

## 8. ADD & OC

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"That, as Sherlock Holmes would say, is what you may expect to see when there is nothing there,"  
said Wimsey, kindly.<sup>1</sup>

OCs can be described, like people in general, according to how much insight and self-perspective they have. Some can't imagine that they have a problem; *I'm not mad. I wouldn't get mad if you wasn't so stupid.* Others have an inkling that something is wrong but they can set it right by counting to 22 inside their heads. Yet others know exactly what is wrong: *I have ADD, Dr Gualtieri, and my usual dose of amphetamines just isn't working as well as it used to.* That his usual dose of amphetamines would be sufficient to take a trucker from Miami to Tacoma and back doesn't strike him as irregular.

If you, your spouse or lover has ADD, the chances are even that OC is the real problem. If you, your lover or spouse works as an *ADD specialist*, the likelihood is better than even. OCs, for reasons I shall try to explain, *like* ADD. There is something about ADD that appeals to them whether he or she is a controlling man or woman, someone with OCD or just someone with OC traits.

They all have problems with productivity. They get distracted by details and the imperfections of their analysis. This they take to be a problem with attention, and it is, in its own way. It's hard to stay focused when one is continually distracted by this thought: *I can't focus.* And this one: *My usual dose of amphetamine is no longer sufficient!* It's such slow going without that burst of dopamine.

An OC who is afflicted with obsessive slowness or intrusive, anxiety-provoking thoughts may worry that his job is at risk because he can't keep up with the paperwork. We have had to let more than one physician go because they were so obsessive they could barely complete their daily notes, let alone a patient report. If ever they completed one, it might be a marvel of clarity and clinical analysis or a jumble of unintelligible facts. Others subjected patients to endless testing, looking for zebras even in the most straightforward cases. They were obsessed with zebras, I suppose.

One such fellow was so agreeable and such a clear-minded clinician we did everything we could to accommodate his weaknesses. He used to hoard patient charts in his office so he could finish his notes and write his reports. *Where is so-and-so's chart*, the techs would ask. *Oh, it must be in Dr T's office.* There it was, among the stacks of charts awaiting notes and reports. We assigned him a personal nurse to keep up with his notes and return charts to their proper place. He began to hoard his charts in the trunk of his car. The nurse learned to steal into his office when he was occupied, borrow his car keys and retrieve the charts. He started to take them home. The nurse recruited his wife to return the charts. Finally, he was taking such pains to hide his unfinished work he was chronically late for his appointments. He left us, to everyone's relief including his wife, who left him.

It is possible that the electronic medical record will arrest such events before they begin. If a physician doesn't complete his note, the automatic medical record simply carries over the note from the previous medical visit, changing only the date and the patient's vital signs. Ah, progress.<sup>2</sup>

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<sup>1</sup> Dorothy L. Sayers, *Strong Poison*

Absent effective technology, one can always resort to psycho-stimulant medications. *I notice, our OC physician told me, That when I take twice my usual dose of dextro-amphetamine I do better keeping up with my notes.*

An insightful OC takes himself to his or her physician. *I have problems with focus and I think I have ADD.* The physician asks if he or she had difficulties at school. *No, I made straight A's but I always had to work harder than anybody else.* The physician gives the patient an ADD “rating scale,” a list of questions that ask, in several different ways, if he thinks he has problems with attention. If the patient says *Yes, a severe problem* to enough of these questions –a foregone conclusion, because he came in because he thinks that he has problems with attention – then, sure enough, he’s an ADD and walks out with a prescription for amphetamine. This is the sum and totality of the diagnostic process in most clinics, although, I hasten to add, not in ours. It is an efficient method, to be sure, to reduce one’s analysis of a case to adding up a patient’s scores on a questionnaire and to remove reason and accountability from the process, but it doesn’t always lead to good results.

That is because there is a problem with giving such patients amphetamines. When one takes a stimulant, it confers a boost of energy and a bit more focus and concentration. The drug does that whether one is ADD or not, and it can do it even if one’s attention problems are caused by anxiety, obsessive ruminating, chronic hypomania or daily doses of cannabis. *It’s the only thing that helps me go to sleep,* he says, referring to the cannabis. He needs it to sleep because he’s taking so much amphetamine.

One problem is that the effects of stimulants are quite noticeable and also that they are “on-off” drugs. That means the patient experiences the positive effects of the drug acting and the negative effects of the drug wearing off. What one is doing by giving such a patient a stimulant drug, therefore, is *conditioning* him to monitor his internal state. In an obsessional individual that simply gives him one more thing to obsess over. So what does he do? He thinks, *This ADD is killing me and I don’t have enough Adderall™!* He tells his doctor just that and gets a higher dose of stimulant to take.

Which leads to the second problem with stimulant drugs. Small doses are quite effective at improving cognitive performance. To that end, we use the drugs not only for patients with ADD, but also for patients who have had brain injuries, stroke and even early Alzheimer’s disease. The problem is that small doses improve attention and memory and processing speed, while higher doses have the opposite effect. Therefore, when an OC takes a higher dose, he simply experiences more in the way of cognitive scatter than he had before he started. His reaction? *I don’t have enough Adderall.* When he is finally taking enough amphetamines to fuel a trucker driving from Halifax to Tijuana and he still wants more, his family doc is likely to get nervous and send the fellow to our clinic. We will tell the patient, that he is on an amphetamine treadmill, that his problem is OC not ADD, and that he needs to get off the stuff. He usually becomes quite irate and looks for another psychiatrist.

It is odd practice to treat obsessions with drugs that simply increase the patient’s proneness to obsess, or to treat a cognitive disorder with a drug that can impair one’s cognition, but the ADD industry wouldn’t thrive as it does if it didn’t play such tricks. Physicians who make their patients worse are held in high esteem as long as they make them feel better sometimes. And as long as they prescribe a higher dose next time.

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<sup>2</sup> The EMR has been designed, unfortunately, by the same fellows who get distracted by details and the imperfections of their analysis. Their perfectionism is amplified by rules set down by the Department of Health and Human Services in Washington. As a result, one’s daily notes are so cumbersome they require a *scribe* to fill in all the little boxes and even a *very fast scribe* has difficulty keeping up with all the data in the 360 seconds the MD is afforded to examine the patient, make a diagnosis and prescribe treatment. Medicine must be the only field where new technology *increases* costs and manpower needs. It’s called *meaningful use*.

## OUR NECK

All of these are familiar scenarios in my neck of the woods. Where we live, F and I and the children, is a pleasant and unassuming part of the world that local boosters have given the unlikely name, the *Research Triangle*. Why anyone would think a triangle is an appealing place to live has always been a mystery to me, but the lure of geometry seems to have attracted a unique concentration of highly educated and mostly fussy people. We have, for better or worse, more PhD's and MDs as a proportion of the population than any other place in the world, except maybe Los Alamos, but without the mountains and the plutonium. It is a dubious honor, if you ask me, and is reflected in the reliably wrong-headed way the population votes at election time.

What qualifies your writer as advanced expert on the topic of OC people is the fact that OC traits tend to gravitate towards the PhD's and the MDs of the world, as if they were viral parasites that attached themselves to the genes for high intelligence. I suppose it is more accurate to say that people with OC traits tend to gravitate to the fields of engineering, science and medicine, especially those who like to spend their lives doing research, which is, after all, simply an exercise in reducing all of Creation to numbers. As I told you, OCs love to count, and Heaven knows we have counters around here. *Count it! and if you can't count it then it doesn't exist.* That is the motto of the purveyors of Evidence Based Medicine: *If it hasn't been published many times over, then you shouldn't do it.* We have a clutch of such purveyors at our Medical Schools and they are very good at citing the medical literature but not very good at treating patients whose conditions haven't been subjected to prospective, multicenter, double-blind studies. Which is most conditions, BTW.

The EPA is here too, and their motto is, *If you can count it, it's dangerous.* Having a surfeit of such characters in our neighborhood, fussy men and women in great numbers, counters and checkers galore, our clinics have a steady flow of customers, and for that we are grateful.

There is another word one can use to describe some OC individuals. That is "up tight," or uptight, or up-tight, as in, *unable to relax and just chill, has panties all up in a twist, walks with a stick up his ass.*<sup>3</sup> It's something one can *feel* when meeting such a person. They are in a state of mind that is almost palpable, a state that simply exudes tension and intensity. When one is with an uptight person, one is immediately on guard. It makes one tense as well. He or she is looking for an excuse to jump down your throat.

When I see such a patient, I have a certain reaction cultivated over many years dealing with uptight people. I relax. It takes every effort culled from years of yogic meditation and high doses of mood-stabilizing and antidepressant drugs. I take on a calm and agreeable manner, even calmer and more agreeable than my usual demeanor, and this has a reliable effect. Or two effects, depending on the patient. Most, the mild cases, relax themselves, and that is a good thing. Some, however, the bad cases, go into a slow burn. *How can this moron remain calm,* the bad case thinks, *When the matter at hand is so desperately important? I am ADD!* he says, in more words than that, *I am taking eighty milligrams of Adderall three times a day for God's sake and I still can't get my work done. My doctor won't give me more until I come to see you.* And underneath there is this message: I would sooner sit on a spike than talk to this stupid psychiatrist.

I have a long history with uptight people, or people with OC traits. I remember a visit I made, years ago, to give a lecture at Nearby University during the middle of the day. It was one of our local schools, one with Ivy League panache. As I walked across the quad at class-changing time, I was struck by the feeling *I have been here before.* I had never been there, though. My job at the time had me on the campus of nearby State U, where the undergraduates sauntered beneath the oaks, chatting happily and greeting passers-by with a smile. But at this

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<sup>3</sup> Urban Dictionary; also, Stevie Wonder, Motown Records.

other place, there they were, in their hundreds, rushing from class to class, eyes to the pavement and expressions grim, without a word to share, as if they were all pushing heavy stones up the side of a steep hill. The tension was palpable but no one seemed to notice but me. *My God, I said to myself, I'm back at Columbia.*

It would be off the point to go into the details of my own long history with uptight people, especially during my school days on upper Broadway, although it was a rather abrupt transition from happy times in Bensonhurst where the members of my family would be more properly described as wide-open rather than uptight. (Most of *them* are in another book.) I should like to tell you, someday, about the geographic concentration of uptight people in the world and how it relates to the therapeutic and recreational drugs that they prefer, but that is a lesson for another time. Suffice it to say that enduring a prolonged University life in the company of self-absorbed strivers enlightened your author to the barrenness of such a life and taught me all of the tricks of its acolytes.

The problem with treating OCs is that the drugs they prefer to take – amphetamines – are only calculated to make them more intense and self-absorbed, and they will go to lengths to find one of those rating scale doctors – “ADD specialists” – who will give them what they want. They are disgusted at the idea of any form of treatment that might make them a bit less intense and self-absorbed. Why somebody who is already wound up tighter than a clock wants a drug that is going to wind him up even tighter is one of those small mysteries neuroscience has yet to unravel. If you tell him, *That drug is just making you angrier*, he will just get angry.

ADD is different from OC, but the two conditions are similar in many ways. In other respects, they are polar opposites. For that reason, one can't have one *and* the other. But some people do, or think they do.

ADD is a pure example of how a mild weakness in neurocognitive function can intrude into the life of a person and cause difficulty. It is also an example of how physicians try to conceptualize a cognitive weakness as if it were a disease. It is also an example of how medications can effect human traits *as if* they were modifying the course of disease. It is one of a number of mild cognitive disorders that are largely problems of modern, advantaged societies, where most serious diseases have been vanquished. The afflictions we are left with are the natural consequences of ageing or excess; or, as in the case of ADD and learning disability, difficulties adjusting to the requirements of universal education and the “knowledge society.” Also, the desire for a little buzz.

ADD is a developmental disorder that no one would prefer to have if they could help it. Nevertheless, there is a tribe of OCs who relish in the idea that they are ADD. ADD, therefore, is also an example of how a mild weakness in neurocognitive function can occur in an individual, *simply because they are thinking too much about it*. A patient will say to me, *I am not OCD, I am ADD*. To which I say, you aren't OCD, you are OC, and your problems with attention have arisen in that context. At which point they may or may not visit another physician, depending on their measure of insight and self-perspective.

The diagnosis, ADD or ADHD, has cachet. Colleges, graduate programs and test operators like the College Board are petitioned to make the accommodations that are deemed to be “medically necessary.” Grown-ups, for no better reason than they think they have it, are not shy about visiting a family doc, announcing that they “are ADD,” and requesting amphetamines. Fifty years ago, on the heels of amphetamine epidemics in Japan and Europe, and then in the United States, such people would likely have got thrown out on their ear. It is no small measure of how things have changed, that today they usually get what they ask for. Doctors get bonuses, if you can believe it, on the basis of *patient satisfaction*.

*I asked that doctor to refill my prescriptions for Adderall and Oxy-Contin and to sign my disability papers but he wouldn't. I'm dissatisfied.*

## AN OBLIQUE HISTORY OF ADD

Whatever it is, ADD is in the public eye. Increasing numbers of schoolchildren are diagnosed with the condition; more than 2 million North American schoolchildren take stimulants or other medications for what psychiatrists, uneuphoniouly, call ADHD. *Dr Gualtieri, you said that Austin is ADD. I thought he had ADHD.* They are, if anything, the same thing.

Our oblique history begins with a man whose opinions presaged the current state of affairs. Hans Huessy was a German-born child psychiatrist who spent his working years in Vermont. He had a productive career as a psychiatrist, and in his spare time he made maple syrup. In his later years he liked to cultivate the role of curmudgeon, especially in his correspondence with the psychiatric journals. During the sixties and seventies, he could be relied upon to criticize the prevailing psychoanalytic views. He always maintained that the basis of psychopathology was biological, rather than "epigenetic," as the Freudians of the time believed. Such views won him few admirers, but the author counts himself as one of those few. Even my sympathetic ear, though, turned deaf to his opinions about ADD, which he felt was scandalously overlooked and under-diagnosed. He felt that it was virtually ubiquitous among children and adults who were diagnosed with conduct disorders, neuroses or personality disorders. Instead of psychotherapy, he treated them with psychostimulants, especially methamphetamine (Desoxyn™). In those days we were very cautious with psychostimulants, especially methamphetamine.

It wasn't that I thought Huessy was wrong. Even then, observant child psychiatrists realized that symptoms of the "Hyperkinetic Reaction of Childhood" were extremely common in their patients, and did not always abate with the onset of puberty. Problems with inattention, impulsiveness and emotional instability tended to persist in adolescents and adults who had once been diagnosed as "hyperactive children." They were also obvious in the parents of the hyperactive kids one saw in the clinic. We appreciated that the prevalence of the condition was high: 1-3% of all schoolchildren was the estimate at the time. Many doctors at the time thought that hyperactive kids outgrew the condition during puberty. But during the 1980's, psychiatrists began to diagnose the disorder in adults, treating them with stimulants, or with tricyclic antidepressants like desipramine. (Gualtieri et al, 1985)

Huessy wasn't wrong, he was just ahead of his time. Child psychiatrists in particular tended to be negative about psychotropic drugs, and physicians in general had their doubts about doctors who prescribed stimulants too freely. Also, if anything, the "Hyperkinetic Reaction of Childhood" was considered to be a behavior disorder, not a cognitive disorder. Locomotor hyperactivity was the key element to making the diagnosis, and that is the one symptom of ADD that tends to abate during adolescence. Later, when the idea gained currency that attention dysfunction was the key element of the condition, it was easier to demonstrate that the condition persisted into adult life. In the nineteen-sixties and -seventies, though, the "Hyperactive Child Syndrome" remained, fairly and squarely, the precinct of child psychiatrists and pediatric neurologists. (Brenda Blair's mother took her to a neurologist at Georgetown, and he prescribed Ritalin™; if she had taken her to a child psychiatrist, she would have got Mellaril™.) Childhood Hyperactivity, therefore, was an obscure condition in an obscure branch of medicine. Every once in a while there was a commentary, like Nat Hentoff's in the Village Voice, to the effect that doctors were drugging children into submission to a corrupt capitalist system, but no one paid much attention.

There was a small flurry of research interest in the disorder during the 1970's. The idea that stimulants were activating for adults but calming for hyperactive children led to the promulgation of the notion of the "paradoxical response." The discovery that scientists could make rats hyperactive, usually by damaging their nervous systems with a neurotoxin like lead or carbon monoxide, and that the rats would quiet down with a small

dose of amphetamine, was a compelling focus of argument and discussion. That party came to an abrupt end when Judith Rapoport demonstrated that even normal children were more attentive and less fidgety when they took a small dose of methylphenidate. A number of clinical scientists demonstrated that adults with ADD responded to stimulants in the same way. The “paradoxical response” was simply a fallacy, and the “animal models” of the Hyperkinetic Syndrome faded into obscurity.

Looking back on those days, I wonder why we didn’t know better. The cognitive effects of amphetamine had been widely appreciated during the nineteen-forties, when the US Navy gave it to men who operated SONAR devices on ships in the battle of the North Atlantic. With a small dose of Benzedrine, sailors were able to attend to the screen for longer periods of time, they were less distractible, less vulnerable to the fatigue induced by a boring task, and they made fewer omission errors. That is, they didn’t miss as many submarines. Psychostimulants improve almost everyone’s ability to sustain attention to a dull, boring task. We should have known.

Well before the War, Charles Bradley, a child neuropsychiatrist at the Emma Pendleton Bradley Home in Rhode Island, had discovered that children with a wide range of psychiatric conditions improved when they were treated with Benzedrine®, a precursor of today’s Adderall®. Bradley’s patients were a diverse group of children with behavior disorders, emotional problems and psychosis. Even allowing for the diagnostic imprecision of the day, Bradley’s observations indicated that the effects of amphetamine were virtually universal; that is, they were not limited to any single category of patient. The psychotic children responded almost as well, in terms of attention and focus, as the kids with emotional or behavior problems. Bradley’s findings were entirely serendipitous, but his work was the first successful application of a modern psychopharmaceutical. It took psychiatrists twenty years to appreciate the importance of his discovery.

Why did Bradley give Benzedrine to children in the first place? In 1935, Benzedrine sulfate was a new drug that Smith, Kline & French wanted to market to doctors. SK&F provided a free drug supply to any interested doctor in order to explore lucrative possibilities such as “adrenaline-like effects” on respiration and stimulating effects on brain function. SK&F officials hoped to focus on the drug’s use for mental performance enhancement. (Strohl, 2011)

While Charles Bradley was consulting at the Bradley Home in Providence (it was named after a remote cousin), he volunteered to do a Benzedrine® study for SK&F. Now, as it happened, it was routine to do pneumoencephalograms on the patients at the Home. Pneumoencephalograms are an ancient version of CT scanning that involved performing a lumbar puncture and injecting air into the cerebrospinal space. Most children developed headaches following the procedure and Bradley speculated that a stimulant drug would increase their blood pressure, thus causing their choroid plexus to secrete cerebrospinal fluid at a faster rate and alleviate the post-LP headache. Benzedrine was the only stimulant available at the time. It didn’t do very much for headache, but teachers at the hospital school observed that children who had taken Benzedrine after their LP performed much better in the classroom. The children called Benzedrine their “math pill.”(Gross, 1995).

Stimulant treatment was one of those occasional events in medicine – like quinine, colchicine, reserpine and digitalis – where a successful treatment was discovered long before physicians had any idea what it was they were treating. Bradley had stumbled across a relatively non-specific treatment that happened to improve attention and impulse control in children with a variety of different problems. He never reconciled his discovery with the work of other physicians who were beginning to conceptualize an entity that they called “Minimal Brain Damage (MBD).

The line of research that ultimately led to the present conception of ADD began with a German neuropsychiatrist, Kurt Goldstein. Goldstein’s original interest was the sequelae of brain injury in veterans of the

First World War. Duly recording their focal deficits, he was more struck by their personality changes. Although some were placid and apathetic, others seemed to have a general loss of inhibitory control. They tended to be restless, irritable, inattentive and distractible. They also had a special tendency to panic reactions in response to moderate provocation.(Goldstein, 1942)

Goldstein moved to the United States, where he was held in high esteem and his writings were influential. In 1939, Werner and Strauss observed that many of the mentally retarded children under their care displayed traits similar to Goldstein's brain-injured veterans. In 1947, Strauss & Lehtinen published an influential book on the "brain injured child."(Wortis, 1984)

The next step was for physicians, mostly pediatricians and neurologists, to observe that symptoms of restlessness, inattention, impulsivity and excitability occurred in some children who were *not* mentally retarded and had not had overt brain injuries. Because the clinical symptoms were so similar, it was assumed that they, too, must have some underlying encephalopathy. They did not have focal abnormalities on the neurological examination, but they did have soft sign" of neurological dysfunction. They did not have global intellectual impairments, or focal impairments, like amnesia or aphasia, but they were prone to various learning problems, like dyslexia. The term **Minimal Brain Damage** or **MBD** was coined.

During the nineteen-fifties and early -sixties, MBD was conceptualized as a clinical entity comprised of three overlapping pathological conditions: the hyperkinetic syndrome (inattention and hyperactivity), specific learning disabilities and developmental language disorder. A child with MBD might have one or two or all three.

Then the name of the condition was changed to "Minimal Brain Dysfunction," an early nod to political correctness, but also reflective of the observation that overt cerebral insult was a relevant factor in only a small number of cases. Finally, the circle was closed, and in the late fifties the therapeutic benefits of amphetamine began to be linked, specifically, to children who were hyperactive and/or inattentive (Clements & Peters, 1961).

Diagnosis and treatment thus found each other. The relatively non-specific nature of the stimulant response that Bradley had observed and that medicine had ignored for 25 years gave way to a more specific definition of which children ought to be treated with stimulant drugs. The myth of the "paradoxical response" was soon to follow. In a triumph of circular reasoning, clinicians even came to believe that a positive behavioral response to stimulants affirmed the diagnosis of what was now called **Childhood Hyperkinesia**.

During the seventies the modern view of Attention Deficit/Hyperactivity Disorder (ADHD) developed, largely the result of Virginia Douglas' work in Montreal. Locomotor hyperactivity, the central issue for many years, was considered to be only a part of a syndrome, whose main elements comprised deficits in attention and effort, impulsive behavior, inability to modulate arousal levels to meet situational demands and a strong inclination to seek immediate reinforcement.(Douglas, 1972) Not only were these features more salient to understanding the disorder, they also embraced a much wider group of children, and could be applied to an even larger population of adolescents and adults.

The DSM-3 and DSM-4 centered the problem of ADD on the issue of "investment, organization and maintenance of attention and effort." What had been a neurobehavioral syndrome related to neurological insult was now a precisely defined but necessarily fuzzy concept of neurocognitive impairment. The center was, as always, clear and indisputable; but the boundaries of the condition were set to expand. During the seventies the non-amphetamine psychostimulant, methylphenidate (Ritalin®), the tricyclic antidepressant imipramine and the antipsychotic drug, thioridazine (Mellaril®) were aggressively promoted for kids with ADD. Before long, the boundaries of the condition would include as "patients" people who would never have come to the attention of

Bradley, or Douglas, or Strauss, let alone Goldstein: intelligent and well-behaved people who had relatively mild problems with inattention and who under-achieved at school or at work.

Slowly, but surely, the diagnosis grew in popularity. Schoolchildren who were not hyperactive at all were said to have “attention deficit disorder” or ADD. During the nineteen-seventies, the prescription of stimulant medications to schoolchildren increased by a factor of three (Safer & Krager, 1983). In 1988, Safer and Krager announced “a consistent doubling of the rate of medication treatment for hyperactive/inattentive students every four to seven years” and in 1987, no fewer than 6% of all public elementary school students in Baltimore County were receiving such treatment. In a few more years, the practice had spread to the secondary schools, and girls began to be treated in ever-greater numbers (Safer & Krager, 1994). By 1996, it was estimated that 1.5 million American children aged 5 to 18, about 3% of American youths, were taking methylphenidate. (Safer, Zito & Fine, 1996) The most recent data, from a cross sectional study of more than 3,000 schoolchildren in the USA, indicated a prevalence rate of 8.7%, which translates to 2.4 million schoolchildren in the USA. Fewer than half of children meeting DSM-IV criteria receive either a diagnosis of ADD or regular medication treatment. Poor children are the most likely to meet criteria for ADD yet are the least likely to receive consistent pharmacotherapy.<sup>4</sup>

Child psychiatrists were following the general trend in psychiatry to rely on drug treatment as a primary treatment modality, but pediatricians and family practitioners were also contributing to a dramatic increase in stimulant prescription. Their collective memory of the terrible amphetamine epidemics of the post-war years faded, and stimulants like methylphenidate (Ritalin<sup>®</sup>) and pemoline (Cylert<sup>®</sup>) were thought to be extremely safe, and not likely to be abused at all. (Neither of these beliefs is strictly true.)

The ADD “movement” reached critical mass in the early nineties when two psychiatrists from Boston, Ed Hallowell and John Ratey, resurrected Hans Huessy’s position on the ubiquity of ADD. Hallowell and Ratey published an intelligent and eminently readable book about adult ADD called Driven to Distraction. The idea of adult ADD virtually exploded on the media horizon, and a virtual cottage industry was spawned, including a new breed of ADD therapists who referred to themselves as “coaches.” “ADD specialists,” ignoring the rule about what happens to someone whose only tool is a hammer, promoted diagnosis absent differential diagnosis. They cultivated expensive machines to measure brain metabolism and how active one is while performing a dull, boring test, how much one’s eyes move about and whether one shuffles one’s feet too much.

There have been some interesting consequences. Expanded interpretation of the “Americans with Disabilities Act” compelled Universities to make accommodations for students with ADD. The testing industry was thrown into turmoil, as students demanded extra time on tests like the SAT’s. For the first time, adults with ADD began to be treated by primary care doctors. The FDA, which had forced manufacturers to clamp down on stimulant production twenty years before, was now pressured to increase production quotas, and spot shortages led to hoarding and near hysteria in some communities. Some old turnips like Obetrol<sup>™</sup>, an obesity drug straight out of the bad old days, were repackaged and marketed shamelessly for the rising tide of ADD children and adults.

The world was coming to realize what Huessy had known all along: that when the condition is broadly defined, ADD is highly prevalent; that patients find the diagnosis quite agreeable, and infinitely preferable to the “personality disorder” or “neurotic” diagnoses they had previously acquired. Simple treatment measures with low doses of psychostimulants or noradrenergic antidepressants are acceptable to patients and quite successful, over the near term, at least. They may make some patients worse, but they feel better, anyway.

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<sup>4</sup> Arch Pediatr Adolesc Med. 2007 Sep;161(9):857-64 Prevalence, recognition, and treatment of attention-deficit/hyperactivity disorder in a national sample of US children. Froehlich TE, Lanphear BP, Epstein JN, Barbaresi WJ, Katusic SK, Kahn RS.



Not everyone, however, has been satisfied with a turn of events that identifies a large segment of the normal population as “disabled.” Few of us felt comfortable with the long lines of schoolchildren lining up at the principal’s office for a noontime dose of Ritalin® or Adderall®. The drug houses spared us this spectacle when they began to formulate long-acting stimulants. What seem to be reasonable accommodations for an ADD student taking the SAT’s looked like “jumping the queue” to everybody else. But no one, save the Scientologists, wanted to rain on the parade. After all, kids need to do better in school. College students need to get their degrees. Graduate students need to finish their dissertations. Workers need to be more efficient. The world is full of dull, boring tasks; much of what we do is the civilian equivalent of sitting in front of a SONAR screen waiting for submarines. So why shouldn’t we try to improve things? We have effective drugs, and we know how to use them safely. Science has been turned to the service, if not of a corrupt capitalist system, at least of the Puritan work ethic. Nat Hentoff took to writing for The Wall Street Journal.

So, the last two decades have seen an enormous expansion of the diagnosis of ADD and treatment with stimulants and similar drugs. The same thing was happening with the new antidepressants: first, they were for patients with significant psychiatric disorders, then for people with comparatively mild disorders, and then, and increasingly, for people with “problems of living.” First mental disorders, then mental problems and finally mental traits. The term “cosmetic psychopharmacology” was coined to describe this new and interesting turn of events. Ritalin®, like Prozac®, became a form of behavioral cosmetic surgery.

There is not the same disapproval of stimulant treatment, these days, that there was a generation ago. But the feelings of the medical community and the thinking community in general, are decidedly ambivalent. The problem is that an expanded definition of ADD includes an enormous number of people, adults as well as children, who are, indeed, weak in their ability to direct attention to dull, boring tasks. We deserve to feel uneasy, however, about a condition, like ADD, whose boundaries are so vague and hard to define.

## WHAT, IF ANYTHING, IS ADD?

The reported prevalence of ADD is likely to excite a sense of urgency among the converted and skepticism among the dubious. ADD is a good example of a medical diagnosis whose prevalence grew as soon as people realized it was there. There are diagnostic fashions and it afflicts more fields of medicine than psychiatry. Our happy, peaceful society is simply afflicted by epidemics of chronic Lyme disease, PTSD, chronic post-concussion syndrome, gluten intolerance, narcissism, autism and ADD. The unparalleled success of this book, in fact, has already led to an explosive epidemic of OC and the authorities are hard-put to restrain it.

It is facile to suggest that ADD is no more than an historical curiosity or an intellectual fraud. Its current popularity is probably over-done, but only a troglodyte would maintain that the condition doesn’t exist, that it shouldn’t be diagnosed from time to time or that successful treatment is illusory. There is an elephant’s graveyard of psychiatric “disorders” that were once fashionable and are now forgotten. ADD may have to endure a few more name changes, but it’s not likely to be consigned to the dustbin of diagnostic history. It is three generations old, and has earned a small measure of respectability. It has weathered its critics. It will probably survive its advocates, too.

What, exactly, is ADD? It’s a relevant question, because with a few modifications it is the answer to, What is OC?

ADD is a constellation of personality traits and cognitive styles that cluster, in pure form, in a relatively small number of people, and in various combinations and permutations in large numbers of people. It is

typical of a class of neuropsychiatric conditions that afflict large numbers of people to a mild degree and small numbers of people to a severe degree.

The symptoms of ADD are *non-specific*. Inattention and restlessness can occur in a host of other conditions, including psychotic disorders, mood disorders, anxiety disorders, personality disorders and developmental disorders. The proper diagnosis of ADD requires the clinician to *exclude* other conditions. One is not always able to do that with confidence.

The symptoms of ADD are very *common*. In one survey mothers rated half of the boys as overactive. In another, teachers rated 75% of the dull children as inattentive, and 30-50% of the brighter children. (Lapouse & Monk, 1958) (Wortis, 1984).

ADD is a mild weakness of the regulatory apparatus of the brain, in particular systems that mediate executive control and error detection. These systems are closely identified with the prefrontal cortex but also reside in the basal ganglia and the cingulum. Their regulatory/executive functions govern the ability to regulate attention, behavior and emotional responding. Although they are very important functions -- the *central executive* of the brain -- they are vulnerable to disruption by an individual's physical or emotional state. You know how easy it is to be distracted when you are upset and how hard it is to stay focused on a laborious task if you're not feeling well. Most of us will be restless when we're impatient or hyperactive when we're having a great good time.

The complexity of the brain's regulatory apparatus makes it unlikely that its formation and maturation is under the control of a single gene. This is consistent with observations that ADD is an inherited condition but not a single-gene disorder. Like many dimensional disorders it is the consequence of multiple genes operating in concert. Like most personality traits and cognitive styles, ADD runs in families and it tends to persist over the life span, albeit in modified form. Like most weaknesses, people learn to adjust to it, more or less.

Years ago, my colleagues and I were impressed by the similarity of ADD patients to patients who had had injuries to the frontal lobes of their brain. What became the frontal lobe hypothesis of ADD was based on the clinical similarities between the two groups of patients: similar problems with distractibility and short attention span, hyperactivity, excitability and low impulse control. ADD patients, like frontal lobe patients, persist in inappropriate behaviors, even when one lets them know the behavior is inappropriate. They may agree that what they are doing is clearly out of bounds, but they continue anyway. In both classes of patients the response to external reinforcers is said to be "sluggish." Both groups have low tolerance for frustration and little ability to delay gratification. They have difficulty controlling their emotional responses. Their mercurial dispositions vary from indolence and inertia to uncontrolled excitement. (Gualtieri and Hicks, 1985b)

ADD, like OC, is dimensional. Its clinical presentation is *variable*. Some ADD kids were hyperactive *in utero*, and some are said to "run since they learned to walk." Others are not hyperactive or impulsive at all, but only inattentive and distractible. Hyperactive kids may turn into lazy, inert adolescents. Girls with ADD are often shy and self-effacing. Some ADD patients are referred by their pre-school teachers. Others are only diagnosed in college or graduate school. Like the learning disabilities, ADD occupies a spectrum of severity, and the outcomes for persons who are mildly or severely afflicted are quite different.

There is a small group of ADD patients, mostly children, whose symptoms are *pervasive*, that is, present in all and every situation. Most such children have additional developmental or neurological problems. Their symptoms are less amenable to drug treatment or to behavioral programming, and the outcome is not nearly so sanguine (Menkes et al., 1967). In adult life, they often have serious mental problems.

The causes of ADD may be *pathological*, the consequence of some kind of brain damage. This was the view in the 1940's. MBD was a neurological disorder.

Later, ADD was recognized as a developmental disorder related to something called *dysmaturation*. That just means that the development of an otherwise normal individual's capacity for self-regulation may be delayed. The development of the frontal lobes of the brain is a long and arduous process and not all of us manage it at the same rate. Boys, for example, do it more slowly than girls do. A human's frontal lobes aren't fully *myelinated* and fully functional until the fifth decade of life. (Yakovlev, 1970; Yakovlev, 1962) It is ironic that frontal lobe maturation is not complete until core rot has begun in lower brain regions.

These days, the majority of children and adults who are diagnosed with ADD just have a relative weakness in their capacity for impulse control, attention and emotional self-regulation. It is a mental problem.

## THE ADD EPIDEMIC

Epidemic is the wrong word to use here, but mild problems with attention, memory, fatigue and anxiety are *endemic*. They are ubiquitous. When we give the NeuroPsychQuestionnaire to perfectly normal people, they invariably describe mild problems in these very areas. See for yourself; the NPQ is at [www.atonc.com](http://www.atonc.com). Those are the problems that psycho-stimulant drugs address and amphetamines aren't the only stimulants out there.

A relevant statistic is that more than 80% of the population in the USA consume pharmacological doses of stimulating beverages every day. The usual culprit is caffeine, an effective short-term stimulant; a caffeine-naïve individual can enjoy 24 hours of steady work, free of performance decrement induced by fatigue, after a 400 mgm dose of caffeine – a couple of lattes, more or less. On the other hand, regular caffeine intake is associated with tolerance, and the only benefit habitual users enjoy is relief from caffeine withdrawal. The same is true of smokers; nicotine is a stimulant similar to amphetamine, but what most smokers appreciate about their next smoke is relief from craving.

Amphetamines are highly effective at enhancing attention and memory, and the effect can be sustained for years as long as the subject takes low doses. This, of course, is the rationale for treating ADD with amphetamine. The problem is that stimulants tend to diminish one's ability to shift attention from one task to another quickly and efficiently. Stimulants help people with dull, boring tasks, but are counter-productive in tasks that require creativity or ideas that are as broad as Nature.

Stimulating drugs are universal. Whether it is qat, coca, betel-nut, alcohol or ginseng, even the non-ADDs among us gravitate towards them. If it were just a matter of an additional burst of physical energy, a brisk walk or a turn on the treadmill would serve as well, but no; the preference is for a burst of pure mental energy. Even the Latter Day Saints, who abjure tobacco, alcohol, caffeine, amphetamines, qat, coca, betel-nut *and* ginseng, have an affinity for extremely high doses of sugar.

The likely explanations for the ADD epidemic, if one is compelled to explain something that is really just the result of diagnostic fashion, are these: electronic media that cultivate stimulation-hunger but not patience; the failure of schools and parents to give children attention training, that is, learning to sit still and listen even when the topic is dull and boring; and a knowledge society, where academic success is over-valued and even dull students are required to spend time on subjects they seem remote from any perceived utility. To these likely explanations one can add a host of spurious ones, like food additives and excess sugar, cigarettes, alcohol and medications during pregnancy, fluoride in the water supply, food allergies, lead, pesticides, lazy parents, lazy teachers, lazy doctors and mendacious pharmaceutical companies. If one works for a pharmaceutical company and is also a parent of an ADD child, he or she is probably lazy *and* mendacious.

Critics say that psychiatrists, obsessed with pathologizing normal behavior, have invented ADD. I suppose the same characters will say that your humble author invented OC. It's not an outlandish proposition; it's half true. We haven't invented ADD, we've just observed something that is happening in the world. An analogy may explain what I mean: ADD is like hypertension, hyperlipidemia, obesity and diabetes, arch-diseases of modern living.

Obesity certainly existed in pre-modern times but it is a much more prominent problem now. Obesity was at one time just thought of as a trait. Now it is properly defined as a medical problem because it will lead to a host of medical conditions; obese individuals usually develop Type II Diabetes, hyperlipidemia and hypertension and are vulnerable to a number of other diseases. The prevalence of obesity and diabetes is the product of a modern world that is sedentary, accustomed to comfort and convenience and afflicted by the ready availability of calorie-rich food.

I think that the cognitive equivalent of calorie-rich food is the ready availability of intense stimulation that is cultivated by modern culture. Avenues for mental stimulation are not hard to find. At the same time, the importance of persevering at tasks that seem dull and boring is under-emphasized. Theories of pedagogy have moved away from the Thomistic tradition, that the purpose of education is to train one's mental faculties. Attention training used to be the central issue of early childhood education: how to sit still, listen and absorb. It was no less than the classroom equivalent of finger exercises, and it was considered so basic to learning that no one seemed to have noticed when it was discarded in favor of the quaint view that teachers need to make education "interesting." The idea that school is anything else but dull, boring work is far-fetched and anyone who thinks otherwise ought to re-read Tom Sawyer.

People seem to think that attentional controls grow with maturation, naturally and inevitably, like one's hair grows or fingernails. Well they do grow, but they are more like a muscle, and need to be exercised against resistance.

## ADD vs OC

Like ADD, OC is a dimensional diagnosis. Its symptoms are non-specific and are shared by many other disorders. They are certainly common problems and also quite variable in their presentation. OC is a polygenic condition that runs in families. Most people learn to adapt and they choose mates who are agreeable to their idiosyncrasies. Certain situations make OC traits more troublesome and certain events may provoke an episode of OCD. OC is also a disorder related to behavioral dysregulation. OC is similar to ADD in many ways.

ADD and OC are both constellations of personality traits and cognitive styles that cluster, in pure form, in a relatively small number of people, and in various combinations and permutations in large numbers of people. They are typical of a class of neuropsychiatric conditions that afflict large numbers of people to a mild degree and small numbers of people to a severe degree. The symptoms of both conditions are extremely common but also quite diverse. They quietly meld into the common, day-to-day weaknesses that everybody has. That's what makes the ADD industry so lucrative and also what accounts for the astonishing popularity of this book.

ADD and OC are opposites with the appearance of similars. ADD is a flaccid attentional muscle and OC is an attentional muscle that has been exercised too much. ADD is a weak central executive. In the OCs, the central executive is intrusive and controlling. The similarities between ADD and OC are superficial, their differences are essential.

What are the differences?

- On a cognitive level, ADDs are distracted by events going on in the outside world. OC's are distracted by events going on inside their heads.

- On a behavioral level, ADD's tend to be disinhibited, or wide-open. OC's are usually up-tight. ADD's are resilient; bad experiences hurt for a while, then roll off their backs. OCs tend to brood. OCs never forget; ADDs forget all the time.
- On an interactional level, ADDs are stimulating but exhausting. OCs are secure and predictable but boring.
- At the level of elementary neurobiology, ADD is a brain problem with central regulation; that is, not enough. OC is also a problem with brain regulation, but *too much*.
- One brain region that is at the heart of both ADD and OCD is the cingulum. The front part of the cingulum is involved with error detection and performance monitoring and also the regulation of attention and emotion. OCs have an over-active cingulum but ADD patients have a cingulum that is less active in performance monitoring and error processing.<sup>5</sup> The OCs, therefore, have a brain region that is overly sensitive to things that are not quite right and the cingulum of ADD patients lets it all just go by.(Brem, Grunblatt, Drechsler, Riederer, & Walitza, 2014)

Neuropsychological studies of ADD and OCD patients show that both conditions are associated with deficits in sustained attention, that is, inattention to dull, boring tasks (e.g., the test of response inhibition, the continuous performance task at [www.atonc.com](http://www.atonc.com)). The attentional problems of the OCD patients, however, have been described as an *epiphenomenon* caused by the overflow of intrusive thoughts. The cognitive deficits in OCD patients result from an attempt to gain control over automatic processes in order to reduce impulsive behavior and lapses of attention. This leads them to over-utilize their cognitive resources which, paradoxically, diminishes their effective control. Their obsessive thoughts overflow and cause an overload on the executive system.(Abramovitch, Dar, Hermesh, & Schweiger, 2012)

*ADDs are distracted by events going on in the outside world. OC's are distracted by events going on inside their heads.*

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<sup>5</sup> The cingulum is the major WM pathway connecting to the cingulate cortex, whose anterior portion is an area which has been repeatedly implicated as abnormal in ADHD, in terms of smaller volumes, slower rate of thinning in adolescence, decreased activity on task-based functional MRI, and decreased functional connectivity. The cingulum has been found to have diffusion abnormalities in ADHD in adults.(Cooper, Thapar, & Jones, 2015)