

Critiques of the 'ADHD' enterprise

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At first glance, the reality of 'Attention-Deficit/Hyperactivity Disorder' (ADD or ADHD) seems obvious. The world's 'psychiatric bible,' the *Diagnostic and Statistical Manual of Mental Disorders* (fourth edition) (DSM-IV, American Psychiatric Association 1994) describes the mental disorder ADHD in detail. The manual lists four distinct ADHD diagnoses that can be derived using combinations from among eighteen behavioral signs. According to the DSM-IV, ADHD is a discrete member of the class of 'Disruptive Behavior Disorders.' It is characterized by persistent inattention and/or hyperactivity/impulsivity occurring in several settings and more frequently and severely than adults judge to be typical for children at the same chronological stage of development. Symptoms are said to begin before age seven and to cause serious difficulties in home, school, or work life. Based on these and previous DSM criteria, approximately two dozen behavioral checklists are in use by teachers, parents, physicians, and other health, mental health, and social service professionals to assess or 'test for' ADHD – although no actual test of any sort besides a behavioral checklist establishes or confirms the diagnosis. Nonetheless, Russell Barkley (1998: 67), a leader in the field, gives the latest definition of ADHD as a 'developmental failure in the brain circuitry that underlies inhibition and self-control.'

Like many other medical-psychiatric-educational labels, the ADHD label gives meaning to countless activities and leaves large traces. It is applied to millions of children around the world and recorded in millions of computerized and paper records in government and insurance company data banks, in educational institutions of all types and sizes, doctors' offices, clinics and hospitals, residential treatment centers, and in courts.

To millions of modern families, the label provides a legitimate justification to 'outsource' some responsibilities related to raising children, a task whose objectives, rules, and methods have changed dramatically over the last half-century, along with the typical composition of families. Messages about ADHD destined for parents have strong guilt-dissolving, 'natural calamity' components, as in Consumer Reports' health website (MedicalGuide.org): 'Learning that your child has ADHD can be distressing. But ADHD is nobody's fault. Nothing you or your child has done has caused it.'

The ADHD label serves to justify the disbursement of substantial public and private funds (about \$3.5–4.0 billion annually by the end of the 1990s) to fund special services in schools in the United States (Hinshaw *et al.* 1999). The label also provides schools yet another alibi to explain why they regularly fail to make some children fit in the only societal institution designed exclusively for children.

The ADHD label spurs enormous research activities and programs: thousands of drug treatment studies and experimental pharmacology and neuroscience studies of ADHD have been published since the 1960s. Each month, about twenty articles related to ADHD appear in scientific journals internationally. Hundreds of investigators from the health and social sciences currently study the cognitive performances of children diagnosed with ADHD. As of this writing, clinical trials conducted at the National Institute of Mental Health in the US are recruiting participants for investigations in the genetics of ADHD, brain processes in ADHD, herbal treatments for ADHD, and preventive interventions for ADHD. Using the keyword 'ADHD' for a search in a famous US online bookstore in mid-2005 yielded over 4,800 hits.

Last but not least, the ADHD label fuels the manufacture, promotion, regulation, and prescription of a dozen psychotropic pharmaceuticals, such as Ritalin and Concerta (two brand names for methylphenidate), Adderall (a mixture of four amphetamine salts), and Strattera (a 'non-stimulant' norepineprine reuptake inhibitor) in a worldwide market estimated to exceed \$3 billion annually (CNS Drug Discoveries 2004). A parallel industry of herbal, natural, complementary, and other 'alternative' diagnostics and remedies for ADHD also flourishes.

Together, these and other social facts too numerous to list make ADHD as tangible as any condition can be. They are the social bodyguards of ADHD, surrounding and protecting its integrity as an actual discrete entity, as an abnormality or disorder of childhood development and functioning, or as a 'severe neurobehavioral disorder,' as ADHD is regularly described in popular and professional literature. These social facts serve to dissuade would-be critics from analyzing the concept ADHD too critically and from scrutinizing it logically, ethically, sociologically. Commenting solely on the number of monthly scientific publications related to ADHD, Barkley and colleagues (2004: 65) write that 'the genuineness of ADHD as a disorder appears to be alive, well, and on solid scientific ground . . . Any "debate" over the legitimacy of ADHD as a valid disorder exists only in some segments of the popular media, not in the scientific community.' Put another way, the myriad activities undertaken to manage ADHD in familial, educational, clinical, scientific, bureaucratic, and commercial systems constitute insurmountable evidence pointing to a single conclusion: ADHD exists!

Yet the very popularity of ADHD has given rise to accounts expressing great skepticism that so many children in our cognitively and educationally affluent societies should be afflicted with a disorder rarely if ever mentioned merely 25 years ago. Raising and teaching children is something about which everyone has an opinion, usually a firm opinion, and the idea of ADHD leaves few people neutral.

Every effort to cement ADHD into the social consciousness has been resisted or derided to some extent. The notion of ADHD as a disorder or disease of childhood evokes resistance because it defies the common twin beliefs that *all* children are hyperactive, impulsive, and inattentive and that adults' primary task is precisely to raise them to act differently (Oas 2001). Besides an undercurrent of lay resistance, some sociologists, psychologists, pediatricians, psychiatrists, and psychologists have vigorously questioned the existence of a genuine condition 'ADHD' in all its previous and actual definitions since the 1960s. Facing psychologist Russell Barkley's (1995: 17) claim that 'ADHD is real, a real disorder, a real problem, often a real obstacle' stands neurologist Fred Baughman's (1998) counterclaim that 'ADHD is total, 100% fraud.'

The US, epicenter of the ADHD enterprise, is also epicenter of critiques of the ADHD enterprise. In this chapter, I summarize ten arguments emanating from North American authors and researchers who show one fault or another with various assumptions or conclusions concerning ADHD – its nature, its manifestations, its recognition, and its treatment via medications.

Not all countries have embraced the ADHD construct. My selective reading of the scant and necessarily retrospective epidemiological evidence suggests that at present, the construct is well established in the US, Canada, Australia, New Zealand, Switzerland, Norway, Sweden, Denmark, the United Kingdom, Germany, Holland, Israel, Spain, and Taiwan. In parallel, great international disparities exist in the use of stimulants as treatments for ADHD. It is estimated that fully 97 percent of the global sales of drugs for ADHD were derived from the US only, the rest from Europe (CNS Drug Discoveries 2004). Notably, certain countries with high rates of adult psychiatric drug use, such as France and Italy, appear so far to have resisted using stimulants with children in any significant manner, although in both countries key medical and educational institutions and parents' groups are just beginning to promote them – and the ADHD construct – vigorously (Bonati, this volume; Cohen 2000; Saget 2003). Systematic explanations of these puzzling international differences are still lacking. Possibly, the 'reality' of ADHD might assume different forms in nations just beginning to embrace the construct. The present summary of critiques of ADHD constitutes a modest effort toward the goal of shaping such alternative realities.

So far, the diagnosis of ADHD and the prescription of stimulants are inseparable phenomena. Without historical analysis, it is difficult to ascertain which preceded which, but it is reasonable to argue that the diagnosis is frequently a *post hoc* justification for the use of stimulants (Cohen, this volume; Conrad 1976). The figures from England (i.e. not Scotland, Wales, or Northern Ireland) illustrate just how rapidly their use can flourish on virgin soil: from 6,000 prescriptions for stimulants in 1994 to 186,200 in 2000, to 458,200 in 2004 (Prescription Cost Analysis 2005). To my knowledge, this 7600 percent increase in one decade represents the fastest ever anywhere on record. Taking into account their respective populations, England in 2004 still used stimulants about five times less than the US, where about 13 million prescriptions were written in 2003. If recent growth

rates persist, however, there is every reason to expect England's rate of use to equal or exceed that of the US when this book appears in print.

The use of drugs increases the popularity of the ADHD label, which in turn reinforces the use of drugs and other interventions. Given the considerable short-term benefits that accrue from these practices to the influential mental health, educational, and drug industry communities, their members are likely to increase proclamations that those who question the validity of ADHD as a genuine disorder requiring lifelong treatment are flat-earthers.

The critiques included in this chapter were chosen mostly on the basis of their familiarity to this author; they do not represent the full spectrum of opposition and critical analysis (see, for example, Kiger 1985; Armstrong 1995; Maté 1999; Stein 1999; Timimi 2003). Broadly speaking, the critiques emanate from the fields of sociology, medicine (pediatrics, neurology, psychiatry), psychology, and clinical epidemiology. I have included authors who completely call into question the validity of the ADHD construct along with authors who appear to accept the construct while questioning how ADHD-diagnosed children are managed. Some critiques emphasize broad societal tendencies, others focus on methodological shortcomings of studies purporting to identify brain differences between ADHD and normal children. Most are scholarly critiques, in the sense that their authors have spent considerable time marshalling evidence and constructing logical arguments and submitting them to peer or public review. Together, these critiques represent what I believe is a compelling case for continuing critical examination of, and skepticism toward, the 'ADHD enterprise.'

ADHD as result of socio-cultural mutations

Medicalizing deviant and ordinary behavior

In *Medicalization of Deviance: From Badness to Sickness* (first edition 1980), sociologists Peter Conrad and Joseph Schneider argued that several socially problematic conducts formerly characterized as sins or crimes, such as homosexuality, excessive drinking, and suicide, had been or were in the process of being medicalized. Conrad and Schneider defined medicalization as defining or describing a socially deviant condition using medical terms, attributing a medical cause to it, or managing it with medical means such as hospitalization, drugs, or psychotherapy.

Conrad and Schneider hypothesized a series of sequential steps in the medicalization of deviance, from initial 'claims-staking' by early proponents to the final 'institutionalization' of the fully medicalized 'condition.' Interestingly, before publishing the complete theory of medicalization, Conrad's first case study of the phenomenon focused on what he termed the modern medical 'discovery' of hyperkinesis. Conrad (1976) argued that this discovery was built principally around the use of behavior-controlling drugs such as the stimulants.

In the intervening period since Conrad's study, and as reflected in American psychiatry's third edition of its *Diagnostic and Statistical Manual of Mental Disorders*

(American Psychiatric Association 1980), hyperkinesis eventually became 'Attention-Deficit/Hyperactivity Disorder,' to be defined using eighteen different behavioral signs. As some critics have pointed out, taken singly, these eighteen components of ADHD represent instances of *ordinary*, normal childhood behavior that would not be expected to cause distress or impairment to any individual manifesting them. With DSM-III, the actual diagnostic signs became a *frequency and combination* of signs.

Moreover, the continued extension of medical boundaries that theoretically characterizes medicalization appears in the emergence, in the mid-1990s, of the category of 'ADHD adults' (Hallowell and Ratey 1994). This grouping, arguably designating certain forms of adult incompetence and vocational failure, remarkably allows 'for the inclusion of an entire population of people and their problems that were excluded by the original conception of hyperactive children' (Conrad and Potter 2000: 559). Over the last few years in the US, the validity of 'adult ADD' has been promoted in skillfully crafted television commercials by Eli Lilly and Company, the manufacturers of Strattera (atomoxetine), a drug specifically marketed for adults with this 'treatable medical disorder'. Within a year of its launching in November 2003, Strattera had captured a full 15 percent of the ADHD market for drugs (Breitstein 2004).

Some of the first conceptions of medicalization (by psychiatrist Thomas Szasz, sociologist Irving Zola) viewed it as an inexorable consequence of the merging, on the one hand, of ancient tribal urges to scapegoat deviants with, on the other, imperatives of secularism, scientism, and technological progress. In later conceptions, analysts described how medicalization was being applied not only to the classic cases of deviance (alcoholism, suicide, homosexuality, insanity), but increasingly to ordinary, normal conditions of life (such as menopause, educational difficulties, incurring excessive debts by shopping, violence, homelessness, excessive gambling, racial prejudice) (Cohen 2001). Top-down scapegoating as motive for medicalization gave way to bottom-up, diffuse, subtle, citizen-inspired initiatives filling various needs in complex and fluid societies. More recent conceptions of the dynamics of medicalization have included the corporate nature of medicine, the individualization of risk via genetic theorizing, as well as other features of health care systems in advanced post-industrial societies (Clarke *et al.* 2003).

In all its versions, however, medicalization never implied conspiracies by medical professionals seeking to increase their power and influence. On the contrary, the original claims-makers in the medicalization process are usually non-medical professionals or laypersons. Throughout the periods that saw changing labels applied to the condition that concerns us here, such as 'hyperkinesis' and 'hyperactivity' (early 1970s), 'minimal brain damage' (late 1970s), 'attention-deficit disorder' (early 1980s) or 'attention-deficit/hyperactivity disorder' (late 1980s), teachers and educational psychologists appear as the pioneers of medicalization, at least in the US and Canada. In the UK, the reverse appears to have been true, with evidence suggesting that, initially, teachers typically resisted medicalization, rejected the label and refused to encourage the medicating of children (Malacrida 2004). In contrast,

in the case of 'ADHD adults,' long after the cementing of ADHD as a condition of childhood, the expanded diagnostic category received support from a broad combination of lay, professional, and media claims.

The last step in the medicalization process, termed 'institutionalization' by Conrad and Schneider (1980), consists in the now fully medicalized category being consecrated by most mainstream official and scientific instances. The existence of one or more bureaucracies devoted to perpetuating and expanding the boundaries of the category, and to actively suppressing alternative claims, illustrates institutionalization, which is where ADHD rests securely today in the handful of developed nations mentioned earlier. There exist degrees of medicalization, limits to medicalization, and some rare instances of demedicalization (Conrad 1992). However, by any indicator, medicalization of children's deviant and ordinary (but problematic-for-adults) behavior continues unabated.

Rapid-fire culture and rapid-fire consciousness

Psychologist and independent drug scholar Richard DeGrandpre proposed in *Ritalin Nation: Rapid-fire Culture and the Transformation of Human Consciousness* (1999) that the US suffers from being a 'hurried society.' DeGrandpre describes America as 'a nation strung out on excitement,' where 'the pleasures of slowness' have disappeared. As America increasingly sought to conquer excitement and speed, the pace of American life in all its dimensions accelerated and continues to accelerate. Further, this acceleration of culture has itself been accelerating. This is illustrated, among other things, by a bewildering proliferation of technologies designed with a single aim: to make people go through all activities of their life faster. DeGrandpre's characterization recalls descriptions of the acceleration of other tendencies in modern society, such as urbanization, or the accumulation of information and waste – where each change creates circumstances requiring faster change, the process seeming to feed on itself.

Illustrating the slogan 'The personal is political,' DeGrandpre links these supra-societal changes to individuals' internal states. He believes that 'as society goes faster, so do the rhythms of our own consciousness. This is especially true for children, who grow up in concert with the latest speed' (1998: 19). Cognitive and emotional adaptation to quickening pace, however, has produced an unexpected effect, one that evokes paradoxes resulting from societies' previous marches toward perceived utopias. DeGrandpre suggests that the 'transformation of human consciousness actually has the unanticipated effect of neutralizing its intended rewards. We pursue newness and change yet quickly come to experience these changes as no more stimulating than before.' In other words, 'We're not just moving through our lives faster; we're also acquiring a heightened need for speed' (1998: 24). DeGrandpre's thesis focuses not on the advent of technology *per se*; it emphasizes the impact of technology on our attention, awareness, desires, and frustrations.

Many children in the modern world are filled with sensory stimulation almost 24 hours a day. The least expensive source of stimulation, television, accounts for

most of it. Television watching, according to DeGrandpre, illustrates how easy it is even for adults to forfeit self-control (spending hours clicking a remote control device, from channel to boring channel) and succumb to a never-ending provider of effortless stimulation.

Young children suffer most from television because the more they watch it the less likely they are to develop other ways to occupy themselves, to develop other habits and other skills, such as dramatic play, reading, and physical activity (Eastman 2004). It is of course crucially important for children to learn these other habits and skills in order to control themselves. DeGrandpre's thesis recently received support from a longitudinal study of 1,300 pre-schoolers, where the number of hours of television watched daily at age 1 and 3 years was linearly associated to the likelihood of exhibiting attentional problems at age 7 years (when 10 percent of the sample exhibited such problems) (Christakis *et al.* 2004).

Here is how DeGrandpre summarizes the development of 'ADHD':

As rapid-fire culture gives rise to a rapid-fire consciousness – and, for children, an inability to regulate their own behavior – sensory addictions develop, motivating us to engage in more stimulus-seeking behaviors. At the heart of this developmental problem lies the emergence of a phenomenological experience of unsettledness, characterized by feelings of restlessness, anxiety, and impulsivity. Hyperactivity and the inability to attend to mundane activities exemplify the type of escape behavior that the 'sensory addicted' child or adult uses in order to maintain his or her needed stream of stimulation.

(1998: 32)

In sum, DeGrandpre describes what he believes to be a series of unique, late twentieth-century sensory addictions among Americans, some of which constitute what is labeled as ADHD. These addictions are at root cultural problems that have a way of becoming psychological ones and perhaps biological ones as well. A close variation of DeGrandpre's thesis, applied to the consumptive behaviors fostered in modern adults, is developed in a book with the telling title of *American Mania: When More is Not Enough* (Whybrow 2005).

The cult of performance – in a pill

In *Running on Ritalin: A Physician Reflects on Children, Society, and Performance in a Pill*, pediatrician Lawrence Diller (1998) discussed how the idea of enhancing normal performance became somewhat politically correct over the last two decades. Formerly, enhancing performance was only a preoccupation among elite athletes ('doping'), artists, or warriors. By the mid-1990s, however, enhancing performance had become planted within suburbia and the middle-class, fertilized in part by the Prozac-induced seduction of 'cosmetic psychopharmacology' (Kramer 1993). Cosmetic psychopharmacology, originally defined by psychiatrist Peter Kramer,

resembles the magic potion of fairy tales in that it refers to the possibility of changing one's inner emotional and cognitive states at will and harmlessly by means of modern psychotropic drugs.

According to Diller, one of the principal messages conveyed by American culture is that one should be successful and happy. In this culture, 'persistent difficulty, disappointment, and sadness are not acceptable parts of the human condition: rather, they are subversive enemies which we must defeat' (Diller 1998: 316). However, Diller also sees an 'emerging culture of disability' that seeks – despite the dominant 'cultural rejection of underperformance' – to normalize and to accept underperformance.

Despite increases in the use of psychiatric diagnosing and drug treatment of poor children and children from ethnic and racial minorities in the US (Breggin 1998; Zito *et al.* 2003), the use of stimulants in this country appeared to remain throughout the 1990s mostly a phenomenon of white, suburban, middle- and upper-middle-class children. According to Diller (1998: 317): 'It's in this slice of society, of course, that expectations run highest and anxieties about performance shortfalls lately have become acute. It's this group of parents who worry that their children's future may be jeopardized by not getting into the right preschool. Little wonder that they so often see the wisdom in Ritalin.'

Because of other cultural contradictions, however, such as the extraordinary prizing of individual achievement but the expectation of conformity, the desire for performance enhancement cannot be announced openly; it remains repressed, socially frowned upon. In the US, performance enhancement, in contrast to physical enhancement (via implants, surgery, hormones) still appears too much like gaining an unfair advantage over others who choose to 'play by the rules.' Craving legitimacy, the performance enhancers thus have little recourse but to assert ever more forcefully that ADHD is a genuine medical disorder or deficit like diabetes or poor vision, and that the regular use of stimulants is as *bona fide* a treatment for it as insulin maintenance or the wearing of eye glasses is legitimate for these latter disorders and deficits.

Some cultural trends change rapidly, and performance enhancement is becoming more socially acceptable as different rationales and justifications for uses of pharmaceuticals are voiced by consumers (Cohen *et al.* 2001). In many anecdotal accounts appearing on the Internet, and in my own contacts with families, parents often cite performance enhancement as the primary reason for continuing their children on stimulants: their children's grades have improved. Occasionally, in medical journals, academic performance enhancement is specifically stated, without comment, as the reason for prescription (Cohen and Leo 2002). It would seem that this justification of the use of stimulants – as short-term school performance enhancers for children – deserves open discussion rather than remain camouflaged behind the label of an ostensibly medical condition. If that were the case, parents and social actors would undoubtedly be in a better position to assess the merits and the drawbacks of enhancing educational performance with drugs (just as, for example, they are able to assess the strategy of physical punishment or that of token

rewards) on its *own* ethical, educational, and developmental terms, uncontaminated by medicalesque explanations and justifications.

Disorder? What disorder?

'Total, 100% fraud'

ADHD is regularly described, in medical literature, as a 'neurological,' 'neurobehavioral,' or 'neurodevelopmental' disorder or disease. Yet, pediatric neurologist Fred Baughman, Jr, has repeated, in a series of short articles, letters to the editors of medical publications, and commentaries in newspapers and on his website (www.adhdfrac.com), that the diagnosis of ADHD constitutes 'total, 100% fraud.' Baughman ceaselessly reminds his colleagues in unambiguous language that children diagnosed with ADHD have no detectable abnormality specific to that diagnosis.

According to Baughman, physicians learn in medical school that a fundamental difference distinguishes disease from non-disease. To diagnose disease, the physician must find confirmatory evidence in *each individual patient* of the physical abnormality or abnormalities that characterize the disease and that are described in the scientifically validated literature. Baughman likes to remind his audience that he is well qualified to pass these judgments as he himself has discovered a true disease, a rare birth defect – curly hair-anklyoblepharon (fused eyelids)-nail dysplasia syndrome – whose genetic origin he also later helped to discover and describe in publications. In contrast, no characteristic abnormality has yet been identified or validated for ADHD. As the DSM-IV (American Psychiatric Association 1994: 81) states in its description of ADHD, under the heading 'Associated Laboratory Findings,' 'There are no laboratory tests that have been established as diagnostic in the clinical assessment of Attention-Deficit/Hyperactivity Disorder.' Hence, physicians cannot and do not detect any abnormality in their patients during their patients' life – or after death, at autopsy, as with most physical diseases – that can be reliably associated with the diagnosis of ADHD.

Nevertheless, Baughman charges, physicians routinely violate scientific and ethical tenets of medicine by diagnosing individuals as suffering from a disease called ADHD and by prescribing potentially toxic drugs to these individuals. The scientific misconduct lies in diagnosing disease in the absence of any confirmatory evidence of disease. The ethical misconduct lies in not informing parents or patients of this fact while obtaining their 'informed consent' to receive a 'treatment.'

Baughman ceaselessly emphasizes that children diagnosed ADHD must be considered *physically normal*: 'It is as simple as this: if no physical examination, lab test, X-ray, scan or biopsy shows an abnormality in your child, [your child is] normal.' Baughman cautions, however, that 'Once Ritalin or any other psychiatric drug courses through their system, day-in and day-out, [children] are no longer physically normal.' Baughman can be even more categorical: 'The Nuremberg

Code does not allow the abrogation of informed consent (*de facto* medical malpractice) or the drugging of normal, disease-free, children. We are not mis-diagnosing or over-diagnosing, mis-treating or over-treating ADHD. It has been a total, 100% fraud throughout its [*sic*] 35 year history.'

Baughman's singular emphasis on the absence of demonstrated physical abnormalities makes him a true adherent, rather than an opponent, of the 'medical model.' His argument resembles a major thesis of Thomas Szasz, the iconoclastic psychiatrist who has also argued for several decades that, absent confirmatory evidence of physical etiopathology, 'problems in living,' no matter how troublesome and painful, must remain just that (Szasz 2001). Baughman's argument could be extended from ADHD to most of the hundreds of diagnoses in the DSM. Indeed, are not all psychiatric conditions (certain dementias and substance-abuse problems excepted) diagnosed in the absence of any laboratory tests, by simply 'eyeballing' and talking with the ostensible patient? Baughman's argument is completely inassailable on the facts but will remain marginalized until laypersons and professionals are ready to re-evaluate physicians' 'unique expertise' in the diagnosis of *all* problems in living.

'ADHD' as annoying behavior

Throughout the 1980s and 1990s, psychiatrist Peter Breggin has been the leading critic of biological psychiatry. He is the most prolific and outspoken detractor of the concept of ADHD, its diagnosis, and its drug treatment, and has authored four books specifically dealing with ADHD, children, and psychiatry.

In a popular book on stimulants, Breggin succinctly expresses the idea that the DSM diagnosis of ADHD simply *cannot* have any validity as a label for a genuine biological dysfunction. In his view, 'The very nature of the ADHD diagnosis renders absurd the idea of finding a common biological or genetic basis. The ADHD diagnosis is nothing more than a list of all the behaviors that annoy teachers and require extra attention in the classroom.' He illustrates: 'Key items in the diagnosis such as "often fidgets with hands or feet or squirms in seat," "often leaves seat in classroom," "often blurts out answers," and "often has difficulty waiting turn" have in common that they make life more difficult for teachers and other adults trying to manage groups of children' (2002: 126). Breggin thus radically contextualizes the criteria for the ADHD diagnosis: the behaviors are normal and have no meaning outside of the structured, regimented demands of a typical classroom. The only difference between these behaviors exhibited by normal children and by 'ADHD' children, as the DSM-IV recognizes, is found in the word 'often.' Breggin's argument suggests we ask simply: What sort of biological cause would know the difference between 'normal' and 'often' before a given teacher, in a given classroom, or in a given culture?

The DSM-IV states that 'Signs of the disorder may be minimal or absent when the person is under strict control, is in a novel setting, is engaged in especially interesting activities, is in a one-to-one situation (e.g. in the clinician's office),

or while the person experiences frequent rewards for appropriate behaviors' (American Psychiatric Association 1994: 79). Breggin (1999: 230) seizes upon this statement to remark: 'This extraordinary admission indicates that ADHD is a 'disorder' quite unlike other disorders. It *disappears* when the child gets proper attention. Multiple sclerosis, cerebral palsy, genetic mental retardation, and other genuine neurological disorders would not so readily disappear under improved environmental circumstances.'

Ignoring, yet pathologizing, temperament

William Carey, Clinical Professor of Pediatrics at the University of Pennsylvania, earned his principal reputation for his studies of children's temperament (e.g. Carey 1985, 1992) and co-authored a popular book on the subject for parents and teachers (Carey and Jablow 1997). For Carey, temperament can be divided into at least nine dimensions, including activity, adaptability, distractibility, initial reaction, intensity, mood, persistence/attention span, regularity, and sensitivity. Carey believes that about half of temperament is of genetic origin and may be resistant to change, and the other half is fully malleable by the environment. Though it is more difficult to measure as a child ages, temperament, Carey holds, becomes more stable and remains a key factor influencing the quality of child-adult relationships.

In his presentation at the 1998 US National Institutes of Health Consensus Conference on ADHD and its treatment, Carey argued that ADHD represents nothing more – or less – than normal variation of temperament, but that professionals ignore the issue of temperament when discussing ADHD:

My concern with the problem of ADHD was sparked by the abundant evidence that behavioral scientists and practitioners have, in distressing numbers, failed to recognize the existence and importance of temperamental variations. Common patterns in professional thinking have been to ignore, trivialize, or pathologize temperament. DSM-IV does not even mention it.

(Carey 2002: 4)

First, Carey argues that the DSM-IV,

which makes the diagnosis when a certain number of troublesome behaviors are present (and other criteria met), overlooks that these behaviors are probably usually normal . . . temperamental traits that lead to dysfunction not by their total numbers but when any number of them generates dissonant interactions between the child and his/her incompatible setting.

(Ibid.: 5–6)

Second, Carey emphasizes the absence of clear evidence that symptoms of ADHD are related to brain malfunction. He raises the point, made in previous publications

(e.g. Carey 1992), that different but normal temperamental differences can be shown to have a genetic basis as well as biochemical correlates. He finds that 'the assumption of brain malfunction in inattentive, active school children suffers from too narrow an evolutionary and anthropological perspective of what is normal in human brain function' (ibid.: 11).

Third, Carey criticizes the neglect of the role of the environment and interactions with it as factors in causing the 'symptoms' to appear: 'The whole body of the temperament research of the last 30 years [concur that] . . . the outcome of children with "difficult" temperament depends on whether the parents and other essential elements of the environment provide a harmonious fit or one that generates excessive conflict and stress . . .' (ibid.: 7).

Finally, Carey observes that the widely used ADHD diagnostic questionnaires are highly subjective and impressionistic. 'Their items are phrased such as "talks too much", "often fidgets", and "messy work". The rater is not advised how much is too much, how much motion and how often under what circumstances constitutes fidgetiness, and so on' (2002: 8). Carey believes that these questionnaires 'should be regarded as no more than the perceptions and discomforts of parents and teachers' (ibid.: 9). This view has recently received empirical support in a study by Barnes *et al.* (2003). In a large urban university, 115 students filled out a questionnaire using language similar to that found in widely used ADHD rating scales. Subjects were asked to judge just how frequently a behavior needs to occur before it should be rated as 'often.' Barnes and colleagues' results show that individuals are consistent with themselves in their view of 'often,' but that this view varies considerably from individual to individual. This suggests that when applied to individual children, ADHD behavior rating scales may not have much validity.

A good summary of Carey's position may be found in the following passage:

What appears to be going on with most children being diagnosed with ADHD today is normal variations, especially of temperament, in neurologically intact individuals, especially low adaptability and low persistence/attention span . . . The dysfunction appears to be in the interaction between child and environment, both of which may be normal but incompatible with each other. . . . That does not mean, however, that there is an underlying disorder in the child.

(2002: 13)

Confusing symptoms with cause

Neurologist and psychiatrist Sidney Walker III attempts to distinguish the symptoms of a disease from the cause of the disease. In a book entitled *The Hyperactivity Hoax* (1998), Walker charges that physicians today diagnose ADHD and prescribe treatments without engaging in differential diagnosis, that is, without seeking to determine whether known medical problems might explain the presenting problems (the 'symptoms'). Merely checking a list of symptoms and naming a child

as 'hyperactive' or 'inattentive' *explains* nothing. Walker believes that "The unanswered question, obviously, is, "What is causing your child to be hyperactive?" Or, "What is causing your child to have attention problems?" According to Walker:

It's a critical question. Children with early-stage brain tumors can develop symptoms of hyperactivity or poor attention. So can lead- or pesticide-poisoned children. So can children with early-onset diabetes, heart disease, worms, viral or bacterial infections, malnutrition, head injuries, genetic disorders, allergies, mercury or manganese exposure, petit mal seizures, and hundreds – yes, *hundreds* – of other minor, major, or even life-threatening medical problems. Yet, all of these children are labeled hyperactive or ADD. (1998: 6)

In a manner reminiscent of Fred Baughman, the other neurologist critic in this group, Walker continues:

Furthermore, hundreds of thousands of *perfectly normal* children are labeled hyperactive or attention disordered, though there's nothing at all wrong with them. These children are lumped in with the truly ill children . . . and all are medicated willy-nilly with potent and dangerous drugs. (Ibid.: 6–7)

This occurs, according to Walker, because physicians have recently been taught to believe that the *symptoms* of hyperactivity and inattention are signs of a genuine disease. Believing that they have identified the genuine cause, when they have merely confounded symptoms with the cause, physicians usually go no further in their 15-minute examination than a cursory exploration of eye or vision problems.

Squarely conforming to the tradition of clinical medicine, Walker argues that symptoms never explain themselves (Taylor 2000). Relying merely on symptom presentation to conclude something about the nature of a disorder is a profound fallacy, as countless different diseases share symptoms. The task of the clinician is that of the detective: to ferret out the cause of the symptoms. Yet, lip service to 'differential diagnosis' and to 'ruling out organic causes' aside, the majority of ADHD diagnoses are posed when clinicians merely establish that various informants agree that a certain number of symptoms are present.

Brain abnormality in ADHD: genuine or artifact?

The website of Children and Adults with Attention-Deficit Disorder (CHADD), an international ADHD lobby group that receives significant funding from the pharmaceutical industry and collaborates with the Center for Disease Control to disseminate information about ADHD, defines ADHD as a 'severe neurobiological disorder.' Such a disorder would be expected to leave observable traces in the central nervous system of affected individuals, and this expectation is just what

guides studies of ADHD patients using modern neuroimaging technology such as MRI and PET scanning (which images the functioning of the brain non-invasively). Pictures of such scans, showing a 'normal' brain and an 'ADHD brain' (really, a composite of many pictures of brains) clearly distinguished by different colors, spots, and shadows, have appeared in numerous professional and popular publications.

Although no one can tell apart, on the basis of a brain scan, the brain of a normal person from the brain of an ADHD-diagnosed person, and although neuroimaging has no place in the diagnosis of ADHD – as it would if it identified valid biological markers of ADHD – a review of over 30 neuroimaging studies by Giedd and colleagues (2001) concluded: "Taken together, the results of the imaging and neuropsychological studies suggest right frontal-striatal circuitry involvement in ADHD with a modulating influence from the cerebellum" (2001: 44). In their review, however, Giedd *et al.* did not provide information on a crucial question: were the ADHD subjects in these neuroimaging studies medicated?

This is a crucial question because an astronomical number of studies show that psychotropic medications impact the brain, alter its function and structure, and are more likely to do so in younger subjects with developing brains than older subjects. Studies of Ritalin in humans show that it induces large volume changes in dopamine in brain regions within one hour of ingestion (Volkow *et al.* 2002). In rodents, early drug administration leads to about 50 percent less dopamine receptors by adulthood, long after termination of the drug (Moll *et al.* 2001). Thus, having ADHD subjects on stimulants for varying durations and then scanning their brain is a truly confounding factor in brain-imaging research. If some subtle abnormality is detected in the ADHD subjects but not in the control subjects, how can we rule out the influence of the drugs?

When neurological scientist Jonathan Leo and I examined all the studies included in Giedd *et al.*'s review (Leo and Cohen 2003) we were astounded to find that most subjects in the ADHD groups were on medication or had been medicated prior to the scans, though this issue was rarely discussed by the investigators. For example, in fourteen studies that used MRI, three studies gave no information on medication status. The remaining eleven studies involved 259 patients and 271 controls, with 247 (95 percent) of patients having prior or current medication use. In only two reports was this issue actually discussed, but neither devoted more than two sentences to it. Our findings were similar for other types and more recent brain-imaging studies (Cohen and Leo 2004).

Then appeared a major study, funded by the NIMH and conducted by Castellanos and colleagues (2002), that finally did what no other study had done before: not only was it huge (291 participants), not only did it last ten years, but one-third of the ADHD children had never received medication. Here, finally, was the opportunity to compare medicated with unmedicated ADHD patients. The findings, widely reported, were to the effect that the brains of ADHD children were about 3–5 percent smaller compared to those of controls. The important question: What about the brains of the *unmedicated* ADHD children? Castellanos reported that they were smaller too. But when Leo and I analyzed the study, we found that

the unmedicated patients were on average 2.5 years younger, were shorter, and were lighter than the medicated patients. These age, height, and weight differences could in themselves entirely explain any observed difference: think of an average 8-year-old and an average 11-year-old; the older child is likely to have a slightly larger brain, a 3–5 percent larger brain . . . Until the Castellanos study, brain-imaging studies using ADHD patient groups were flawed in almost every study, as they used mostly medicated patients. With the Castellanos study, the *control* group was inappropriate. In any case, one US newspaper, the *Detroit News*, announced the results of Castellanos' study on December 12, 2002 with the following headline: 'Ritalin is safe, and it works: Study finds it actually helps brain grow.'

Treatment? What treatment?

Confusing adverse drug reactions with behavioral improvement

Psychiatrist Peter Breggin's second distinctive contribution to critiques of the ADHD enterprise may be found in his conclusions concerning the effects of stimulant drugs on human and animal behavior. Breggin has provided a forceful explanation for the perceived 'effectiveness' of stimulants to reduce overactivity and inattention, or to increase 'on-task' behavior and 'focusing.' This explanation is consistent with the 'brain-disabling' hypothesis that Breggin has formulated in earlier publications.

Breggin has emphasized that a large body of animal literature points to two basic and closely related behavioral effects of stimulant drugs:

First, *stimulants suppress normal spontaneous or self-generated activity, including socialization* [references omitted]. Exploration, novelty seeking, curiosity, purposeful locomotion, and escape behaviors are diminished. Inhibitions in socialization are demonstrated by reductions in approach behavior, interactions, mutual grooming, and vocalizations. . . . Second, *stimulants promote stereotyped, obsessive/compulsive, overly focused behaviors that are often repetitive or meaningless* [references omitted]. The effects may be demonstrated by limited or constricted pacing, reduced or localized self-grooming, staring out of the cage, staring at small objects, repetitive head movements, and other compulsive behaviors, such as picking, scratching, gnawing, or licking limited areas of the body or objects.

(1999: 222, italics in original)

Breggin's next step is to propose that these expressions of what he calls the 'continuum of stimulant-induced toxicity' represent precisely what is misperceived as 'improvements in the behavior of children diagnosed as ADHD. That is, they can be potentially misinterpreted as "beneficial"' (ibid.: 225). In other words, drug-induced suppression of spontaneous behavior and drug-induced enforcement of obsessive physical and cognitive behavior are adverse drug reactions (ADRs), easily

recognizable in animal research as deviations from normal, spontaneous motor and social behavior. In settings requiring conformity from children, however, these same effects appear as:

increased willingness of children to do school work and chores that they would ordinarily find boring, meaningless, or frustrating. By struggling compulsively over their work, they may have seemed to be learning, even when they are not. . . . 'Social Withdrawal ADRs' describes drug reactions that render children more quiet, less seemingly needy, and less troublesome. . . . 'Behaviorally Suppressive ADRs' includes behaviors related to enforced compliance, submissiveness, and apathy. If the children are 'out of control' due to improper discipline, boredom, or other psychological and social problems, their behavior will nonetheless be suppressed so that they appear 'more normal.'

(Ibid.: 227–228)

Just as stimulant-induced behavioral changes occur in healthy animals, stimulant effects on humans are independent of any psychiatric diagnosis or disorder: 'They represent a specific drug effect on all children [references omitted]. Whether or not children seem to be overactive, impulsive, or distractible, psychostimulants will subdue these behaviors' (ibid.: 225).

Treatment studies: low-quality, short-term effects only

In 1999, the US Agency for Health Care Policy and Research (AHCPR) reached a sobering conclusion regarding trials of treatments for attention-deficit/hyperactivity disorder (ADHD). Among hundreds of treatment studies, researchers selected 92 so-called 'gold standard' randomized controlled trials (RCTs). These are studies where subjects diagnosed with ADHD were randomly assigned to receive either a treatment (mostly stimulants) or a placebo, and where subjects and investigators were expected to be blind about treatment status. The reviewers for the AHCPR found that 'Most studies did not clearly describe clinically important information such as the primary outcomes of interest . . . The small sample size of most studies limited their power to detect meaningful clinically important differences among the interventions' (1999: 3). In addition, 97 percent of the studies did not describe how subjects were randomized, 95 percent did not describe how investigators were kept blind about the patients' treatment status, and 87 percent gave no details on dropouts and reasons for dropouts in each treatment group. These methodological failings, of course, indicate poor-quality studies, because they prevent us from ruling out alternative explanations for any reported positive effects of treatments.

Schachter and colleagues (2001) also conducted a meta-analysis of 62 carefully selected RCTs of short-acting Ritalin as a treatment for ADHD. Their observations match those of the AHCPR, with the additional detail that *less than half of the trials*

lasted more than 10 days, and average duration was three weeks. This extremely short duration would prevent observers from making valid judgments about longer-term effects of stimulants, which are often prescribed for months and years. Only seven studies had more than 80 subjects in total. Interestingly, although Schachter *et al.* (2001) found a statistically significant clinical effect for Ritalin in the short-term treatment of ADHD diagnosed youth, they concluded that this effect was not robust concerning efficacy on 'core ADD features.'

These two meta-analyses identify methodological failings that suggest one conclusion: from a scientific point of view, most positive effects attributed to ADHD treatments are exaggerated. Unless a study meets certain basic criteria, which include the detailed description of methodological procedures, it may be considered a low-quality study. Low-quality studies have been shown regularly to overestimate the effects of treatments (Khan *et al.* 1996). That is why precisely why reviewers pay special attention to the methodological failings identified above. The more a study deviates from the ideal conduct and reporting of an RCT, the less confidence one can have in its findings.

What about longer-term studies of treatments for ADHD? The only significant review of long-term studies was conducted by Schachar and colleagues (2002). Searching exhaustively in the entire known medical literature, these investigators were able to locate only fourteen controlled studies lasting longer than three months. Because so few of the studies were of high quality, and because the outcome measures differed so much from study to study, Schachar and colleagues were unable to conduct a meta-analysis, relying instead of a detailed qualitative analysis. Altogether, the fourteen studies involved 1379 participants, with 549 (42 percent) coming from a single study, the Multi-Modal Treatment Study of ADHD (MTA). Four studies had less than ten subjects per group. Only three studies exceeded one year. It is extraordinary that more than three decades after millions of children had been medicated with stimulants, only three treatment studies following children for more than one year had been published.

Quality-wise, the studies were quite poor: thirteen of fourteen did not describe the method of randomization, nor the primary outcome of interest; nine of thirteen did not describe how the blind was protected, and poorly described dropouts and withdrawals. In the largest study, the MTA, the raters for the primary outcomes, parents and teachers, were not blind to the children's treatment status. This would prevent one from ruling out the potential confounding of raters' expectations on the ratings.

Of the fourteen studies, only six tested stimulants compared to placebo. Methylphenidate or dextroamphetamine was superior to placebo in reducing ADHD symptoms in four studies, but did not exceed placebo in two. Seven studies measured academic performance but only three reported a slight effect favoring drugs. Schachar and colleagues concluded: there is 'little evidence that stimulants improve academic attainment, even after as long as 1 year of treatment' (2002: 346). Nine studies measured social behavior and aggressivity: there, six studies showed an effect – consistent with Breggin's interpretation of the classic effects of the 'continuum of

stimulant-induced neurotoxicity' (see earlier). Five studies examined 'internalizing symptoms' such as sadness, crying, self-esteem: only two studies reported improvement in self-esteem. Schachar and colleagues (2002) conclude: 'Rigorous treatment research among representative sample of ADHD individuals is needed.' It is worth mentioning here that neither the AHCPR nor the authors of the analyses just summarized give any indication of believing that the ADHD label is not valid – on the contrary, they make several assertions indicating otherwise.

Many authors have discussed why clinical studies of psychiatric drugs, whether they be antipsychotics (Thornley and Adams 1998), antidepressants (Kirsch *et al.* 2002; Jureidini *et al.* 2004), or as we have shown here, stimulants, consistently demonstrate serious methodological failings. This body of evidence thus cannot confidently be used to guide social policy on such a wide scale as these drugs are used today. The principal reasons for the 'debasement' of the clinical trial over the last 50 years involve conflicts of interests between commercial and scientific imperatives, the inappropriate involvement of product sponsors into the clinical trial enterprise, and publication bias or the use of various methods to censor and suppress findings reflecting negatively on a product (review by Cohen 2005). Overall, this line of argument – which so far has been taken seriously only with respect to the recent research involving antidepressants for children (Medawar and Hardon 2004) – suggests strongly that the practice of medicating children with stimulants is not as evidence-tested as many people believe or want to believe.

Conclusion

This selective review suggests that contemporary critiques of the ADHD enterprise differ in their meanings and conclusions. Some critics, like Baughman and Breggin, completely reject the concept of ADHD and the idea that children need to be treated for 'it.' Others, like Carey, Diller, and DeGrandpre, appear to believe that a narrowed ADHD concept may have some descriptive utility but that dominant educational and treatment practices have vastly outpaced any legitimate significance of such a concept. Still others, like Schachter and Schachar, reviewers of the drug treatment studies, fully accept the validity of ADHD but lament that the quality of most treatment studies means that clinicians who prescribe drugs are still basically shooting in the dark.

The diagnosis of ADHD and the drug Ritalin marked the beginning of the full-scale psychiatric colonization of childhood. Today, not only ADHD, but the whole range of psychiatric labels – including as of this writing, the fastest-growing one for children, bipolar disorder – are now applied to children, some of whom are barely old enough to talk. Not only stimulants, but the full panoply of psychiatric drugs – antidepressants, anticonvulsants, antipsychotics, and tranquilizers – are now given to children, some of whom have just learned to walk.

It is difficult, if not impossible, to find historical precedents for medically sanctioned mass drugging of youth to alter their behavior or improve their performance. Never before have we labeled as biologically and cognitively defective

such a large proportion of children. If previous large-scale but controversial social experiments involving children serve as guides, the most important consequences of the ADHD experiment will probably be unanticipated, and will probably leave our successors shaking their heads at the delusions that animated their mental-health imbued predecessors. One of these notable large-scale social experiments was that of child labor in the West from the eighteenth to the early twentieth century. Child labor in factories revealed that our dreams of an ideal industrial society led to endangering the health and lives of children. At least on the surface, identifying and suppressing deviance, dissent, and distress in children with medical labels and drugs seem part of a utopic quest for the ideal performance society. It is appropriate, therefore, to focus on the limitations of the ADHD enterprise and to ask what will be its cost.

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