Overcoming Dyslexia

By: Betsy Morris Reporter Associate Lisa Munoz Research Associate Patricia Neering
May 13, 2002

(FORTUNE Magazine) – Consider the following four dead-end kids.

One was spanked by his teachers for bad grades and a poor attitude. He dropped out of school at 16. Another failed remedial English and came perilously close to flunking out of college. The third feared he'd never make it through school--and might not have without a tutor. The last finally learned to read in third grade, devouring Marvel comics, whose pictures provided clues to help him untangle the words.

These four losers are, respectively, Richard Branson, Charles Schwab, John Chambers, and David Boies. Billionaire Branson developed one of Britain's top brands with Virgin Records and Virgin Atlantic Airways. Schwab virtually created the discount brokerage business. Chambers is CEO of Cisco. Boies is a celebrated trial attorney, best known as the guy who beat Microsoft.

In one of the stranger bits of business trivia, they have something in common: They are all dyslexic. So is billionaire Craig McCaw, who pioneered the cellular industry; John Reed, who led Citibank to the top of banking; Donald Winkler, who until recently headed Ford Financial; Gaston Caperton, former governor of West Virginia and now head of the College Board; Paul Orfalea, founder of Kinko's; Diane Swonk, chief economist of Bank One. The list goes on (see table, "Dyslexic Achievers"). Many of these adults seemed pretty hopeless as kids. All have been wildly successful in business. Most have now begun to talk about their dyslexia as a way to help children and parents cope with a condition that is still widely misunderstood. "This is very painful to talk about, even today," says Chambers. "The only reason I am talking about it is 100% for the kids and their parents."

What exactly is dyslexia? The Everyman definition calls it a reading disorder in which people jumble letters, confusing dog with god, say, or box with pox. The exact cause is unclear; scientists believe it has to do with the way a developing brain is wired. Difficulty reading, spelling, and writing are typical symptoms. But dyslexia often comes with one or more other learning problems as well, including trouble with math, auditory processing, organizational skills, and memory. No two dyslexics are alike--each has his own set of weaknesses and strengths. About 5% to 6% of American public school children have been diagnosed with a learning disability; 80% of the diagnoses are dyslexia-related. But some studies indicate that up to 20% of the population may have some degree of dyslexia (see box, "How to Help").

A generation ago this was a problem with no name. Boies, Schwab, and Bill Samuels Jr., the president of Maker's Mark, did not realize they were dyslexic until some of their own children were diagnosed with the disorder, which is often inherited. Samuels says he was sitting in a school office, listening to a description of his son's problems, when it dawned on him: "Oh, shit. That's me." Most of the adults FORTUNE talked to had diagnosed themselves. Says Branson: "At some point, I think I decided that being dyslexic was better than being stupid."

Stupid. Dumb. Retard. Dyslexic kids have heard it all. According to a March 2000 Roper poll, almost two-thirds of Americans still associate learning disabilities with mental retardation. That's probably because dyslexics find it so difficult to learn through conventional methods. "It is a disability in learning," says Boies. "It is not an intelligence disability. It doesn't mean you can't think."

He's right. Dyslexia has nothing to do with IQ; many smart, accomplished people have it, or are thought to have had it, including Winston Churchill and Albert Einstein. Sally Shaywitz, a leading dyslexia neuroscientist at Yale, believes the disorder can carry surprising talents along with its well-known disadvantages. "Dyslexics are overrepresented in the top ranks of people who are unusually insightful, who bring a new perspective, who think out of the box," says Shaywitz. She is co-director of the Center for Learning and Attention at Yale, along with her husband, Dr. Bennett Shaywitz, a professor of pediatrics and neurology.

Dyslexics don't outgrow their problems--reading and writing usually remain hard work for life--but with patient teaching and deft tutoring, they do learn to manage. Absent that, dyslexia can snuff out dreams at an early age, as children lose their way in school, then lose their self-esteem and drive. "The prisons are filled with kids who can't read," says Caperton. "I suspect a lot of them have learning disabilities."

Dyslexia is a crucible, particularly in a high-pressure society that allows so little room for late bloomers. "People are either defeated by it or they become much more tenacious," says McCaw. Don Winkler, a top financial services executive at Bank One and then at Ford Motor, remembers coming home from school bloodied by fights he'd had with kids who called him dumb. Kinko's founder, Paul Orfalea, failed second grade and spent part of third in a class of mentally retarded children. He could not learn to read, despite the best efforts of parents who took him to testers, tutors, therapists, special reading groups, and eye doctors. As young classmates read aloud, Orfalea says it was as if "angels whispered words in their ears."

In his unpublished autobiography, Orfalea says that to a dyslexic, a sentence is worse than Egyptian hieroglyphics. "It's more like a road map with mouse holes or coffee stains in critical places. You're always turning into blind alleys and ending up on the wrong side of town." He finally graduated, but not before being "invited to leave...practically every high school in Los Angeles." One principal counseled his mother to enroll him in trade school, suggesting that Orfalea could become a carpet layer. His mother went home and tearfully told her husband, "I just know he can do more than lay carpet."

Charles Schwab was very strong in math, science, and sports (especially golf), which helped him get into Stanford. But anything involving English "was a disconnect." He couldn't write quickly enough to capture his thoughts. He couldn't listen to a lecture and take legible notes. He couldn't memorize four words in a row. He doesn't think he ever read a novel all the way through in high school. He was within one unit of flunking out of Stanford his freshman year. "God, I must just be really dumb in this stuff," he used to tell himself. "It was horrible, a real drag on me." So horrible that Schwab and his wife, Helen, created a foundation to help parents of children with learning disorders.

It was as if Schwab and the others were wearing a scarlet letter: D for dumb. Until about five years ago Chambers kept his dyslexia a secret. As CEO, he says, "you don't want people to see your weaknesses." One day a little girl at Cisco's Bring Your Children to Work Day forced him out of the closet. Chambers had called on her, and she was trying to ask a question before a crowd of 500 kids and parents. But she couldn't get the words out. "I have a learning disability," she said tearfully.

Chambers cannot tell this story without choking up himself. "You could immediately identify with what that was like," he says. "You know that pain. She started to leave, and you knew how hurt she was in front of the group and her parents." Chambers threw her a lifeline. "I have a learning disability too," he said. In front of the crowd, he began talking to her as if they were the only two people in the room. "You've just got to learn your way through it," Chambers told her. "Because there are some things you can do that others cannot, and there are some things others can do you're just not going to be able to do, ever. Now my experience has been that what works is to go a little bit slower...."

It was the kind of coaching that proved crucial to nearly everybody we talked to: mentors who took a genuine interest, parents who refused to give up, tutors who didn't even know what dyslexia was. Winkler recalls that his parents refused to let their fear of electrocution stand in the way of his fixing every iron and toaster in the neighborhood. "I wired every teacher's house," he says. "I got shocked all the time." His parents owned a mom-and-pop shop in Phillipsburg, N.J. His mother cleaned houses to pay for his tutoring. Chambers, who read right to left and up and down the page, says his parents, both doctors, claim they never once doubted his abilities, even though "I absolutely did." His parents' faith was important to him. So was his tutor, Mrs. Anderson. Even today Chambers remembers tutoring as excruciating: "It might have been once or twice a week," he says, "but it felt like every day." Nonetheless, he adds, "Mrs. Anderson had an influence on my life far bigger than she might have ever realized."

If you could survive childhood, dyslexia was a pretty good business boot camp. It fostered risk taking, problem solving, resilience. School was a chess game that required tactical brilliance. Schwab sat mostly in the back of the room. But he was conscientious and charming, and gutsy enough to ask for extra help. Boies took a minimum of math and avoided foreign languages and anything involving spatial skills. Orfalea worked out a symbiotic relationship with classmates on a group project at USC's Marshall Business School; they did the writing, he did the photocopying (and got the germ of the idea that led to Kinko's).

At Vanderbilt Law School, Samuels spent a lot of time in study-group discussions. "That's how I learned the cases," he says. His friends helped with the reading; he paid for the beer. Better than most people, dyslexics learn humility and how to get along with others. It's probably no accident that Kinko's, Cisco, and Schwab have all been on FORTUNE's list of the best places to work. "I never put people down, because I know what that feels like," says Branson, who seldom asks for a resume either, "because I haven't got one myself."

By the time these guys got into business, they had picked themselves up so many times that risk taking was second nature. "We're always expecting a curve ball," says Samuels. Schwab remembers how hard it was to watch his friends receive awards and become "General Motors Scholars, Merit Scholars, Baker Scholars. I was so jealous," he says. Later on, though, some of the prizewinners had trouble dealing with adversity.

If, as kids, the dyslexic executives had learned the downside of their disorder inside out, as adults they began to see its upside: a distinctly different way of processing information that gave them an edge in a volatile, fast-moving world. Bill Dreyer, an inventor and a biologist at Caltech, recalls a dinner-party conversation years ago in which he told a colleague how his dyslexic brain works: "I think in 3-D Technicolor pictures instead of words." "You what?" replied the incredulous colleague. The two argued the rest of the night about how that was possible.

Dreyer believes that thinking in pictures enabled him to develop groundbreaking theories about how antibodies are made, and then to invent one of the first protein-sequencing machines, which helped to launch the human genome revolution. "I was able to see the machine in my head and rotate valves and actually see the instrumentation," he says. "I don't think of dyslexia as a deficiency. It's like having CAD [computer-aided design] in your brain. I bet these other guys see business in 3-D too. I bet they see graphs and charts of how trends will unfold."

In his office, Chambers goes from wounded to animated as he heads to the dry-erase board to show that's exactly what he does. "I can't explain why, but I just approach problems differently," he says. "It's very easy for me to jump conceptually from A to Z. I picture a chess game on a multiple-layer dimensional cycle and almost play it out in my mind. But it's not a chess game. It's business. I don't make moves one at a time. I can usually anticipate the potential outcome and where the Y's in the road will occur." As he's talking, he's scrawling a grid depicting how Cisco diversified into switches, fiber optics, and wireless by acquisition, internal development, or

partnering. It was a picture he used to explain his vision to the board of directors back in 1993, when he was an executive vice president and Cisco was a one-product company. It became a road map. "All we did was fill in the chart," he says.

Barely pausing, he's drawing again, this time a picture showing the evolution of networking, including the commoditization of telephone services. He first drew this picture in 1995. "I'm not always right," he says. He did not foresee the extent of last year's economic downturn or the subsequent collapse in demand. "But we knew there would be industry consolidation and a chance for us to break away."

Like Chambers, Schwab fast-forwards past the smaller, logical steps of sequential thinkers. "Many times I can see a solution to something and synthesize things differently and quicker than other people," he says. In meetings, "I would see the end zone and say, 'This is where we need to go.' " This annoys sequential thinkers, he says, because it shortcuts their "rigorous step-by-step process."

Diane Swonk's former boss and mentor at Bank One always thought Swonk had a "third eye." Swonk, an economist, says it's dyslexia. Although she has worked in the same building for 16 years, she still has a hard time figuring out which track her commuter train is on and which way to turn when she leaves the office elevator. She can't dial telephone numbers. She has a hard time with arithmetic, reversing and transposing numbers.

But she revels in higher-level math concepts, and in January 1999, when almost everyone was bemoaning the global financial crisis and fretting about the stock market--then trading at around 9300--she told the Executives Club of Chicago that the Dow would break 11,000 by year-end. The prediction seemed so surprising that the moderator made her repeat it. She was right then and right again last year, when she insisted--even after Sept. 11--that the economic downturn would not be as bad as feared. Why not? Because consumers would keep spending. Which they did. "I'm not in the consensus a lot," says Swonk. "In fact, being in the consensus makes me really uncomfortable."

Sometimes dyslexics are utterly incapable of seeing things the way others do. Craig McCaw could not understand conventional wisdom that said cellphones would never amount to much. "To me it just seemed completely obvious that if you could find a way not to be tethered to a six-foot cord in a five-by-nine office, you'd take it. Maybe if your mind isn't cluttered with too much information, some things are obvious." McCaw built the first almost-nationwide cellular company, which he sold to AT&T in 1994 for $11.5 billion. Now he's trying to build a global satellite system to make the Internet as pervasive and portable as cellphones--another seemingly impossible feat.

Bill Samuels Jr. couldn't see the improbability of turning tiny Maker's Mark into a national brand in 1975, even though bourbon sales were in a decade-long slump. "I can't write," says Samuels, "but I can organize old information into a different pattern easily." The old pattern was to advertise to the trade. The new one: to bypass both the trade and Madison Avenue with homespun ads to consumers that Samuels wrote himself. Within ten years Maker's Mark had become "perhaps the most fervently sought bourbon in the U.S.," according to Ad Age. "Many times in business, different is better than better," says Samuels. "And we dyslexics do different without blinking an eye."

David Boies turned dyslexic deficits into advantages. Because of his difficulty reading from a script, he makes an outline of his basic points and commits it to memory. Then, unlike trial lawyers who work from a script, he is free to improvise. That enables him to be more dramatic, more flexible. He can break the cardinal rule of cross-examination, which is never to ask a question if you don't know the answer (it messes up the script). He can

wander around themes, trap witnesses. "It cuts down on the time the witness has to think and predict where you're going," says Boies.

On a recent trip to Boston, Richard Branson arrives in a spray of champagne to open a Virgin Megastore. He is a true business celebrity, having come straight from hosting a party in London celebrating the honorary knighthood of Rudy Giuliani (Sir Richard, too, is a knight) and going later that evening to address the blue-blood Chief Executives' Club of Boston.

Branson's success and his dyslexia seem like such a disconnect. He never made it through high school. He has a wickedly unreliable memory; because his mind goes blank at the most inopportune times, he writes important things--like names--in black ink on the back of his hand. He won't use a computer. He's terrible at math. Until recently, he confesses, he was still confusing gross profit with net. He'd been faking it, but not too well. One of his board members finally pulled him aside to give him a mnemonic, or memory aid, which often comes in handy for dyslexics. Pretend you're fishing, the board member said. Net is all the fish in your net at the end of the year. Gross is that plus everything that got away.

Branson approaches business completely differently from most. "I never, ever thought of myself as a businessman," he tells the Boston CEOs. "I was interested in creating things I would be proud of." He started Virgin Atlantic because flying other airlines was so dreadful. He knew he could provide better service. There's an irony here, says Branson: "Look, if I'd been good at math, I probably never would have started an airline."

Branson is not the only dyslexic CEO who has tried to bluff his way through problems. For years, Orfalea says, "I was a closet bad reader...I never showed anybody my handwriting until I was in my 40s." He cultivated a casual, can't-be-bothered-with-it management style that allowed him to avoid the written word. If he received a long letter, for instance, "I'd just hand it to somebody else and say, 'Here, read it.' " He mostly avoided the corporate office and instead went from Kinko's to Kinko's, observing, talking to customers, making changes. He wasn't goofing off; he was vacuuming up information in his own way--orally, visually, multisensorily.

For most dyslexic business leaders, reading is still not easy. They tend to like newspapers, short magazine articles, summaries. Says Chambers: "Short reading is fine. But long reading I just really labor over." His staff knows to deliver summaries in three pages or less, the major points highlighted in yellow. McCaw says he can read and write. "But to do either requires a lot of energy and concentration." He and the others are information grazers. "You learn for self-preservation to grasp the maximum amount of meaning out of the minimal amount of context," says McCaw, describing his reading like this: "You don't really view the piece of paper. You scan. You may pull something out of it," all the while alternating between "apparent disinterest and maniacal focus." Once McCaw makes short work of the short stack of papers in his in-box, they disappear. When government investigators asked to see his files during a routine antitrust inquiry in 1985, there were none. "Craig and a piece of paper do not remain together for very long," his COO told the investigators.

Boies calls dyslexia "primarily an input problem." He is highly selective about the information he takes in and constantly makes judgments about what's most important: the five or ten most relevant cases, the key points in those cases. Always, always, Boies says, he's looking at the big picture, at how the story will end. "You are always trying to figure out where something's going--to put it in context," he says. "It's harder to just read it straight." Seeing the big picture early on may be the dyslexic's best shortcut: If you know where you're going, you can figure out how to get there. "One of the things dyslexics do is learn to get the big picture, to grasp things very quickly rather than seeing the itty-bitty part," says Shaywitz. "They have no choice. It's a survival skill. But I've been struck by the perceptions and relationships they're able to see."

Dyslexics learn to soak up information in other ways than print. "When you're not focusing, you're grabbing at the abstract information in the atmosphere," says McCaw. "You don't even know where it comes from. But the receptors are highly reactive because they're trying to overcome what we'll call the lack of reading input." Schwab learned the plots and characters of Moby-Dick, A Tale of Two Cities, and other great books by reading Classic comics, which told the stories in pictures. Chambers prefers voicemail to e-mail because "it's so much easier for me to understand and visualize by hearing." Boies flourished in law school (Yale, magna cum laude) in part because he could learn by listening. "We all associate reading with knowledge and wisdom," he says. "But the Socratic Dialogues are dialogues. Teaching tools. There is a difference between knowledge and the means of acquiring knowledge."

Managing dyslexia is a lifelong effort. Winkler, who now teaches a leadership course at the University of Michigan Business School, starts his day with brain exercises he calls Wink's Warm-Ups. Sometimes he uses multiplication and division flash cards. Other mornings he practices "trigger" words, like "won't" or "didn't," that confuse him. The College Board's Caperton says he almost always has to redial phone numbers, often more than once. Swonk rechecks her calculations five times.

Chambers relies on his wife, Elaine, to help him navigate a phone book. He's terrible with written directions. He'll never forget the wild ride he gave Tom Ridge one night. Ridge, then governor of Pennsylvania, had come to Silicon Valley on an economic development mission. After the event, he asked Chambers for a ride to the restaurant where they were to have dinner. "I thought, 'Oh, no!' " says Chambers. He knew immediately that he would get lost. Sure enough, he led Ridge and an entourage of police escorts on a wild goose chase, crossing lanes and stopping at not one but two gas stations for directions. The next day he bought a GPS. "I can laugh about it now," says Chambers.

The Cisco CEO does something else every successful business leader should do, but often doesn't: He builds a team to shore up his weaknesses. "I will not spend as much time on individual details," Chambers says, so he hires detail people "who are able to go A to B, B to C, and to take the components apart." McCaw says dyslexics need a translator "who can take that conceptual or intuitive idea and get it into a form that's usable." Because he's more conceptual than analytical, he needs someone who can communicate with people who are the opposite. "One on one, you just drive them crazy," he says. "You come up with a pronouncement, and you have no facts to back it up. It just irritates the daylights out of them. You really need a translator with a foot in both camps."

At Maker's Mark, Samuels surrounds himself with "very verbal people who like to communicate what they're doing." Even his production vice president and his CFO--positions that don't normally attract chatty types--are that way because, he says, "I knew I'd have to find people who would tolerate my need to be talked to a lot." Orfalea recalls that his mother used to console him by saying that when everybody grows up, "the A students work for the B students. The C students run the businesses. And the D students dedicate the buildings."

Possible clues to the differences between A students and dyslexics can be seen under a microscope at the Beth Israel Deaconess Medical Center in Boston. Some of the most interesting research on the disorder occurs here and at the Shaywitzes' Yale center. In Glen Rosen's Harvard lab, a slide shows how dark clouds of neurons have strayed from their normal path, probably during fetal development, and ended up in tiny clumps called ectopias (ectopia is Greek for "out of place"). Rosen, an associate professor of neurology, theorizes that the wandering neurons cause a "cascade of connectional differences" in brain wiring. Because the ectopias prevent some nerve fibers from going where they should, they migrate at random, wiring regions of the brain not normally connected. Scientists believe this might explain why no two dyslexics are alike and why one, like Branson, might be terrible at math but a good writer, and why another, like Schwab, might be quite the opposite.

Researchers used to think that many more boys than girls were dyslexic. (Schools were identifying four times as many boys as girls a decade ago.) But an ongoing study at Yale of 400 Connecticut children indicates that the numbers are about equal. The Shaywitzes believe that most discrepancies in diagnosis are social: Dyslexic girls tend to behave better and work harder than dyslexic boys, and therefore often escape detection.

Magnetic-resonance imaging at the Yale lab has shed new light on how the brain works, bolstering the belief that dyslexics have difficulty decoding the smallest meaningful segments of language, called phonemes. (The word "cat" has three phonemes: kuh, aah, and tuh.) When dyslexic subjects are asked to sound out words, MRI technology, by measuring blood flow, shows relatively less activity in the back of the brain and more activity in the front. In good readers, most of the activity occurs in the back of the brain.

Despite all the unknowns, dyslexia is clearly better understood and treated today than it was a generation ago. Yet in a high-pressure society where straight A's and high test scores count for so much, the disorder still carries a heavy penalty. Boies says nothing has been harder for him than watching the struggles of two of his own children who are dyslexic. "It is awful. Awful. The most difficult thing I've ever done," he says. One of the boys is in high school. The other graduated from Hamilton College summa cum laude and from Yale Law School--despite childhood testing, recalls Boies, that "was not very optimistic in terms of what he would be able to accomplish." Boies wishes that society allowed more room and more time for late bloomers. "In this environment," he says, "you get children who think they are masters of the universe, and children who think they are failures, when they're 10 years old. They're both wrong. And neither is well served by that misconception."

Where would we be, after all, if the bar had been set so high that none of these guys--not Schwab, not Chambers, not Boies, not Branson, not Dreyer, not McCaw--could have cleared it?

FEEDBACK bmorris@fortunemail.com