

1. What, If Anything, Is OC?

We are simply here to observe and to draw inferences from our observations.¹

It's not a good sign when a brain-injury patient describes a symptom one has himself. I shall be frank. *My* brain-injury patient, a new one who came to see me last week, has a quirk that *I* have. He has the habit of responding to questions by saying the precise opposite of what is true. His mother might say, *Are you drawing, Jack?* And he says, *No*, although there he is, drawing away. If he waves his hand in class and the teacher asks him, *Do you want to go to the bathroom, Jack?*, he says *No, of course not*. But then he gets up and goes to the bathroom. Naturally, everyone thinks that Jack is autistic. I know better, because I do the same thing. I don't think of it as a *symptom*, though. It is one of my endearing traits.

If I'm on my way to work, my briefcase and lunch-bag in hand, wearing a tie and it's eight-thirty in the morning, I meet one of my colleagues in the parking-lot. He asks, *Are you on your way to work?* This is what I say: *No. What makes you think I'm on my way to work?* If my daughters and I are in the kitchen at night eating ice-cream, my wife invariably comes in and says, *Aha! So you're all eating ice cream, I see.* I could say, *That's why I fell in love with you, Darling, for your keen sense of observation*, but she knows I won't say that. She knows that I will say, *No, Frances, what makes you think we're eating ice-cream?* Such clever ripostes contribute not a little to the hilarity that suffuses our household.

These days, the girls are older. It is hard to believe that Geni off in college. But they learned at a young age not to ask questions like: *Are you and Mom going out tonight?*, when we're dressed and ready to go out the door, or *Are you going into the library now to smoke your pipe and work on that stupid book?* They know what I would say if they did but they don't think the joke is funny anymore. They're at the age when whatever their father says is unfunny.

To me, it's a joke, and some jokes get funnier with repeated telling, at least to me. It's similar to what Jack, my patient, does. He has a tic. It's a verbal tic, a phrase, word or sound he repeats over and over. It's a complex tic, to be sure, that makes him turn yes to no and up to down. Another psychiatrist might call it a compulsion. Another would say that it's avoidant behavior, a way to keep people at bay, at least the kind of people who ask redundant questions. But I know better; it's just a verbal tic, a mannerism, that Jack does for no good reason. Jack, for all his supposed disabilities, has a mischievous sense of humor.

I consider myself, most of the time, the model of balance and equanimity. I can be a bit fussy sometimes, but I am not a certifiable case of OCD and I certainly am not a wrathful, controlling man, as long as people do right. Nevertheless, I wonder sometimes if I am *obsessed* with OC. I find it everywhere. Maybe that's because it *is* everywhere. Jack, for example. He hadn't really had a brain injury as such, but he was born with an encephalocele, a portion of his right frontal lobe protruding out from the front of his cranium. It's not the kind of thing a neurosurgeon can just put back in as if it were a hernia. The surgery was successful, but it cost the boy a chunk of the right frontal lobe of his brain. Fortunately, when an event like that occurs in a very young child, the

¹ *The Adventure of the Cardboard Box*

rest of the brain just takes over for the missing part, more or less. So Jack was a more or less normal boy, although he had a few bothersome traits. He tended to be inattentive, but he was also obsessed with videogames and hated to be disturbed when he was playing. He was a loner and didn't care much for other children or adults, for that matter. That's why people thought he was autistic. His social skills, however, were quite sound, and he was perfectly able to interact socially when he was so inclined. That wasn't often, though, because society was annoying to him. It made him anxious and obsessive and compulsive. And when someone asked him a question, he knew exactly what he had to say.

As it happened, the day before I met Jack, I saw two new patients who were OC. One was a graduate student who was frantic over his looming dissertation and everything he had to do to get ready for it. There was no reason to think that this brilliant fellow wouldn't do well but he had worked himself into a frenzy. He was so obsessed over the volume of his work that he couldn't think clearly, he would forget things that he had just studied and he felt utterly muddled. He came to me because someone told him that he probably had ADD – attention deficit disorder. Of course, his academic career had been nothing but stellar from grade school on. He already had two Master's degrees and was attending one of the most prestigious graduate programs in the nation. But he was convinced he had ADD. As it happened, he also had the habit of checking his doors and windows at night and his stove a couple of times before he went to school. He also described a lifelong intrusive, repetitive thought: *You're not very smart, you know that, don't you?* As intrusive thoughts go, it was a clever one. Does one answer, *Yes, I knew that*, or *No, I didn't?*

The very next patient was a medical student whose neurologist had told her that her tremor was “psychosomatic.” She was a lovely girl, smart as could be. Her parents were immigrants but her brother was in dental school and her sister was working on her PhD. The medical student did have a tremor, a benign positional tremor. It might compromise her career if she wanted to be a micro-surgeon but she wanted to be a neurologist. The tremor got worse when she was nervous, but, then, most tremors do, and if it bothered her she would do well enough with a small dose of propranolol. She was also a counter and a checker. She was a sweet girl but wound up a bit tight.

The weekend came, and F and I had precious moments in the garden while my daughters went off in their respective directions. At least, I had precious moments in the garden, because F was at her restaurant tending to the usual week-end preparations. I took a break from the weeding and fetched the newspapers from the week before in the special place I keep them. I could catch up on the world at last. The Friday paper first; one should read them in reverse chronological order. One may not get to all of them, so the ones missed, from Wednesday, Tuesday and Monday are old news anyway. It's good to have a system if you want to keep up with the world.

OMG, I said, *there it is again. I must have OC on the brain.* There she was, on page 8, *The Phantom of Fifth Avenue*, a debutante who had inherited untold millions of dollars. She had estates in California and Connecticut and an apartment on Fifth Avenue, but she spent the last twenty years of her life living in a hospital room with the shades drawn. She was in perfect health but she decided to move into a room in a hospital and stay there. Shades of Howard Hughes, right? Except HH didn't collect dolls, and the Phantom did. She commissioned fashion houses to design dresses for her dolls and spent thousands of dollars on their dollhouses. Before she became a recluse she used to take a doll with her on social outings.

Then, on the facing page: a new biography of the pop singer who spent millions on his fabulous ranch and his exotic zoo. He was a shopaholic, a dysmorphophobic and he had a loathsome habit that got him into trouble with the law more than once.

Turn the page: on page 11, an IT guy who predicts that before very long “man and machine will be one.” He believes that living forever is within one's grasp. To that end, he consumes “120 vitamins and supplements

every day, takes nutrients intravenously (so that his body can absorb them better), drinks green tea and exercises regularly.”

I skipped back to page 3, an encomium to math prodigies, lost my nerve and turned to the Friday paper.²

On the first page! Keith (“Superfan”) Franklin, a former dope-addict and burglar, was banned from baseball games at the University of California at Irvine, despite his extraordinary dedication to the team. He’d come to the games decked out in “a full get-up of UC-Irvine gear – including fingernails painted with the team’s signature blue and gold colors.” His devotion to the “Anteaters,” the baseball team, included shouting maniacally for nine innings, accompanying the team on road trips and helping the ground crew roll out the tarpaulin when it rained. When more temperate fans complained that he was loud, boorish and annoying, the school administration banned him from home games. The administration ruled that he had “stretched the rules of normal fan behavior.”³

I set the paper down and went back outside. Thursday, Wednesday, Tuesday and Monday would never get read. Newspapers are good to set down among one’s flowers to control the weeds. Then you cover them up with a bit of mulch.

THE GREAT DETECTIVES

Perhaps I am a bit OC, but then many of us are, and almost all of us have had an OC experience or behavior at one point during our lives. It isn’t obsessive to be concerned about OC, either. OC is something that pops up all over, if one knows what to look for. For example, F and I both like detective stories. Is every great detective OC who isn’t a degraded alcoholic?

For several years there was a TV series about a detective named Monk, who was played by Tony Shaloub. Monk was germ-phobic and afraid of milk, ladybugs and food touching on his plate. He was also quite clever and his attention to detail helped him solve cases that stumped the regular police. Monk, though, was not the only fictional detective who walked on the OC side. Hercule Poirot was fastidious about his waxed mustache and patent-leather shoes, he was punctual to a fault and was uncomfortable if his bank balance wasn’t exactly 444 pounds, 4 shillings, and 4 pence. He was also a hypochondriac, preoccupied with his digestion and prone to sea-sickness and air-sickness. Poirot, too, solved baffling crimes with his penetrating intellect and powers of acute observation.

Monk and Poirot were OC, we assume, because they were born that way; OC is, after all, a heritable trait. Batman, on the other hand, was obsessed with bats because he was frightened by bats in a cave when he was a little boy.

Being OC isn’t a requirement for fictional detective status. Miss Marple, Judge Dee and Adam Dalgliesh were just fussy; not a comedic flaw but much preferred to tortured alcoholics like Kurt Wallander, Henry Hole and John Rebus; or to Lord Peter Wimsey, who was fussy *and* had PTSD.

Lord Peter’s library was one of the most delightful bachelor rooms in London. Its scheme was black and primrose; its walls were lined with rare editions, and its chairs and Chesterfield sofa suggested the embraces of the houris. In one corner stood a black baby grand, a wood fire leaped on a wide old-fashioned hearth, and the Sèvres vases on the chimneypiece were filled with ruddy and gold chrysanthemums.⁴

That a fictional detective must be vulnerable, eccentric or borderline certifiable is a literary cliché we owe to Arthur Conan Doyle, who was a Scottish physician and an odd duck in his own right. Doyle endured a hostile-

² WSJ, June 1, 2014; Walter Vatter, Edward Kosner, Alexandra Wolfe, Jordan Ellenberg.

³ WSJ, May 31, 2014. Erica E Phillips and Ben Cohen.

⁴ Dorothy Sayers, *Whose Body?*

dependent relationship with Sherlock Holmes and kept trying to kill him off to pursue his true interest, which was spiritualism. Doyle believed in fairies. Whether he was obsessed with fairies I can't say, but Holmes was certainly OC, a hoarder, for one thing. He may also have had an eating disorder and was addicted to tobacco and cocaine. His modern diagnosis would be Asperger's syndrome, for his awkward social manner and hyper-rationality. *I was never a very sociable fellow*, he once said, *Always rather fond of moping in my rooms and working out my own little methods of thought.*⁵ As we shall learn, Asperger's syndrome, a form of autism, is closely linked to OC.

Whatever the appropriate diagnosis, Holmes' perceptual abilities were astonishing and the power of his intellect was superhuman, although narrowly confined. Smart as he was, neither he (nor Doyle) seemed to understand the difference between deductive and inductive reasoning. He did, however, contribute to the clinical vocabulary of medicine: *If you hear clapping on a cobblestone street in London, think horse, not zebra*, he said, once. In medicine, a "zebra" still refers to an unlikely diagnostic possibility. He also summarized the essence of the clinical method of differential diagnosis: *When you have eliminated all which is impossible, then whatever remains, however improbable, must be the truth.*⁶

OC fiction is not always so incisive. Sometimes, it can be wrong-headed, if hilarious. There was a movie in 1997 about a misanthropic fellow who wrote steamy romance novels. The character, Melvin Udall, was played by Jack Nicholson. If he weren't such a good actor, one would think he was acting from life. Udall had a few odd characteristics; he required several bars of Neutrogena soap to wash his hands. He even announced to his psychiatrist that he was OCD, as if the shrink couldn't guess. He has a memorable line that occurs when he is accosted by a fan:

ZOE
I can't resist. You usually move through here so quickly and I have so many questions I want to ask you. You have no idea what your work means to me.

MELVIN
What's it mean?

ZOE
That somebody out there knows what it's like to be... taps her head and heart) in here.

MELVIN
Oh God, this is like a nightmare.

ZOE
Aw come on, just a couple of questions -- how hard is that? How do you write women so well?

MELVIN
I think of a man and take away reason and accountability.

The movie is about Melvin's redemption, so to speak, as he defies his inclinations and rescues his gay neighbor, Simon (played by Greg Kinnear), his regular waitress, Carol, and her little son, who had some kind of respiratory ailment. This being a Hollywood movie with Carol played by Helen Hunt, Melvin fell in love and Helen

⁵ The Adventure of the Gloria Scott

⁶ The Blanched Soldier

Hunt did, too. The movie fades as Melvin, redeemed by true love, deliberately steps on a crack in the sidewalk, something he had always assiduously avoided.

Melvin probably had an obsessive-compulsive personality, not OCD. He had many OC traits, to be sure, but he was also an angry, controlling man who was homophobic and misogynistic. Hollywood knows how to solve such problems but I wish I did. One of my patients had been married to a controlling man and it had taken years to get rid of him. When she saw the movie, she shouted out to Helen Hunt, *Don't do it, girl*.

When a good OC pops up in the world literature, it isn't long before he appears on the silver screen. There have been more than 250 Sherlock movies. There are also a series of books that were turned into movies about a cultured man, a psycho-analyst, in fact, who was multilingual and also a gourmand. He had odd tastes, though. It was the compulsion to eat human parts, sometimes raw, but more often prepared in creative ways. Did you know, for example, that human liver is best served with fava beans and chianti? He even ate one of his patients, something that, these days, would get one in trouble with the Medical Review Board. The analyst, Hannibal Lecter, was a serial killer. It is probably true that most serial killers are driven by bizarre obsessions and compulsions, but I can assure you that hardly any psycho-analysts are cannibals. Nevertheless, the idea that OC individuals are inordinately intelligent is a stereotype that authors and movie producers alike find appealing.

There have been six movies, at my count, about a sea-captain who was obsessed with an albino marine mammal who had bitten off one of his legs. The story was written by Herman Melville in 1851, and he referred to the sea-captain's problem as a "monomania." That, presumably, is because the sea-captain was obsessed with only one particular thing, although it was a big thing, to be sure. The story is silent on the point, but one assumes the whale ate the rest of Captain Ahab in the end.

But, as in his narrow-flowing monomania, not one jot of Ahab's broad madness had been left behind; so in that broad madness, not one jot of his great natural intellect had perished. ... so that far from having lost his strength, Ahab, to that one end, did now possess a thousand-fold more potency than ever he had sanely brought to bear upon any reasonable object.

There have been more than six movies about a Danish prince, Hamlet, who was tortured by "disproportionate mental exertion" and whose exertions reflected the inconsistency of his character.

Hence we see a great, an almost enormous, intellectual activity, and a proportionate aversion to real action consequent upon it, with all its symptoms and accompanying qualities. This character Shakespeare places in circumstances, under which it is obliged to act on the spur of the moment: Hamlet is brave and careless of death; but he vacillates from sensibility, and procrastinates from thought, and loses the power of action in the energy of resolve.⁷

Hamlet didn't have overt symptoms of OC, like Adrian Monk and Hercule Poirot, or if he did, they are not explicit in the play. He wasn't fussy, like Lord Peter Wimsey. He wasn't a controlling man, like Melvin Udall. His powers of observation were not particularly acute; he didn't even notice Polonius hiding behind the "arras" until the poor fellow gave himself away by yelping "What, ho!" At that point, as you know, Hamlet ran him through, right through the "arras."

Hamlet had subtle signs of OC, but they are closer to the germ of the condition. He could act impulsively, *obliged to act on the spur of the moment*, and impulsivity is an OC trait; but he also had the OC trait of

⁷ Lectures and Notes on Shakspeare and Other English Poets - By Samuel Taylor Coleridge (Lecture given in 1818. Lectures collected by T. Ashe. First Published 1883)

procrastination -- *he vacillates from sensibility* – seemingly the opposite of impulsiveness. OC characters, in real life, are full of paradoxes like that.

Hamlet had the perfect chance to dispatch his uncle in Act III but he demurred. He had to kill him at just the right time. So he waited until the last scene of Act V to kill him, and during the ensuing mêlée everyone else managed to get killed as well. Shakespeare has been criticized for the bloody ending of his greatest play, but he captured exactly the kind of schemozzle an OC can get himself into, and everyone else, too. To the OC, the perfect is the enemy of the good. Pursuing the perfect, he makes a hash of everything.

Most of the characters in the play thought that Hamlet was addled, but he wasn't. He did have visions and what psychiatrists call "command hallucinations," but it was his *girlfriend* who went insane. It's possible the poor girl came unbalanced because Hamlet killed her father behind the "arras," but he didn't help much by making so many stupid puns. OC's, as it happens, love puns. In fact, hardly anyone likes puns except OCs.

Hamlet was not OC in a character-turkish way. He had what I think is the essence of OC: his analytical mind was so active it would tangle and thwart clear vision and proper action.

Thus conscience doth make cowards of us all;
And thus the native hue of resolution
Is sicklied o'er with the pale cast of thought,
And enterprises of great pith and moment
With this regard their currents turn awry,
And lose the name of action.

WHAT, IF ANYTHING, IS OC?

You've probably heard someone say, *He's so OCD, or, It's just my OCD again*. Maybe you've said it yourself. Not to quibble, but it's probably not OCD at all. It's OC and there's a difference.

OCD is a mental disorder but OC isn't a disorder at all. OC refers to obsessive and compulsive traits that occur in about a third of the population; that means that if you're not OC yourself, there's a 50:50 chance the next person you meet will be. OC also refers to obsessive thoughts and compulsive behaviors, which are virtually universal.

It's a disservice to say that OC is the sign of a *mental disorder*. OC is the way many people are most of the time and the way almost all of us are some of the time. Almost everyone has had an OC experience at one time or another. If we were to confine ourselves to the pathological cases, it would prevent us from understanding the irrepressible teases, ardent fans, unhappy graduate students and clever detectives in our midst; not to mention the man you live with who walks around the house at night turning off every light that doesn't have a person reading directly underneath, or the woman who insists you take a clothespin to your socks before you throw them in the laundry-basket. We shall take a broader approach to OC. It will illuminate characters like Hamlet and Melvin Udall and probably a number of characters in your life. The way OC expresses itself in day-to-day lives is more interesting than any mental disorder. OC doesn't account for all of the problems we make for ourselves, but a lot of them for sure and most of them, probably.

OC is a way of thinking. It expresses itself as OC traits, like fussiness, worry, perfectionism and control. Some OC traits are useful, endearing even. Others are peculiar or annoying. Still others can be debilitating or even monstrous. A way of thinking with so many different expressions is worth our time and consideration.

If I were to approach the topic from a conventional perspective I would begin with OCD, **obsessive-compulsive disorder** and a related condition, the **obsessive-compulsive personality disorder**. OCD is a *mental disorder* because (a) it inflicts distress on the bearer and/or (b) it disables him from doing more important things. OCPDO is a *personality disorder*, because the bearer just is that way. If there is any distress involved it is what he inflicts on the people around him. Such distinctions may seem arbitrary, even trifling, but *To a great mind, nothing is little*.⁸

Obsessions: persistent ideas, thoughts, impulses, or images that are experienced as inappropriate or intrusive and that cause anxiety and distress. The content of the obsession is often perceived as alien and not under the person's control.

Compulsions: repetitive behaviors or mental acts that are carried out to reduce or prevent anxiety or distress and are perceived to prevent a dreaded event or situation.

As it happens, psychiatrists have studied OCD rather energetically, and much of what I know about OC is based on research that was done in patients with OCD. OCD and OCPDO will pop up now and again in these pages and for the curious I have included the current DSM definitions of OCD and OCPDO as well as the Y-BOCS, a test psychiatrists use to evaluate OCD in their research. Feel free to take the Y-BOCS yourself, or give it to someone you know. If your boyfriend scores high enough on the Y-BOCS, you can refer him to the National Institute of Mental Health. A better idea is look for another boyfriend.

The closest psychiatry comes to OC traits are listed in the DSM as the **obsessive-compulsive spectrum**. It is a way to give a category to something that doesn't fall into a category at all. The spectrum acknowledges that there is much more to OC than OCD or OCPDO. For example, OC traits almost always occur in patients with autism, Asperger's syndrome, social anxiety, eating disorders, and mysterious medical conditions like chronic fatigue and fibromyalgia. They frequently occur in patients with ADD, anxiety, depression, alcoholism and substance abuse. They are also common in patients with traumatic brain injuries, toxic brain exposures, dementia, manic-depression and schizophrenia. We often encounter them in patients with intellectual handicap and neurogenetic syndromes like the Lesch-Nyhan syndrome and the Cornelia de Lange syndrome.

Among the characters we have met so far, Monk is a certifiable OCD. He manages to get the job done, but there is no denying the severity of his symptoms and the discomfort they cause. Melvin Udall had the OCPDO. Hollywood redeemed him, but notice there hasn't been a sequel.

The other detectives we have met are OC, or, in conventional terminology, "on the OCD spectrum." Batman is a techie and works out compulsively. He sleeps *upside-down*. He never seems to have got up with a woman or a man. Sexual inhibition, as it happens, is an OC trait. Poirot wasn't interested in women, either. He was OC but not OCD – fussy but not controlling or socially awkward, self-absorbed and condescending in his manner, especially towards the English. Sherlock wasn't OCD in spite of all his obsessions and compulsions. He had Asperger's syndrome.

In my career with patients, I have encountered OC traits much more frequently than OCD or the OCPDO. I have seen them in patients with many different neuropsychiatric disorders: repetitive, stereotyped actions, intrusive thoughts, ruminative anxiety (brooding), irrepressible fixed ideas, the obsession with being in control, and also a host of little idiosyncrasies and eccentricities a patient will acknowledge only if you ask. OC traits occur so frequently and in association with so many disorders, I decided that the idea of an "OCD spectrum" was unwieldy if not untenable.

Along the way I observed how common OC traits were outside the clinic. I discovered OC traits in the daily newspaper, in comic books and detective stories, among my friends, acquaintances and, unhappily, in my own family. Our second daughter, for example, had a phobia of escalators. My wife thinks she got it from me.

⁸ A Study in Scarlet

Riding on an escalator with the little children, in airports usually, because there aren't any escalators in Chapel Hill, I always think it is hilarious to say, *Did I ever tell you about the time I was trapped on an escalator and it took six hours for the men to get us off?* The other two girls learned to ignore this when they were young, but Nora was a serious girl even when she was little, and she would usually say, *But why didn't you just walk off the escalator?* To which I would reply, *Yes, that's why it was so frightening!* I can picture poor Nora in thirty years trying to explain to her analyst why she has an antipathy to escalators. Or, more likely, to silly men.

OC traits like the compulsion to tell the same stupid joke whenever one rides on an escalator or to sleep upside-down are the expression of OC, a way of thinking, a way the mind is organized, in some people at least. It took this psychiatrist many years for this psychiatrist to *induce* from his observations of OC traits that there was more to OC than conventional medical thinking had recognized.

OC is the way some minds work, the way some brains, especially intelligent ones, are organized. What does that mean? It could mean a lot of things, because students of brain approach the subject from many different perspectives. Most of them we shall set aside for now, although genes and neurotransmitters, conditioning and social learning, the cingulum and the amygdala, will turn up before very long. The essence of OC, however, can be captured by just two aspects of brain organization. They are known to be relevant to OCD and two closely related disorders, social anxiety and autism. By extension, they must be relevant to OC. The first has to do with the brain's functional anatomy. The second has to do with how the anatomy is connected.

SEVERAL MINDS

OC is the tendency of one component of psyche, the *analytic-theoretic mind*, to intrude upon the proper functions of the other minds in one's head. It is the tendency of an overly analytical mind to inflict itself upon what is better left to emotion, intuition and habit.

That there are several "minds" in one's head is a shorthand way to refer to *complex integrated neural systems*. The brain has many such systems, the neural networks that allow parts of brain to function together in a coherent way. Only a few are sufficiently important and autonomous to warrant referring to them as minds in their own right. Because they are also based in more-or-less discrete anatomical regions, we can also take the liberty of calling them "brains." One is the *social brain*, a mental system that is occupied with who we are and why and who other people are and why. How one feels about them is a function of one's *emotional brain*, the source of all passion. It is usually thought of as a mischief-maker but that is just wishful thinking. There is also a *somatic brain* that occupies itself with information that burbles up from one's *soma*, the body, one's physical self.⁹ It integrates its data with all the other complex neural systems and tells the soma what to do. Finally, there is a *habit system*, a network that sees to getting things done.

When all these minds are operating in balance and harmony we experience fleeting moments of equanimity. What makes such moments evanescent is that one or another of the several minds is usually acting up. It is just in the nature of things for one part of brain or another to oscillate its networks in a way that doesn't synchronize very well with the other parts. Most people have minds that are balanced some of the time, some people have balance most of the time but no one, save the Saints and High Lamas perhaps, have minds that are balanced all the time.

⁹ *Soma* is used throughout these pages to refer all parts of the body that are not the central or peripheral nervous system. I don't mean to be pretentious by using a Latinism. I can find more subtle outlets for my pretensions. There simply isn't another word that refers to all the body parts that are not nervous.

We are taught that the likeliest mind to go out of balance is one's emotional brain, which only exists to be restrained by the powers of reason. There are certainly people who fall into that category, and some of them deserve to be restrained, if not by reason then by the authorities. But for most of us, the emotional brain is a docile fellow, like a hedgehog who prefers living in the undergrowth and hiding in a small burrow. He may give you a bite if provoked but rolling up into a ball is his usual *modus operandi*. The lesson of OC is that among the humans, more threats to equanimity arise from the analytical mind, with its endless ruminations and dire predictions. The analytical mind inflicts its anxieties on mental systems that prefer to behave as *pares inter pares*, equal participants in the great game. The purpose of that game, for brain-as-a-whole, is equipoise. To the analytical mind, it is *control*.

I don't have to list the entanglements to which the analytical mind disposes but they extend beyond the acrimonious disputes of academics, the corruption of Art by an excess of theory and the failure of thought-ridden young men like Hamlet to commit themselves to endearing lovers, like Ophelia. They include most of the great wars and the genocidal rivalries of religious sects. The most violent conflicts have been driven by *ideas*. Even science, the critical manipulation of ideas and knowledge, is prone to excess. In science we are told that *Any mingling of knowledge with values is unlawful, forbidden*.¹⁰ Values and meaning are the domain of the social/emotional brain. Analytical mind deems them lesser creations.

OC, therefore, is how one's analytical mind is so active it gets tangled up and thwarts clear vision and proper action.

... enterprises of great pith and moment
With this regard their currents turn awry,
And lose the name of action.

THE CONNECTOME

The second organizing principle that is relevant to OC is how the brain is *connected*. Brain **connectivity** refers to the short and long nerve fibers that connect neurons to one another, and that connect the different parts of brain. In OC, the connections that serve high intelligence, the analytical mind, are especially robust.

OC is associated with high intelligence, especially intelligence of the analytical kind. It is curious that if one wants to identify a character as a great brain, an author makes him a bit eccentric. The analytical mind is a thing of incisiveness and clarity, but it is a common assumption that, left to its own devices, it will do something odd or nefarious. To most of us it is only common sense to believe that *I would rather be governed by the first two thousand people in the Boston telephone directory than by the two thousand people on the faculty of Harvard University*.¹¹ I would worry if the students didn't agree. Why is it such a common prejudice that high intelligence is associated with eccentricities or worse? Is there anything to it? Is the analytical mind necessarily so self-absorbed it always tangles itself up? *I am a brain, Watson. The rest of me is a mere appendix*.¹²

It's not only the great detectives who are OC and highly intelligent. Hollywood and the comic books, as well as children's stories, present great villains in similar wise. Think of any number of wicked witches, the Mekon, Blofeld, LeMaire,



¹⁰ Jacques Monod (1970), *Chance and Necessity: Essay on the Natural Philosophy of Modern Biology*

¹¹ William Buckley

¹² *The Adventure of the Mazarin Stone*

Rastapopoulos and Hannibal Lecter. They are controlling, unempathic and self-absorbed, and also really smart.

That a high intellect must be vulnerable, eccentric or borderline certifiable is a literary cliché we owe to Shakespeare himself. Coleridge could have been talking about OC when he said that it is *a common oppression on minds cast in the Hamlet mold, and is caused by disproportionate mental exertion*. Hamlet was tortured by intellectual vacillation. He was the exemplar of how tangled one can be by one's own thoughts. Hamlet captured something essential about the way many of us are. OC is the way a mind organizes itself when its various parts are connected in a particular way. What makes that happen? I won't speculate at this point, but I have observed that the analytical mind is at least as prone to excess as one's emotional mind can be, or one's somatic mind. The power of reason tames one's emotions and instincts, and that is supposed to be a *good thing*. That the power of reason is equally prone to stray beyond the boundaries of common sense or simple humanity is not something they will tell you in college. You have to learn it from movies or comic books.

It is no accident that minds cast in the Hamlet mode are thought-ridden, self-absorbed and highly intelligent. It is because of the way brain is connected within itself. Long-range nerve tracts connect the soma with brain and the lower parts of brain with each other. The seat of abstract intelligence, the cerebral cortex, is constructed differently even from the parts immediately below. In the cortex there are no nuclei, ganglia or brain centers as there are in the lower brain. The cerebral hemispheres are organized into an innumerable mass of **minicolumns**, arranged perpendicular to the surface and parallel to each another. They are connected within themselves and with other minicolumns by short-range connections. Such connections are well-suited for the fast calculations that are the basis of analytical intelligence. Short connections within and among the minicolumns are fast, discrete and concise.

They contrast with the long connections that link the nuclei, ganglia and brain centers that comprise one's social/emotional brain, the somatic mind and the habit system. Long-range connections oscillate slowly and follow tortuous, branching courses to reach all of the regions of brain. Their slow vibrations are good for integrating all the basic functions of mind and soma. They find it easy to resonate in harmony. Doing so, they are the grounding of our equipoise and the source of balance.

Short connections mediate abstract intelligence. Long connections resonate with psychological functions that are less concise, like affiliation, friendship and trust, love and happiness and, above all, meaning. The way they come together, parts of brain constructed and connected in their particular ways, is sometimes the occasion of embarrassment. The analytical mind is connected to the brain regions immediately beneath by a large number of **loops**, circuits that extend, for example, from the cortex to the basal ganglia to the thalamus and then back again to the cortex. These loops have the unenviable chore of integrating signals that arise in disparate brain parts and that oscillate in networks that are constructed in different ways.

Loops are small neural networks that vibrate continuously from A to B to C and then back to A. They continue vibrating, or oscillating, until the inputs from parts A, B and C are synchronized, or integrated. One particular loop, we have learned, is apt to be especially active in patients with OCD. OCs have an OC loop that takes longer and works harder to integrate data from multiple sources.

What we believe happens is this: a thought or feeling becomes entangled in the OC loop. It goes around and around, reverberating in an inharmonious way. Disparate inputs can't be synchronized as quickly as they ought to be. Until they are, they can't generate a coherent signal, which is what we experience as a coherent thought, feeling or action. In case this sounds obscure, let me illustrate. You've had an unpleasant thought sometime in your life, a thought that keeps coming back to mind, unwelcome as it may be, unproductive and usually disturbing. These are called **intrusive thoughts**, a simple kind of obsession. Such thoughts are the

expression of a reverberating OC loop. An input from somewhere in your head can't be digested and the loop just keeps reverberating in an disharmonious way. It's dyspepsia of the brain.

OC is the tendency for thoughts, feelings and actions to become embroiled in reverberating loops. They generate heat but lose the name of action.

The mind is organized, with loops, short- and long-range connections. The connections operate in different individuals at different strengths and frequencies, in varying shades of harmony or discord. The diversity of our **connectome**, the sum of all our mental connections, accounts for the astonishing diversity of our thoughts feelings and actions. It also explains the diversity with which OC is manifest. Some of us are distracted by fast calculations and become confused and anxious. Many psychiatrists interpret that as ADD, but it isn't; it's OC. Some of us are impatient with the slow, ponderous operations of lower brain regions. Psychiatrists call them Aspergerites, but they, too, are OC.

Neural connections, long- and short-range, and loops, too, allow the several minds in one's head to work reciprocally, each respecting the proper domain of the other and relying on its special attributes. They are in close and constant contact and their connections are fluid. The fluidity of their connections, however can be viscous or turgid. Two-way connections, designed for mutuality and reciprocity, can be one-way and oppressive. In Hamlet's case, it was his analytical mind that was turgid with deep thought. As it happens, the analytical mind is particularly vulnerable to getting stuck.

THE MEANING OF OC

Where does OC come from and what purpose does it serve? There are plenty of theories, but they are usually applied to OCD and that narrow view has limited one's understanding of what OC really is. Obsessions and compulsions are said to be a means to control one's anxiety or one's aggressive impulses. The theory is wrong because obsessions and compulsions *cause* anxiety and because they are more often the cause of aggression than its consequence. Obsessions and compulsions are said to be "harm-avoidance strategies," which may explain why some OCD patients are germ-phobic and wash their hands so frequently. The theory doesn't account for people who like to add up the numbers on the license plates of cars or keep their volume control knob on an even number. Another theory has it that OC behaviors evolved because they "have the potential to be beneficial to society." Aside from the fact that virtually everything has the *potential* to be beneficial, it's not likely that checking one's work so many times that it never gets done, or collecting old newspapers and egg-cartons is beneficial to anybody, let alone to society. Another idea is that in the old days, as proto-humans tramped around the savannah, it was a good idea to hoard food in preparation for times when supplies would be scarce. A bright idea but one that attributes to the proto-humans a level of food-preservation technology that I don't think they possessed.

It is customary to ascribe human frailties to the persistence of traits that arose during the evolution of our primate ancestors. We are presumed to have inherited only their nasty traits. According to evolutionary theory, OC is inherited from primitive minds riven with anxiety and wrath or obsessed with order and control. It is more likely that OC is the adumbration of a new race, gradually coalescing as the analytical mind evolves beyond its present, beta-testing stage. The anxieties and wrath associated with OC may only be the pains of its birthing. We look forward, then, to a world where meaning is driven by information, freedom arises from order and tolerance from equality. Or will it be a world festooned with information but devoid of meaning, orderly but unfree, intolerant of everything but sameness?

Such questions occur to me as I reflect on the amusing eccentricities, the anxieties and sometimes the hateful acts that afflict patients I have seen. But how best to explain it? We could begin by analyzing the personalities of fictional detectives or comic-book heroes and villains. That would be a shallow exercise, although it is preferable to analyzing the traits of presidents, potentates or plutocrats. Such exertions usually do no more than reveal the prejudices of the analyzer. I prefer a less analytical approach.

We could examine what psychiatrists and psychologists have to say about OC. Brain scientists, too. We shall take an occasional excursion into brain and learn how its circuits can turn into reverberating, self-referential loops of useless worry. We shall even mention the molecules in one's brain and that so easily come out of balance. There are genes, too, that are said to predispose individuals to particular variants of OC. They must be quite numerous, those genes, and quite potent in effect, because so many people are afflicted, to one degree or another, with obsessive anxieties and repetitive, compulsive behaviors.

There is one more way. Understanding the mind ought to begin by examining the lives of ordinary men and women and the events that abrade them. That, anyway, is my bias. I am not one to dazzle the reader with the complexity of the brain, how it has more neurons than there are stars in the universe or more synapses than there is sand on the beach. If the brain were as complex as most brain-writers would have you believe, it would be even more difficult to get up in the morning, put on your shoes and go to work. Not to mention getting home at the end of the day and having to explain why you forgot to pick up the laundry. Nor am I one for models of the brain based on hydraulic systems, clocks, telephone switchboards, digital computers, quantum computers or rain forests. No, I am one who thinks the only cogent model for brain and the way it works is people. Yes, people, some more complicated than others, at least on the surface, but at heart, *In most cases, people, even wicked people, are much more naive and simple-hearted than we generally assume. And so are we.*¹³

Of course, that is my bias because I am a physician, and the problems of ordinary men and women fill my days. Many of my patients are OC. Their problems are usually transient and easy to fix. Sometimes, though, they are debilitating, and I have known a few who were monsters. Is it possible that they all arise from the same source? If that is so, evolution, having constructed our analytical minds, has some explaining to do.

*This is what I propose. Let me run over the principal steps. We shall approach with an absolutely blank mind, which is always an advantage. We shall form no theories. We are simply here to observe and to draw inferences from our observations.*¹⁴

¹³ Fyodor Dostoevsky, *The Brothers Karamazov*, Part one, Fyodor Pavlovich Karamazov

¹⁴ *The Adventure of the Cardboard Box*