USA the production and consumption of Ritalin is five times higher than in the rest of the world. The amount has in fact multiplied sixfold between 1990 and 1995²⁰⁶.

Secondly, according to many specialists, Ritalin and other stimulants may cause a number of side effects. Biological (stunted growth and weight gain in growing children, loss of appetite, headaches, stomach pain, eyesight prob-

²⁰⁵ Sami Tamimi is one of the representatives of the cultural perspective (2001).

²⁰⁶ Cf. <http://www.justice.gov/dea/pubs/pressrel/pr951020.htm> (DOA November 17 2009). Cf. also the full DEA report from 1995: <http://www.methylphenidate.net/> (DOA December 15 2009).

lems, heart problems, hallucinations, liver problems)²⁰⁷, as well as psychosocial consequences are listed here among possible ones (cf. Breggin 1992).

Thirdly, the effectiveness of stimulants as medicines is very limited. It was noted in 1978 already that stimulants affect persons diagnosed with hyperactivity and attention deficits in exactly the same way as they do persons without those problems. Research led under Judith Rapport (Rapport et al. 1978) from National Institute of Mental Health (NIMH) consisted in administering the stimulant to a group of hyperactive and non-hyperactive children (the report analysed Dexedrine, another drug used in treating ADHD, rather than Ritalin). The effect was identical: improved attention and better educational and task-related performance were noticed in both groups. The effect of the medicine did not relate to typical symptoms in a way that would suggest that those symptoms were particular. From a pharmacological perspective, no difference was detectable between healthy and allegedly ill individuals. This belies two important questions: (1) Stimulants undoubtedly work, but is it possible to determine that they treat ADHD? (2) How many people may want to obtain a diagnosis that makes it possible to legally use Schedule II, methamphetamine-based drugs that improve work or school performance?

Fourthly, it is frequently said that stimulants do not treat the cause of the condition but merely alleviate the symptoms temporarily. In other words, Ritalin does not treat the pathogen in the body. Once treatment stops, the symptoms reappear (Diller 1998: 44).

As a fifth point it should be mentioned that the critics of the dominant paradigm point to alternative, not as popular, ways of treating hyperactivity and attention deficits. This predominantly refers to behavioural training of various kinds, combined with individual approach to treating the above-mentioned problems. One such method is cognitive behavioural therapy (CBT). It is a multi-faceted approach that teaches the patient specific behaviours, which in the case of ADHD means, for instance, the ability to focus attention on one subject, sitting still, etc. CBT may consist of role-playing, studying from a textbook or completing an established sequence of actions (Diller 1998: 223). Another approach is to arrange group sessions with patient's family members or peers. This may consist in learning self-control in social environment through a reward and punishment system. In the United States, special summer camps are organised specialising in psychosocial treatment of ADHD²⁰⁸. A number of techniques have also been developed that are used in adapting the environment to best foster the sick individual. This predominant-

²⁰⁷ Cf. <http://www.psych.org/Share/Parents-Med-Guide/Medication-Guides/ParentsMedGuide-ADHD-English.aspx>, especially pages 9-10 (DOA December 15 2009).

²⁰⁸ Cf. <http://circ-uab.infomedia.com/content.asp?id=98821> (DOA December 16 2009).

ly concerns schools carrying out special educational programs for ADHD children.

All the above mentioned alternative ways of treating ADHD need not exclude pharmacological treatment. The supporters of psychosocial and behavioural approaches are mostly pointing to the danger of one-sided reliance on Ritalin, rather than negating the need for it whatsoever. For instance, Lawrence H. Diller, the author of the aforementioned *Running on Ritalin*, uses pharmacological measures in his medical practice even as he considers their abuse to be a negative phenomenon. The controversy surrounding Ritalin does not consist in it lacking any medical use, but in it being presented and promoted as the only effective ADHD drug in spite of the existence of alternative treatment methods.

ADHD and disease mongering

The problem of promoting stimulants leads us to the last area of controversy, which is perhaps the most significant one. This refers to the relationship between pharmaceutical companies producing the most popular ADHD medicines and the associations uniting patients. Let us refer to a specific situation. In 1995, DEA published the aforementioned report on Ritalin²⁰⁹, commissioned in response to the CHADD appeal to have the drug moved from Schedule II to Schedule III. Such a change would practically come down to lessened control over the consumption and production of the drug. The report revealed that CHADD failed to sufficiently inform its members about the very possible risk of addiction or the dangers the medicine poses to health. On the contrary, it claimed Ritalin to be a substance causing little harm, and without any side effects. The report also stated that between 1991 and 1994 the company producing Ritalin – Ciba-Geigy – donated \$748,000 to CHADD. In turn, in 1993 and 1994, when the company experienced shortages of Ritalin due to increased demand²¹⁰, the members of CHADD lobbied congresspeople they were acquainted with, who, in turn, approached DEA more than 135 times to increase the limits placed on the production.

As a result of the report's publication, the plan to move Ritalin to Schedule II was abandoned. A second consequence was a suit filed by ADHD children's parents against the American Psychiatric Association and Novartis pharmaceutical company (formerly Ciba-Geigy). They alleged a conspiracy formed in order to artificially create demand for stimulants. As the complainants

²⁰⁹ Cf. <http://www.methylphenidate.net/> (DOA December 16 2009).

²¹⁰ Due to the fact that Ritalin can be found in Schedule II, it is controlled with regard to its production as well. In practice, this means that its manufacturer cannot exceed a certain quota of stored substance imposed by the DEA. Moving Ritalin to Schedule III would result in a situation in which the company would not need to bother with production bans imposed from the above.

claimed, the pharmaceutical companies have a decisive influence on APA's actions, which they lobby in order to inflate the production of medications (Charatan 2000: 723). There were several such lawsuits, however, none of them ended with a verdict which would threaten pharmaceutical companies or medical institutions.

The above accusations are connected with a larger trend in criticism lodged against the actions of pharmaceutical concerns and associated doctors and scientists. More and more often, journalists, as well as doctors, begin to write about the phenomenon of disease mongering (cf. Applbaum 2006; Healy 2006; Heath 2006; Moynihan, David 2006; Payer 1992; Pettersen 2008; Phillips 2006; Tiefer 2006; cf. also "PR Watch" 2003, Vol. 10, no. 1). As part of this trend, journalists, doctors and scientists accused the companies of promoting not so much drugs as diseases themselves. The argument used here states that, in order to maximise profits, companies create markets by "publicising" new diseases, making diseases out of risk factors or "promoting" old conditions, so far considered to be harmless or marginal. According to Ray Moynihan and Alan Cassels, the authors of *Selling Sickness* (Moynihan & Cassels 2005), disease mongering can be connected, for instance, to (1) high cholesterol, which is now popularly considered to be the main cause of heart attack, (2) depression, which has become an exceedingly wide category, or such "diseases" as (3) premenstrual dysphoric disorder or (4) menopause. As the proponents of the term claim, pharmaceutical companies use PR and marketing techniques in order to publicise and create only those diseases for which they already have medicines on offer.

ADHD has been listed among such "promoted" diseases (Moynihan & Cassels 2005: 61-81). The critics of disease mongering have pointed to the campaigns promoting fighting ADHD with Ritalin and to the financing of the organisation by pharmaceutical companies. The authors do not suggest that in the case of ADHD the companies created a false grassroots initiative²¹¹; it is rather that through directing the flow of financial support they are capable of promoting certain ideas and to position various opinions and content in the public discourse (such a type of wielding influence over the media and the discourse can be referred to as agenda-setting [McCombs & Shaw 1972]).

Attempts to close the controversy

The controversies around ADHD have involved journalists, practising doctors of medicine and researchers, as well as regular people. Some openly criticise mainstream research while others limit their input to expressing doubts or

²¹¹ As critics of disease mongering show, false grassroots initiatives often are in fact veiled promotional campaigns and have been used in a number of other diseases.

formulating alternative suggestions. The opponents of the dominant paradigm express their doubts not only through academic papers or in the media, but also with the use of legal resources. However, the existence of signals of resistance does not suffice to talk about controversy in the sociological meaning of the word. In order for this situation to constitute a controversy, the representatives of the opposing sides should try to subvert, discredit or refute each other's claims. To this end, they reinforce their own "circulation mode" and attempt to make it more difficult for their opposition to mobilise heterogenic resources. This can involve, among others, attempts to subvert the credibility of the translations formulated by the opponents, but can also take the form of blocking access to economic or social resources.

Within this context, one of the most important episodes in the controversy may be found in the discussion which took place between 2002 and 2004 on the pages of *Clinical Child and Family Psychology Review*. The year 2002 marks the publication of *International Consensus Statement on ADHD*, a document initiated by Richard Barkley and signed by over 80 specialists (primarily Americans), directed against the supporters of the theory that ADHD is a problematic and ill-defined medical unit. In the text one can find the articulation of the dominant paradigm regarding ADHD, which we have reconstructed within this paper. The authors do not just criticise the theories of the opponents, but accuse them of acting against public's best health interests, emphasising the dangers associated with ADHD.

In March 2004, on Sami Timimi's initiative, the same periodical published the article *A Critique of the International Statement on ADHD* (Timimi and 33 Co-endorsers 2004), cosigned by 33 other researchers. The authors point to a number of debatable points, for instance: the lack of a final proof whether ADHD is attributable to neurobiological or metabolic factors; the differences in the number of the person suffering depending on culture, country or even region of a country; and unclear definition of the condition, including other disorders within itself. In criticising the neurophysiological account, the researchers refer to the opinion published by American National Institute of Health in 1998, which states that there is no sufficient proof to connect the condition to a biochemical brain dysfunction. Due to focusing on naturalist explanations, environmental influence is entirely overlooked or even negated. The authors also quote the aforementioned doubts regarding treatment. As they suggest, drug therapy alone can discourage from undertaking more demanding, yet more effective CBT methods. Finally, the authors propose adopting a cultural perspective on ADHD.

The same issue of the journal included a comment by Barkley (2004). The author points to mistakes in quoting made by the critics of the dominant paradigm and to the fact that opposing the official ADHD definitions has little bearing and belongs outside the scientific and medical mainstream. The critics of

ADHD lack any criteria differentiating acquired and congenital disorders, the latter of which may be universal for all people. Moreover, the authors who criticise ADHD quote a paper which does allow for the possibility of ADHD being associated with biological factors, and does not unequivocally prove ADHD to be caused by child sexual molestation, as the critics would have it. Furthermore, Barkley claims that if the suggestions of ADHD critics were to be followed, other diseases, such as Parkinson's, would also fail to meet their criteria. Barkley refutes the argument regarding the differences in severity or the course of the condition in different cultures or societies – he shows that it means neither that ADHD does not exist, nor that it lacks neurobiological causes. Where the argument against neuroimaging studies is concerned, Barkley cites a study that compares the images of persons who were and were not treated for ADHD. He opposes the cultural explanation of ADHD, stating that there is no proof for the veracity of this theory. He points to studies done on twins, showing that environmental factors are less influential than genetic ones.

As sociology and philosophy of science show, such debates may last forever – new research can be quoted and subsequent logical or methodological errors can be pointed out. Arguments focusing on the issue cannot convince people who function within different, incompatible paradigms and cannot end the controversy on their own. A second issue which we need to pay attention to is that each officially accepted fact regarding ADHD has been publically undermined. Thirdly, public statements by mainstream researchers may be interpreted as an attempt to close the position authoritatively. However, as can be observed, the opponents refuse to have arguments along the lines of *Roma locuta, causa finita* used against them. Finally, let us turn to the statement which is placed in between issue-related arguments, namely: the claim that the opponents do not belong to the mainstream of ADHD research. Is it not “social proof”? The paradox revealed by ANT should be noted here – Barkley refuses to attribute importance to critical voices, yet the very fact that he must dispute them accords them such importance. As studies on modality in science show, having one's thesis radically criticised is better for authors than having it ignored. This is the manner in which critical approaches opposing dominant paradigms are usually treated. In this case, however, the critical voice is too strong for the mainstream researchers to remain passive.

Critical researchers do not only refer to already existing research outcomes which they interpret differently. They also strive to do their own research, among other things – into cultural factors influencing ADHD. In other words, they do not only try to “make over” the world mobilised by the dominant paradigm so that it will accept their theories, but they also create their own independent chains of translations.

It should, however, be remembered that the groups contesting mainstream research do not limit themselves to action within the loop of “mobilising the world,” and their criticism and attempts to create alternative paradigms also involve attempts to mobilise resources in the remaining three loops. Once more, cognitive and issue-related aspects are interwoven with group interests, public representation and reactions of the academic community.

One more strategy used in the ADHD dispute is worth noting. Let us begin with the following example. As we remember, research done with PET imaging showed differences in brain metabolism in persons with ADHD. This research was then undermined by pointing to the too small sample and the possibility that the observed results were the artifact of using medications by the persons in the experimental group. This is why the research was repeated, to dispel controversy (cf. Ernst et al. 1994; Zametkin et al. 1993). The first results, however, were not confirmed. The subsequent studies, which did not fit the dominant discourse, were ignored and absent from the media. Let us, however, pay attention to the official standpoint of the Center for Disease Control and Prevention, which is that “the causes and risk factors of ADHD are unknown, but current research shows that genetics plays an important role.”²¹² Is that not in opposition to official declarations of mainstream researchers who claim that key aspects of ADHD have already been scientifically proven? Moreover, in spite of numerous disputes which mobilised mainstream researchers to prove their theories, no new, revolutionary results have been found that would allow them to ultimately silence the critical voices.

Let us however note the irony of the entire situation. It is highly probable that the very controversy around ADHD has substantially contributed to making the knowledge about the condition more common in public discourse. Even negative modalities to some limited extent contribute to objectivisation of the hypotheses. In this case, we encounter the effect of reversal: by formulating their accusations to question alleged facts, critics ultimately reinforced public representation of ADHD, contributing to closing it all the more fully in the form of a black box (Conrad & Potter 2000: 571)

Conclusion: how to manage controversies around the definition of a disorder

The case of ADHD illustrates a number of patterns in functioning of science as observed by sociologists. In the research process we do not face self-evident results and proofs. Experimental data and results of observation do not speak for themselves, nor do they solve automatically controversial questions. The results of translations must be interwoven into a complex network of factors

²¹² <http://www.cdc.gov/ncbddd/adhd/facts.html> (DOA November 19 2009)

and skillfully articulated in order to gain the assigned power of persuasion. Just as there are no scientific facts that speak for themselves, so there are no diseases that objectively impose themselves on us. That people die, suffer and feel unwell is a perceptually accessible, culturally universal fact. However, the answer to the question of the reasons for their suffering and of what their disease is remains the effect of actions by various processes and social institutions. In our culture it is medicine that most of all organises social experience associated with this sphere, determining what diseases a given person suffered from and why, as well as what the cause of death was. Therefore, we can speak of unorganised experience of disease on the one hand, and of strict classifications, diagnoses and treatments culturally organising illness, on the other (Conrad & Potter 2000: 559-560).

The appearance of subsequent frames organising our perception of illness constitutes a symptom of increasing medicalisation. In the case of ADHD we were facing not only the medicalisation of certain spheres of experience (hyperactive children, non-satisfactory results of employees, difficulty forming social relations) but, most of all, the attempt to make the definition of the disorder more inclusive. Diagnoses and their criteria themselves were the result of action not only of scientific factors – they were the effect of a heterogeneous entanglement in the form of grassroots initiatives, patient self-diagnoses, public imaginings regarding ADHD, pharmaceutical companies' interests, teenagers looking for “legal drugs”, the results of PET and MRI research, etc. It should, however, be noted that in many cases science has lost control over the process of defining what ADHD is. In some cases we faced a process of a certain demedicalisation, where laypersons appropriating the ADHD category deprived it of current medical connotations, treating it not as a pathology or a disease but a condition advantageous from a professional or social perspective.

The processes and factors described in this article have vital consequences, and the ADHD resulting from them may be treated as an actor in ANT meaning of the word. First and foremost, the construct in question influences human self-presentation. It also influences the manner in which a given person is treated by their social environment and institutions. ADHD diagnosis entails treatment with the use of strong pharmaceuticals, which seems to be a serious consequence. Most importantly, however, attention should be paid to the individual experience of the illness by the sick person – it appears to be mediated by a number of advocates, institutions, technologies and discursive practices.

Obviously, the practices described above stem from the conviction that ADHD as such exists. How can we refer, therefore, to the controversies we have reconstructed here? What can we do when a large number of people dispute the existence of this disorder, or at the very least – its etiology or diagnostic

measures? Do we not need to accept some ontological assumptions regarding ADHD when describing the controversies above? Do we not need to accept certain assumptions regarding social actors, and in particular, does there not exist the need to ascribe to them interests determining the standpoints they represent? By undertaking to analyse the controversy surrounding treatment, diagnosis and the status of ADHD we need not refer to ascribed interests, “sociology of error” or take on some notion about the objective status of reality, which specific actors represent to a lesser or greater degree of credibility. Instead of looking for a reference point in the form of objective world “out there”, we can be satisfied with describing what we capture with case studies, discourse analysis, ethnographical studies or other methods belonging to the field of social sciences.

Accessing an unmediated world, which would solve controversies, is impossible – we are always translating the world. Accepting such a position does not, however, mean subscribing to a kind of relativism or idealism that would make it impossible for us to make binding decisions and take practical action. After all, actors are always negotiating the hierarchy and credibility of translations, but they do so not so much in reference to the objective world, as in reference to numerous areas of socio-technological networks. ANT proposes not just a certain descriptive methodology, but it also points to ways in which inconclusiveness and ambiguity, which characterise expert opinions and scientific knowledge in late modernity, can be managed. Furthermore, ANT may constitute a point of departure for formulating practical recommendations.

It is usually conceded that objective reality should be the regulator of social action and the factor that solves controversies. The problem is that in the cases of controversies everybody claims to have objective reality “on their side.” As ANT demonstrates, the world does not constitute the reason for solving a conflict, but rather its result (Latour 1987: 60-61, 259) – the generally accepted model of the world reveals itself only as a result of the interweaving of heterogeneous factors and the closing of black boxes. Can then traditionally understood objective truth serve as a regulator of social activity? Of course many will refrain from giving a negative answer, formulating a question in its place: “What can ANT offer instead?”, “What else but scientific truth protects us from the attempts of interest groups striving to shape the discourse and knowledge according to their aims?” or “What else but the truth will let us take effective action?”

In order to answer this question we suggest referring to the question of democracy. Let us assume that the effectiveness of the democratic system is not dependent on the inexistence of particular interests striving to influence power. On the contrary, as new institutional economics suggests (Menard & Shirley [eds.] 2005), including the theory of public choice (Wilkin [ed.] 2005), the success of democracy rests precisely on the actions undertaken by indi-

viduals to fulfill their egoistic goals. On the one hand, this concerns politicians, whose egoistic interests, through various institutions, including elections and media control, become connected to the public interest – in order to gain profits, a politician must at least convince others that he is acting in the interests of wide social groups. This also concerns groups of interest attempting to shape institutional frameworks so as to gain the advantage in the games they play (economic, political, legal etc.). If striving to exert influence is universal and equally distributed among the actors, then, in summary, their egoistic goals may be compatible with effective allocation of resources, and – in other words – should result in a just and effective system. Problems such as political corruption or the distortions of market mechanisms typically arise only when the ability to influence state institutions is highly concentrated. States governed by concentrated interests more rarely undertake reforms which could improve the quality of governance and, at the same time, limit the distortions and restrictions within an economy which allows interest groups to draw private profits at the expense of public interest (Hellman & Kaufmann 2002). In other words, in the light of such an approach it is not the justness of opinions and interests of particular actors, their motivation or morality they are guided by that carries the primary importance, but the institutional context within which they function. This involves both regulations fighting monopolies (both in the economic and political context) and institutions of social control.

A similar manner of thinking can be used to manage research conflicts, including ones arising around disease definitions and treatments. Let us not focus on objective truth or methodological standards, which – as we have seen – cannot solve such scientific debates on their own. Let us instead worry about the institutional context of the controversy. This is not only about making it possible for varied interest groups referring to their own translations to be able to communicate without interruption. By no means are we suggesting that scientific truth should be subject to political vote, where the majority would decide about how the world is constructed. It is rather about establishing institutional mechanisms that would reveal the entanglements of knowledge we have described here. This is important because when knowledge is perceived as “entangled”, it does not immediately spread across discourse and social practice (as, significantly, the denial of knowledge regarding its social history constitutes an element of the process of closing a black box). Why should such processes be countered? ADHD exemplifies this well – a controversial, diagnostically ambiguous condition was allowed to gain institutional status. However, such knowledge is not innocent; the dominant definition of ADHD may generate a number of social harms (overdiagnosis, dangerous treatment, harmful social stigma). Moreover, mainstream scientists have largely lost control over the definition of the condition and even should they try to revise or undermine it now, it would be impossible due to process-

es related to its public representation and institutionalisation. ADHD has gained a life of its own.

Obviously, we are touching upon socially precarious questions – any subject connected to health is irritable and morally fortified. Both health and life constitute some of the most important values in our culture. But can referring to them ultimately enforce agreement within a conflict? After all, opponents, much as the proponents of the dominant paradigm, claim to be representing our interest where health is concerned. Moreover, they accuse their adversaries of acting against public health. It is important to mention that in key moments of the process of closing the black box of ADHD, there was no space for debating the issue – the disorder was publicly presented as an unproblematic object and quickly became a black box. What would have happened, however, had people known of alternative theories and treatments, financial entanglement of both sides (to mention just CHADD), about the failed attempts to confirm neurophysiological studies? Or, how would we begin to approach objects such as ADHD if we knew the mechanisms of producing scientific knowledge identified by ANT?

Of course, a number of innovations can be implemented in order to make it easier to reveal the network character of scientific objects percolating into the public action sphere. In practice, it would mean allowing currently marginalised critical voices into the mainstream debates. This is not to say that a parity would be created, but that channels should be left open for the articulation of criticism, and that the costs thereof should be lowered. Therefore, a system of discursive checks and balances is needed, which would either make it impossible to monopolise the space of influence that is the media, or at least make it too costly to be profitable²¹³. It is also necessary to reveal the techniques particular actors use in promoting their vision. Typically, actors strive to create a situation in which their message is broadcast by two or more actors considered independent of each other, which increases the credibility of a representation created in such a way. This is why pharmaceutical companies invest enormous resources in order for papers published by scientists they finance to appear in leading scientific journals and to occupy high positions in press discourse. One of the more frequent devices utilised by the companies is using the key opinion leaders representing academic environment, who are presented as independent experts in spite of actually being supported by the companies. This situation can be treated as a form of conflict of interest. A number of options exist to try to stop such situations. For example, there

²¹³ It is worth referring here to the issue of disease mongering. In theory, this phenomenon results from pharmaceutical multinationals' strategy to maximise their profits, as it is more profitable than creating medications for conditions that are already known and already considered dangerous. One can, then, imagine an institutional situation in which the costs of "disease marketing" would be such that a given company would not be ready to undertake them.

have long been attempts to make all medical experts involved in evaluating medications disclose their sources of funding. Such a regulation is, however, inefficient, as the amount of the donation is not disclosed. Therefore, an expert who was paid \$3000 for giving a paper at a conference is perceived in the same way as a researcher who regularly receives a yearly payment of \$200,000 from the same company. However, strong opposition exists protesting the introduction of such mechanisms to combat conflicts of interest. It is even debated whether the notion of the conflict of interests should be used in connection to financing research when it is more characteristic of the political arena.

Thus, we are approaching another fortification which in our society is the notion of objective truth itself. It is precisely scientific truth that the parties in conflicts use for cover when entangling us in philosophically and methodologically unsolvable conflicts. Through such an account we cease to take into consideration social costs of the changes consisting in introducing into circulation new medical categories or science objects in general. In light of the existing controversies surrounding diagnosis and etiology, is it sensible to restrict ourselves to dangerous pharmacological treatment? Would we have been so quick to agree to make Ritalin and similar substances the treatment of choice while simultaneously rejecting all alternatives if we were monitoring the strategies of promoting diseases and medicines used by pharmaceutical companies? Would we agree to that, knowing that stimulants do not cure but merely mask the disease or if we knew that they affect everyone in the same way? Finally, would we have agreed to the juridisation that constituted a system encouraging the ADHD diagnosis and often enforcing pharmaceutical treatment.

One of the possible alternatives is the consistent reference to relational ontology of ANT. In such a case by making a decision we do not merely depend on the representation of the world (its cohesiveness, the reliability of a translation etc.) but we must also take into consideration other factors. This, however, requires the reconfiguration of conditions within which the discourse functions. Obviously, we risk that the polyphony of voices will paralyse decision-making and practical action. However, does the alternative in the form of uncontrolled and hasty closing of black boxes seem sensible, taking into account the example of ADHD and the possibility that we are facing a way of treatment that is both ineffective and dangerous to health, in order to deal with a disease that may not be a disease at all? Are we ready to accept such a way of making decisions and the procedure of scientific innovation, considering the danger that is associated with it? We leave these doubts open for now. It seems, however, that ANT points to a direction that should be followed to deal with such controversies.

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