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# The First Hyperactive Children: The Rise of ADHD in Historical Perspective

*Matthew Smith*

Who was the first hyperactive child? Some might argue that overactive, impulsive, and inattentive behavior has always been associated with childhood. Moreover, presented differently, these attributes can be seen as essential to raising children who are open-minded, curious about the world, eager to learn and experience new things, and willing to challenge convention. Personified in characters from children's literature ranging from Mark Twain's Tom Sawyer and Huckleberry Finn to L. M. Montgomery's Anne Shirley and Astrid Lindgren's Pippi Longstocking, hyperactivity is central to these protagonists' heroism, leadership, and problem-solving abilities.<sup>1</sup> Far from being dysfunctional, it is presented as a useful, even essential, characteristic in overcoming adversity. Indeed, up until the 1950s, psychiatrists were more concerned with the opposite type of children: shy, withdrawn, introverted, and inactive types who were happier inside reading a book than roughhousing outside with their friends.<sup>2</sup> In *The Adventures of Tom Sawyer*, this sort of child was represented by a German student who suffered a breakdown after memorizing the bible in order to win the apparently superfluous prize of 'a plainly bound bible'. The German boy 'recited three thousand verses without stopping; but the strain upon his mental faculties was too great, and he was little better than an idiot from that day forth – a grievous misfortune for the school'.<sup>3</sup>

Since the late 1950s, however, attitudes towards hyperactivity have changed markedly, beginning with the US, where the first pathologically hyperactive child undoubtedly lived, and then eventually throughout much of the world. No longer seen as advantageous, hyperactivity took on distinctly negative connotations, referring to clinical symptoms which interfered with the attainment of academic achievement, symptoms so serious that they justified prescribing powerful stimulants, such as Ritalin

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<sup>1</sup> A. Applebaum, 'The ADHD-ventures of Tom Sawyer', *Slate*, August 9, 2010, <http://www.slate.com/id/2263340/>, viewed on 21 April, 2014.

<sup>2</sup> A.V. Keliher, 'You, the Psychologist and the Child', *Grade Teacher* 74 (1956-1957) 143.

<sup>3</sup> M. Twain, *The Adventures of Tom Sawyer*, <http://www.gutenberg.org/files/74/74-h/74-h.htm>, viewed on 21 April, 2014.

(methylphenidate). Now referred to as Attention Deficit Hyperactivity Disorder (ADHD),<sup>4</sup> hyperactivity is the world's most common childhood psychiatric disorder, believed to affect over five percent of the school-aged population, according to estimates.<sup>5</sup>

So, why did hyperactivity transform from normal childhood behavior to a serious psychiatric condition? I approach this question from two distinct perspectives that, when viewed together, indicate not only how historical analysis can explain the rise of mental disorders, but also help to improve current understandings and clinical practice. I begin by sketching out the American social context of the late-1950s, when concerns about hyperactivity first escalated. Profound geopolitical, educational, demographic, vocational, medical, and technological changes to the American landscape provided a fertile soil in which the notion of hyperactivity could take root and propagate. In this way, hyperactivity must be understood as a social construction, a reflection of the times and society in which it emerged. But there have also been significant changes in the lives of children during past decades that increased children's hyperactivity in a very real sense. As such, the second half of the essay discusses the nutritional, environmental, and cultural changes that also help to explain the upsurge in this most controversial of childhood disorders.

### **Smoking out and stimulating underachievers**

Hyperactivity can be seen as having existed on a continuum that has stretched from quite normal, if somewhat irritating, behavior, to serious, disturbing behavior that has rightly justified medical intervention.<sup>6</sup> Where societies have drawn the line on this continuum has been central to whether or not hyperactivity has been seen as rare or common. Prior to the 1950s,

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<sup>4</sup> Since so many terms for what is now called ADHD have been utilized since the late-1950s, I will use the more generic, historically consistent, and universally understood term hyperactivity instead. For more on the historical development of such terms, see: M. Smith, *Hyperactive: The Controversial History of ADHD* (London 2012) 20-22.

<sup>5</sup> G. Polanczyk e.a., 'The Worldwide Prevalence of ADHD: A Systematic Review and Metaregression Analysis', *American Journal of Psychiatry* 164 (2007) 942-948.

<sup>6</sup> This idea of a continuum or spectrum has been made more explicit in other psychiatric disorders, most notably, autistic spectrum disorder.

this line was placed conservatively, limiting the number of children who would be defined as hyperactive. Although the earlier observations of physicians such as Thomas Clouston (1840-1915), George Still (1868-1941), Charles Bradley (1902-1979), and others are often heralded as evidence of hyperactivity's essential and universal nature,<sup>7</sup> analysis of their accounts reveals that their patients' symptoms were much more serious than those diagnosed with the disorder in recent times.<sup>8</sup> Patients suffering from post-encephalitic disorder during the 1920s, for instance, have often been linked to hyperactivity, but close examination of these cases indicates that their symptoms, including extreme violence, suicide, depression, convulsions, narcolepsy, dizziness, headaches, and visual disturbance, differed substantially from those of today's hyperactive children.<sup>9</sup> Furthermore, Clouston and Still believed that hyperactive children were quite rare; the fact that Bradley's patients were institutionalized at his Rhode Island asylum (Bradley Home) also highlights their exceptionality. During this period, hyperactivity was also closely associated with brain injury caused by infections and organic brain damage, so much so that the term 'minimal brain damage' was often used to describe such cases.<sup>10</sup>

In 1957, however, the line between normal and abnormal hyperactivity shifted considerably, for two distinct reasons. The first was the coining of a new term by psychiatrists Maurice Laufer and Eric Denhoff,

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<sup>7</sup> For more on how hyperactivity has been seen as 'essential' and 'universal', see: S. Timimi and B. Maitra, 'ADHD and Globalization', in: S. Timimi and J. Leo eds., *Rethinking ADHD: From Brain to Culture* (Basingstoke, 2009) 198-218: 203-204.

<sup>8</sup> G.F. Still, 'The Goulstonian Lectures on Some Abnormal Psychological Conditions in Children', *Lancet* 159 (1902) 1008-1012, 1077-1082, 1163-1168; T.S. Clouston, 'Stages of Overexcitability, Hypersensitiveness and Mental Explosiveness and their Treatment by the Bromides', *Scottish Medical and Surgical Journal* 4 (1899) 481-490; C. Bradley, 'The Behavior of Children Receiving Benzedrine', *American Journal of Psychiatry* 94, (1937) 577-585; R. Barkley, *ADHD and the Nature of Self Control* (New York 1997); Smith, *Hyperactive*, 23-45.

<sup>9</sup> F.G. Ebaugh, 'Neuropsychiatric Sequelae of Acute Epidemic Encephalitis in Children', *American Journal of Diseases of Children* 25 (1923) 89-97; A. Lakoff, 'Adaptive Will: The Evolution of Attention Deficit Disorder', *Journal of the History of the Behavioral Sciences* 36 (2000) 149-169.

<sup>10</sup> E. Kahn and L. Cohen, 'Organic Drivenness: A Brain-Stem Syndrome and an Experience with Case Reports', *New England Journal of Medicine* 210 (1934) 748-756; A.A. Strauss and H. Werner, 'Disorders of Conceptual Thinking in the Brain-Injured Child', *Journal of Nervous and Mental Disease* 96 (1942) 153-172.

who worked at Bradley Home.<sup>11</sup> Unlike previous conceptualizations, ‘hyperkinetic impulse disorder’ was applicable to far more children, with Laufer and Denhoff stating ‘that the characteristics which have been described are to some extent normally found in the course of development of children. That is, as compared with adults, children are hyperkinetic, have short attention span and poor powers of concentration, and are impulsive’.<sup>12</sup> The symptoms associated with the new disorder, including ‘hyperactivity; short attention span and poor powers of concentration; irritability; impulsiveness; variability [of behaviour and school performance]; and poor school work’, were also linked explicitly with academic performance.<sup>13</sup> Finally, while Laufer and Denhoff noted that approximately a third of their patients had a history of brain trauma, most did not. This observation contributed to the downfall of the term minimal brain damage, which was replaced by the vaguer term ‘minimal brain dysfunction’. Although their term did not endure, there are only minor differences between Laufer and Denhoff’s conception, description, and understanding of hyperkinetic impulse disorder in 1957 and what is believed about ADHD today.<sup>14</sup>

The second 1957 development was the Soviet launch of *Sputnik*. Although the rapid development of the Soviet nuclear program might have served as a premonition, the orbiting satellites indicated to American politicians, educators, and scientists that they were no longer winning the Cold War ‘brain race’ for scientific prowess.<sup>15</sup> Who was to blame for this worrying development? Most fingers pointed at the American education system and, specifically, American children, whose ‘Dennis-the-Menace’ personalities were thought to contrast enormously with the ‘cooperative and good tempered’ nature of communist children.<sup>16</sup> As a host of education

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<sup>11</sup> M.W. Laufer and E. Denhoff, ‘Hyperkinetic Behavior Syndrome in Children’, *Journal of Pediatrics* 50 (1957) 463-474; M.W. Laufer, E. Denhoff and G. Solomons, ‘Hyperkinetic Impulse Disorder in Children’s Behavior Problems’, *Psychosomatic Medicine* 19 (1957) 38-49; R. Mayes and A. Rafalovich, ‘Suffer the Restless Children: The Evolution of ADHD and Paediatric Stimulant Use, 1900-1980’, *History of Psychiatry* 18 (2007) 435-457.

<sup>12</sup> Laufer, Denhoff and Solomons, ‘Hyperkinetic Impulse Disorder’, 41.

<sup>13</sup> *Ibidem*, 39.

<sup>14</sup> H. Fischer, ‘50 Years Ago in the Journal of Pediatrics: Hyperkinetic Behavior Syndrome in Children’, *Journal of Pediatrics* 150 (2007) 520.

<sup>15</sup> Smith, *Hyperactive*, 58.

<sup>16</sup> B. Ehrenreich and D. English, *For Her Own Good: 150 Years of the Experts’ Advice to Women* (Garden City, NY 1979) 232.

critics, ranging from naval admiral Hyman Rickover (1900-1986) and physicist Lloyd Berkner (1905-1967) to educators James Conant (1893-1978), Asa Knowles (1909-1990), and Max Rafferty (1917-1982), demanded that rapid improvement was not merely desirable, but a matter of 'URGENT NECESSITY'.<sup>17</sup>

The primary culprit, according to these critics, was 'progressive education', the educational philosophy that had dominated American education since the 1940s.<sup>18</sup> Associated with the philosophy of John Dewey (1859-1952), progressive education was a child-centered, hands-on, experimental, and egalitarian approach that provided students with a multitude of practical and active experiences in which to learn the skills they would need to be productive citizens.<sup>19</sup> Although a progressive classroom might seem anarchic, built into the chaos were numerous learning experiences, which allowed students the opportunity to learn by discovery and at their own pace. Achieving this, however, was easier in theory than in practice, and, following *Sputnik*, education critics argued that a much more rigid, subject-centered, and dictatorial approach was required for the sake of national security.

Such concerns were articulated in the National Defense Education Act (NDEA) of 1958, which provided a comprehensive 'tightening up' of or perhaps a 'cracking down' on the entire American education system.<sup>20</sup> NDEA, the result of a 'rigorous self-examination of the total education system', provided one billion dollars to improve standards in core subjects (mathematics, science, and languages), to reduce the number of school drop-outs, and to hire thousands of guidance counsellors to help achieve

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<sup>17</sup> Uppercase in original. A.S. Knowles, 'For the Space Age: Education as an Instrument of National Policy', *Phi Delta Kappa*, 39 (1958) 305-310: 306; J.B. Conant, *The American High School Today: A First Report to Interested Citizens* (New York 1959); J.B. Conant, *Slums and Suburbs* (New York 1961); M. Rafferty, *Suffer, Little Children* (New York 1963); H.G. Rickover, *American Education - A National Failure: The Problem of Our Schools and What We Can Learn from England* (New York 1963); J. Spring, *The Sorting Machine: National Educational Policy Since 1945* (New York 1976); D. Ravitch, *The Troubled Crusade: American Education, 1945-1980* (New York 1983)

<sup>18</sup> Ravitch, *Troubled Crusade*, 43-46.

<sup>19</sup> For an example of progressive education in action, see: *Time Magazine*, Progressive Education in the 1940s, [www.youtube.com/watch?v=opXKmwg8VQM](http://www.youtube.com/watch?v=opXKmwg8VQM), viewed on 21 April 2014.

<sup>20</sup> D. Barclay, 'A Turn for the Wiser', *Pediatrics* 23 (1959) 759-760: 760.

these goals.<sup>21</sup> Essentially, NDEA and the furor surrounding it not only heightened expectations of children in terms of academic success, but also created the environment in which the struggles of underachievers would be identified and analyzed. In the new demanding, subject-centered environments, the characteristics associated with hyperactivity were increasingly singled out as especially problematic. One example of this can be found in an article published in the journal *Exceptional Children*, which compared impulsivity rates in ‘underachievers’ and ‘future scientists’, students attending a space camp.<sup>22</sup> The researchers found that the underachievers had lower impulse control and, moreover, were less able to harness their activity. Other researchers also made this connection, and quickly the hyperactive child became symbolic of American educational failure.<sup>23</sup>

This education crisis did not, however, occur in a vacuum. The first hyperactive children were also members of the baby boom generation, the largest cohort in American history. The 75,000,000 baby boomers not only had a major impact on American culture (especially television and music), suburbanization, and education, but they also represented the hopes of Americans worried about the Cold War.<sup>24</sup> The sheer numbers of baby boomers put enormous pressure on an education system already eroded by the economic pressures of the Great Depression and WWII. The ‘crowded classrooms, expanding enrolments, and the rapidly changing world in the complex society of today’, along with ‘serious shortages in trained teachers, classrooms, and up-to-date equipment’, all contributed to a ‘crisis in education’.<sup>25</sup> In this environment, as Laufer and Denhoff admitted, teachers

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<sup>21</sup> A.S. Flemming, ‘The Philosophy and Objectives of the National Defense Education Act’, *Annals of the American Academy of Political and Social Science* 327 (1960) 132-138: 132.

<sup>22</sup> A. Davids and J. Sidmond, ‘A Pilot Study – Impulsivity, Time Orientation, and Delayed Gratification in Future Scientists and in Underachieving High School Students’, *Exceptional Children* 29 (1962-1963) 170-174: 170.

<sup>23</sup> K. Reeves, ‘Each in His Own Good Time’, *Grade Teacher*, 74 (1956-1957) 8, 117; K. Minde et al., ‘The Hyperactive Child in Elementary School: A 5 Year, Controlled, Followup’, *Exceptional Children* 38 (1971-1972) 215-221.

<sup>24</sup> S. Mintz and S. Kellogg, *Domestic Revolutions: A Social History of Family Life* (New York, 1988) 184-187.

<sup>25</sup> B. Barton and K.D. Pringle, ‘Today’s Children and Youth: I. As Viewed from the States’, *Children* 7 (1960) 50-56: 54; P.L. Gardner, ‘Guidance: An Orientation for the Classroom Teacher’, *Clearing House* 36 (1961-1962) 36-38: 38.

would be especially hostile to children presenting the symptoms of hyperkinetic impulse disorder, and quite likely to single them out as troublesome.<sup>26</sup>

Expectations of baby boomers had also escalated for other reasons. By 1956, nearly half (eight million) of all American WWII veterans had taken up training opportunities, such as college or university education, afforded to them by the Servicemen's Adjustment Act of 1944 (G.I. Bill).<sup>27</sup> For working-class veterans, the G.I. Bill represented the first chance for anyone in their family to attain higher education. While the training provided enormous opportunities, it also created the expectation that the recipients' children – the baby boomers – would also attain post-secondary education. Intensifying these expectations were concerns about the increasingly automated workplace, which would depend on a supply of highly-skilled workers, rather than the 'large labor force of uneducated muscle men' that had previously dominated the labor market.<sup>28</sup> The provision of such technologically-adept workers, as well as the scientists and engineers who designed such workplaces, was dependent on students attaining higher academic achievement. Dropping out of school at fourteen to work as an unskilled laborer was no longer an option.<sup>29</sup>

In this milieu of political, educational, demographic, and vocational turmoil, there was an increased 'amount of attention being given to smoking out and stimulating the efforts of the under-achievers'.<sup>30</sup> But this does not explain why the characteristics associated with such 'under-achievers' were so readily interpreted in psychiatric terms, nor why their 'efforts' would

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<sup>26</sup> Laufer, Denhoff, and Solomons, 'Hyperkinetic Impulse Disorder', 46.

<sup>27</sup> J. Bound and S. Turner, 'Going to War and Going to College: Did World War II and the G.I. Bill Increase Educational Attainment for Returning Veterans?', *Journal of Labor Economics* 20 (2002) 784-815; US Department of Veterans Affairs, 'History and Timeline', <http://www.benefits.va.gov/gibill/history.asp>, viewed on April 30, 2014. As many historians have demonstrated, African Americans, particularly those living in the South and subject to educational segregation, did not benefit from the GI Bill to the same extent. S. Turner and J. Bound, 'Closing the Gap or Widening the Divide: The Effects of the G.I. Bill on the Educational Outcomes of Black Americans', *Journal of Economic History* 63 (2003) 145-177.

<sup>28</sup> S.L. Warren, 'Implementation of the President's Program on Mental Retardation', *American Journal of Psychiatry* 121 (1964) 549-554: 550-551.

<sup>29</sup> Compulsory education legislation was first enacted in Massachusetts in 1852, but it took many of the southern states until the 1910s to follow suit.

<sup>30</sup> Barclay, 'Turn for the Wiser', 760.



soon be literally stimulated with stimulant drugs. In order to determine why the educational shortcomings of underachievers became perceived as the symptoms of a mental disorder, it is important to characterize American psychiatry during the post-war period.

In short, the field was faced with a perceived crisis in mental health that provided them with, as one leading psychiatrist described, ‘mountains of opportunity’.<sup>31</sup> Psychiatry had long been among the least respectable of American medical professions.<sup>32</sup> Considered little more than asylum attendants prior to the 1930s, a range of circumstances during and after WWII offered new challenges and prospects for psychiatrists. During the war, over two million recruits had been rejected for military service on psychiatric grounds.<sup>33</sup> While sexuality and race played a role in escalating the figures, these rates nevertheless sparked alarm about the prevalence of mental illness, and stimulated a more concerted attempt to tackle the problem.<sup>34</sup> A tangible offshoot of these concerns was the 1946 Mental Health Act, which authorized the foundation of the National Institutes of Mental Health (NIMH) in 1949.<sup>35</sup> One of NIMH’s first major initiatives was the formation of the Joint Commission on Mental Illness and Health (JCMIH), which was tasked to explore the full economic and health impacts of mental illness in the US. The Commission’s final report, *Action For Mental Health* (1961) called upon psychiatrists to address the challenge of mental illness head on, both in terms of treatment and prevention.<sup>36</sup>

The mental health of children was central to these efforts, and the Joint Commission on the Mental Health of Children (JCMHC) was shortly created to address the ‘groundswell of pressure for a study on the mental

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<sup>31</sup> C.H. Hardin Branch, ‘Presidential Address: Preparedness for Progress’, *American Journal of Psychiatry* 120 (1963) 1-11: 2.

<sup>32</sup> C.E. Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge 1992) 245-256; G.N. Grob, *From Asylum to Community: Mental Health Policy in Modern America* (Princeton 1991) 51, 279.

<sup>33</sup> G.N. Grob, *The Mad Among Us: A History of the Care of America’s Mentally Ill* (New York 1994) 193.

<sup>34</sup> N. Wake, *Private Practices: Harry Stack Sullivan, the Science of Homosexuality, and American Liberalism* (New Brunswick, NJ 2011) 166-178.

<sup>35</sup> G.N. Grob, ‘Government and Mental Health Policy: A Structural Approach’, *The Millbank Quarterly* 72 (1994) 471-500; G.N. Grob, ‘Creation of the National Institutes of Mental Health’, *Public Health Reports* 111 (1996) 378-381.

<sup>36</sup> Joint Commission on Mental Illness and Health, *Action for Mental Health* (New York, 1961).

health needs of children'.<sup>37</sup> At roughly the same time, the *Journal of the American Academy of Child Psychiatry (JAACP)* was launched, also indicating how improving child mental health was central to the overall goal of preventing mental illness. Just how psychiatrists ought to do this, however, was a matter of debate. Although the first years of *JAACP* were dominated by both psychoanalysis and social psychiatry, the influence of psychopharmacology soon began to leach into its pages.<sup>38</sup> One of the first topics debated by these three rival psychiatric disciplines in *JAACP* was hyperactivity and it soon became clear that the biological approach was to prevail.<sup>39</sup>

To a substantial degree, the success of psychopharmaceutical approaches to hyperactivity simply reflected a broader trend in American psychiatry. Ever since the first anti-psychotics and anti-depressants were developed during the 1950s, pharmaceutical companies began investing enormously in developing the next Miltown or Thorazine.<sup>40</sup> Neurologically-inclined psychiatrists, in turn, saw these drugs as a way in which to challenge the hegemony of psychoanalysis in post-war American psychiatry and to establish psychiatry as a medical science. Unlike expensive, time-consuming psychoanalysis – or the preventive strategies of social psychiatry—drugs worked quickly and cost little. This was especially so with Ritalin, which was approved for use in children in 1962. Previously marketed as a 'pep pill' for geriatric or depressive patients, or for dubious conditions such as 'tired housewife syndrome', Ritalin quickly became synonymous with hyperactivity.<sup>41</sup>

Ritalin's success can be attributed substantially to the aggressive marketing strategy of its manufacturer, Ciba, which was keen to promote the

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<sup>37</sup> R.S. Lourie, 'The Joint Commission on the Mental Health of Children', *American Journal of Psychiatry* 122 (1966) 1280-1281: 1280.

<sup>38</sup> M. Smith, 'Psychiatry Limited: Hyperactivity and the Evolution of American Psychiatry, 1957-1980', *Social History of Medicine* 21 (2008) 541-559.

<sup>39</sup> E.N. Rexford 'A Developmental Concept of the Problem of Acting Out', *JAACP* 2 (1963) 6-21; C.A. Malone 'Some Observations on Children of Disorganized Families and Problems of Acting Out', *JAACP* 2 (1963) 22-49; A.J. Solnit 'Who Deserves Child Psychiatry? A Study in Priorities', *JAACP* 4 (1966) 1-16; L. Eisenberg, 'Discussion of Dr. Solnit's Paper', *JAACP* 5 (1966) 17-23; J. S. Werry et al., 'Studies on the Hyperactive Child III: The Effect of Chlorpromazine upon Behavior and Learning Ability', *JAACP* 5 (1966) 292-312.

<sup>40</sup> D. Herzberg, *Happy Pills in America: From Miltown to Prozac* (Baltimore 2009) 17-46.

<sup>41</sup> Smith, *Hyperactive*, 105-109.

ubiquity of hyperactivity as much as their product, and did so using advertisements in medical journals, films and handbooks aimed at teachers and parents, and even Parent-Teacher Association presentations.<sup>42</sup> But Ritalin was also seen by desperate, struggling parents as the means by which they could 'love [their] child again', and by teachers as 'a panacea for our non-performing students, a magic that will stir the laggard and salve the distressed'.<sup>43</sup> Similarly, Ritalin represented for psychiatrists 'one of the few situations in which you can do something quickly for people', a tool by which they could 'help these kids from going down the drain'.<sup>44</sup> Although the reasons why parents, teachers, and psychiatrists thought such children were 'going down the drain' were complex, the process by which drugs became seen by most Americans as an acceptable treatment for academic underachievement cannot be blamed solely on the top-down influence of pharmaceutical companies. It was instead part of a fundamental shift in American society whereby mental disorder left the asylum – both literally and figuratively – and became a much more common and less stigmatized part of everyday life, even for children. In addition to these perceptual shifts that moved Americans to see hyperactive behavior as pathological, however, were other changes in children's lives that also made them more hyperactive.

## Hyperactivity and Environment

The environment – defined broadly – in which American children grew up changed enormously following WWII. Children increasingly lived in suburbs dependent upon automobiles. Within these suburban homes, they were fed a diet of evermore processed and additive-laden food, and entertained in front of the television and, later, with video games and the internet. Relationships between adults and children also transformed, with corporal punishment becoming a less acceptable for parents and teachers

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<sup>42</sup> P. Schrag and D. Divoky, *The Myth of the Hyperactive Child: And Other Means of Child Control* (New York 1975) 84-85, 111-116.

<sup>43</sup> Anonymous, 'Those Mean Little Kids', *Time* (October 18, 1968); J. Peterson, 'The Researcher and the Underachiever: Never the Twain Shall Meet', *Phi Delta Kappa* 44 (1963) 379-381: 381.

<sup>44</sup> M. Laufer quoted in R. Reinhold, 'Drugs that Help Control the Unruly Child', *New York Times* (5 July 1970); S. Adler quoted in Anonymous, 'Drugs for Learning', *Time* (August 10, 1970).

seeking to enforce discipline. The full impact of these changes, for good and ill, have yet to be fully understood – and are controversial – but it is difficult to argue that they did not have any effect on children’s behavior. Just as the shifting line between normal and abnormal on the hyperactivity continuum made it easier for children to be diagnosed, environmental factors pushed children further along the continuum.

In a 1922 article, pediatrician W. Ray Shannon described a four-year-old boy who ‘could not still’ and ‘was very hard to manage’. The explanation was not to be found in dysfunctional neurology or parenting, however, the culprit was an allergy to certain foods and animals. When these were avoided, his behavior returned to normal.<sup>45</sup> Shannon’s explanation may have been perceived as unorthodox by most physicians, but for many allergists, the link between allergy and hyperactivity was well-established, with numerous accounts published on the topic between the coining of the term allergy in 1906 and that of hyperkinetic impulse disorder in 1957.<sup>46</sup> Allergists who believed in the association were quickest to implicate foods and, following WWII, food additives, such as artificial colors, flavors, and preservatives, were increasingly highlighted, as these chemicals were evermore used in production to make food more attractive and last longer.<sup>47</sup> Although such hypotheses had received little attention outside of allergy, this would all change with the publication of *Why Your Child is Hyperactive*.<sup>48</sup>

Written by retired San Francisco pediatric allergist Ben Feingold (1899-1982) in 1974, *Why Your Child is Hyperactive* hypothesized that food additives introduced after WWII were largely responsible for the hyperactivity epidemic. With chapters such as ‘How Safe are “Safe” Additives’ and ‘The Pollutants We Ingest’, Feingold’s argument paralleled

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<sup>45</sup> W.R. Shannon, ‘Neuropathic Manifestations in Infants and Children as a Result of Anaphylactic Reaction to Foods Contained in Their Dietary’, *American Journal of Disease of Children* 24 (1922) 89-94.

<sup>46</sup> For example: B.R. Hoobler, ‘Some Early Symptoms Suggesting Protein Sensitization in Infancy’, *American Journal of Diseases of Children* 12 (1916) 129-135; W. C. Alvarez, ‘Puzzling “Nervous Storms” Due to Food Allergy’, *Gastroenterology* 7 (1946) 241-252; T.G. Randolph, ‘Allergy as a Causative Factor of Fatigue, Irritability, and Behavior Problems of Children’, *Journal of Pediatrics* 31 (1947) 560-572; T.W. Clarke, ‘Neuro-Allergy in Childhood’, *New York State Journal of Medicine* 42 (1948) 393-397.

<sup>47</sup> H. Levenstein, *Paradox of Plenty: A Social History of Eating in Modern America* (Oxford 1993).

<sup>48</sup> B.F. Feingold, *Why Your Child is Hyperactive* (New York 1974).

similar claims associating environmental lead (largely from automobile fuel) and behavioral problems, a link that has recently been applied to decreases in violent crime during past decades.<sup>49</sup> Although thousands of parents found Feingold's remedy (a food additive-free diet) effective, most physicians had dismissed his theory by the 1980s, despite some promising research findings.<sup>50</sup> More recently, however, new trials have provided renewed evidence in Feingold's favor, leading some former critics to revise their conclusions.<sup>51</sup> While Feingold's hypothesis remains controversial, the debate is slowly changing from whether or not chemicals cause hyperactivity to the extent of their impact, thus acknowledging that the disorder has an environmental dimension that should be considered.<sup>52</sup>

Somewhat related to the argument that unnatural diets have contributed to the emergence of hyperactivity has been another claim that lack of access to nature, a byproduct of both urbanization and suburbanization, has also been to blame. There are two dimensions to the argument: while the paucity of outdoor opportunities has contributed to what journalist Richard Louv has coined 'nature deficit disorder', what children do instead – watching television and playing video games – has also been thought to make children more hyperactive.<sup>53</sup> Underlying both

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<sup>49</sup> E.K. Silbergeld and A.M. Goldberg, 'Hyperactivity: A Lead-Induced Behavior Disorder', *Environmental Health Perspectives* 7 (1974) 227-232; P.A. Eubig, A. Aguiar and S.L. Schantz, 'Lead and PCBs as Risk Factors for Attention Deficit/Hyperactivity Disorder', *Environmental Health Perspectives* 118 (2010) 1654-1667; D. Casciani, 'Did Removing Lead from Petrol Spark a Decline in Crime?' BBC News, <http://www.bbc.co.uk/news/magazine-27067615>, viewed on May 5 2014.

<sup>50</sup> M. Smith, *An Alternative History of Hyperactivity: Food Additives and the Feingold Diet* (New Brunswick, NJ 2011).

<sup>51</sup> B. Bateman et al., 'The Effects of a Double-blind, Placebo Controlled, Artificial Food Colourings and Benzoate Preservative Challenge on Hyperactivity in a General Population Sample of Preschool Children', *Archives of Disease in Childhood* 89 (2004) 506-511; D. McCann et al., 'Food Additives and Hyperactive Behaviour in 3-Year-Old and 8/9-Year-Old Children in the Community: A Randomised, Double-Blinded, Placebo-Controlled Trial', *Lancet* 370 (2007) 1560-1567; A. Schonwald, 'ADHD and Food Additives Revisited', *AAP Grand Rounds* 19 (2008) 17.

<sup>52</sup> R.B. Kanarek, 'Artificial Food Dyes and Attention Deficit Hyperactivity Disorder', *Nutrition Reviews* 69 (2011) 385-391.

<sup>53</sup> R. Louv, *Last Child in the Woods: Saving Our Children from Nature Deficit Disorder* (Chapel Hill, NC 2005).

elements of this theory is the idea that hyperactive children do not get sufficient physical activity, spurring associations between hyperactivity and obesity.<sup>54</sup> Since boys, who are disproportionately diagnosed with hyperactivity, are believed to be more active, some have argued that reducing opportunities for physical activity has effectively pathologized boyish behavior.<sup>55</sup> But beyond the basic point of burning excess energy – which might nevertheless explain the rise of both conditions – researchers have made the broader point that being outdoors and appreciating nature is somehow good for the mental health of children (and adults). A 2012 UK National Trust report entitled ‘Natural Childhood’ contended not only that children with ADHD experienced reduced symptoms when exposed to nature, but also that time spent out in the great outdoors was beneficial for mental health generally.<sup>56</sup> Michael Depledge, former Chief Scientist of the Environment Agency for England and Wales, has made similar claims in encouraging that people exercise in the ‘Blue Gym’, that is, in or close to aquatic environments.<sup>57</sup> If children are watching television and playing video games, rather than playing outside, then symptoms could further worsen. This, according to the American Academy of Pediatrics, is particularly true of children under the age of two, who they argue should not watch any television at all.<sup>58</sup>

Along with diet, physical activity, access to nature, and television watching/video gaming, declining use of corporal punishment should also

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<sup>54</sup> K.A. Bazar et al., ‘Obesity and ADHD May Represent Different Manifestations of a Common Environmental Sampling Syndrome’, *Medical Hypotheses* 66 (2006) 263-269.

<sup>55</sup> I. Singh, ‘Will the “Real Boy” Please Behave: Dosing Dilemmas for Parents of Boys with ADHD’, *American Journal of Bioethics* 5 (2005) 34-47.

<sup>56</sup> S. Moss, *Natural Childhood*, <http://www.nationaltrust.org.uk/document-1355766991839/>, viewed on May 6, 2014.

<sup>57</sup> T. Smedley, ‘What Impact do Seas, Lakes and Rivers Have on People’s Health’, *Guardian Professional*, <http://www.theguardian.com/sustainable-business/impact-sea-lakes-rivers-peoples-health>, viewed on May 6, 2014.

<sup>58</sup> D.A. Chistakis et al., ‘Early Television Exposure and Subsequent Attentional Problems in Children’, *Pediatrics* 113 (2004) 708-713; American Academy of Pediatrics, ‘Media Use By Children Younger than Two Years’, *Pediatrics* 128 (2011) 1040-1045; A.S. Lillard and J. Peterson, ‘The Immediate Effects of Different Types of Television on Young Children’s Executive Function’, *Pediatrics* 128 (2011) 644-649.

be considered in the rise of hyperactivity.<sup>59</sup> It is quite possible that, prior to the 1960s, many hyperactive children were simply conditioned into better behavior by being physically punished. Although returning to such coercion is undesirable to most – though not all – child experts, it could be that many parents and teachers have struggled to replace this unattractive, yet effective, weapon from the child-rearing arsenal.<sup>60</sup> Despite the fact that these external environmental factors appear to be fairly likely contributors to the rise in hyperactivity, however, not enough research has been done to explore them, leaving the simplistic explanation that hyperactivity is simply a genetic, neurological dysfunction unchallenged. When such research has been conducted, as in the case of Feingold’s hypothesis, it has been poorly done or unduly influenced by interested parties, such as the food industry. The result is an attenuated understanding of hyperactivity, its causes, and how to treat it.

## Conclusion

The more hyperactivity’s history is examined, the less it becomes a simple neurological glitch that effects five percent of the world’s children, and the more it becomes the embodiment of a plethora of changes to how childhood has been perceived and experienced since WWII. Children the world over have always had to take up the load left by their parents, but for children of the post-war period, the burden of higher academic achievement, high-tech workplaces, and the Cold War was altogether different from what their parents had endured. When these heightened expectations were taken on by an ambitious psychiatric profession armed with new, exciting psychopharmaceutical magic bullets, it is not surprising that those struggling to cope were diagnosed with a medical disorder and treated with drugs. Indeed, parallels can be seen both in the rise of neurasthenia during the late nineteenth century, feeble-mindedness in the early twentieth century, and

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<sup>59</sup> S. Riddell et al., ‘School Discipline and ADHD: Are Restorative Practices the Answer?’ in: L.J. Graham ed., *(De)Constructing ADHD: Critical Guidance for Teachers and Teacher Educators* (New York 2009) 187-204.

<sup>60</sup> N. Shute, ‘One View: A Spanking Might Beat Ritalin’, <http://health.usnews.com/health-news/blogs/on-parenting/2008/06/09/one-view-a-spanking-might-beat-ritalin>, viewed on May 6, 2014.

with the emergence of many other ‘new’ psychiatric disorders.<sup>61</sup> When the behaviors associated with underachievement were exacerbated by environmental changes, the situation simply became more fraught, particularly since these external factors were largely ignored or dismissed by physicians and educators.

Perhaps the best way for the history of hyperactivity to inform current debates about the disorder is to return to the line on the hyperactivity continuum where overactive behavior becomes pathological. The socially constructed nature of hyperactivity compels us to think carefully about where we place this line and whether it should be drawn in the same location for all children or for all situations. Should all children go to university? Should more students be encouraged to learn a trade? Are examinations the best way to determine student success? All these questions – and many more – need asking if we are to get to resolve the ongoing debates about hyperactivity. It is equally important, however, to acknowledge and further explore how extenuating factors, ranging from chemicals in the environment to children’s sedentary lifestyles, have pushed children further along the continuum, often across the line from normal to abnormal. Rather than resorting immediately to diagnoses and drugs, we owe it to our children to understand fully what hyperactivity is, what it represents, and why it has emerged.

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<sup>61</sup> D. Healy, *The Antidepressant Era* (Cambridge 1997); M. Jackson, *The Borderland of Imbecility: Medicine, Society and the Fabrication of the Feeble Mind in Late Victorian and Edwardian England* (Manchester 2000); D. Schuster, *Neurasthenic Nation: America’s Search for Health, Happiness, and Comfort* (New Brunswick, NJ 2011).