

Howard Gardner's campaign against logic.

MULTIPLE INTELLIGENCE DISORDER

By James Traub

Howard Gardner first realized that he had struck a chord in the national psyche when he gave a speech to private-school administrators on his new theory of "multiple intelligences" and saw the headmasters elbowing each other to get into the hall. That was in 1983. Since that time, Gardner, a Harvard professor who still carries a book bag and wears a ski parka over his tweed jacket, has blossomed into a genuine academic superstar. He has won a MacArthur "genius" grant; his books have been translated into 20 languages; and he gives about 75 talks a year. There are now "M.I. schools" all over the country. His ideas have achieved extraordinary currency in even the most rarified reaches of the educational world; when the directorship of one of New York's most prestigious private schools recently came open, almost every candidate for the job mentioned Gardner in his or her one-page educational-philosophy statement. In the 15 years since the publication of Gardner's *Frames of Mind*, multiple intelligences has gone from being a widely disputed theory to a rallying cry for school reformers to a cultural commonplace. And, amazingly, it has done so without ever winning over the scientific establishment.

Gardner's central claim is that what we normally think of as intelligence is merely a single aspect, or two aspects, of a much wider range of aptitudes; he has counted eight so far. Thus we have exalted the attribute measured by IQ tests—the hyperlogical style Gardner half-jokingly calls the "Alan Dershowitz" model of intelligence—and have slighted our creative and interpersonal gifts. Of course, the primary question about this theory is whether or not it's true. But an intriguing secondary question is why it's so wildly popular. "I think the whole intelligence establishment and the psychometric tradition were ready to be attacked by somebody who was credible," Gardner told me the first time I met him, in the midst of a two-day speaking tour in Chicago last December. "We know that kids who do well on tests are smart, but we also know that a lot of kids who don't do well on tests are getting it. The question is not how smart people are but in what ways people are smart." This is, of course, an immensely appealing idea.

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Gardner has offered an explanation for academic failure in which the problem lies in the system of measurement rather than the student or the teacher; more broadly, he has given intellectual legitimacy to critiques of the test-driven meritocracy and of the high-IQ elite it fosters. Multiple intelligence theory clearly serves many purposes. That makes it powerful, but not necessarily valid.

Psychometrics hasn't changed much since Alfred Binet devised a test at the turn of the century to predict which French children would succeed or fail in school. The instruments we now use to test a child's "intelligence quotient" measure essentially the same aptitudes that Binet did—memory, vocabulary, spatial thinking, the ability to draw analogies and solve puzzles—because these are the aptitudes historically associated with success in school and in professional life. While psychometricians disagree about the extent to which intelligence is an inherited trait rather than a result of environment and upbringing, there is broad consensus around the idea that intelligence is a single entity that can be measured with fairly great accuracy. The various mental aptitudes are understood as aspects of a single underlying trait called *g*, for "general intelligence."

Howard Gardner has approached the subject of intelligence from an entirely different angle, one that combines scientific research and speculation with personal experience. Gardner is a polymath, with a breadth of interests unusual in his field. As a boy, he was a serious pianist and a student of composition; as a young scholar at Harvard, where he has spent his entire professional life, he worked with Nelson Goodman, the philosopher of aesthetics. In one of his first books, *The Arts and Human Development*, published in 1973, Gardner noted that the developmental model created by the great Swiss psychologist Jean Piaget applied only to "those mental processes that culminate in scientific thought, an end state that can be expressed in logical terms." Gardner looked instead at the development of the cognitive processes involved in creative work. Several of his subsequent books have explored the thought processes of great artistic figures. Gardner had also begun to study brain-damaged patients at Boston's Veterans Admini-

stration Hospital. He found that many of them had suffered devastating damage to a core intellectual function that had nevertheless left other functions intact—so that some aphasics who could barely comprehend speech could nevertheless recognize a metaphor or even tell a joke. This fit with an emerging consensus in neuroscience: namely, that the brain operates in “modular” fashion, with autonomous systems devoted to different mental acts.

Gardner built on these insights in *Frames of Mind*. Rather than accepting that intelligence tests captured intelligence, he drew up a series of criteria from a wide range of disciplines and assigned the title “intelligence” to whatever mental traits satisfied them. In order to make Gardner’s final cut, an aptitude had to have been isolated, or spared, in instances of brain damage; had to furnish instances of prodigies or idiots savants; had to have a unique developmental and evolutionary history; and so on. These intelligences were almost wholly independent of one another; there was no master trait—no *g*. The seven winners were “linguistic” and “logical-mathematical”—the two already recognized by psychometricians—plus “musical,” “spatial,” “bodily kinesthetic,” “intrapersonal,” and “interpersonal.” Gardner has since added an eighth, the “naturalist intelligence,” which is the ability to make distinctions and to form classes among objects. “Existential intelligence” has been a candidate for several years, but Gardner has not yet admitted it to the pantheon.

Gardner failed to persuade his peers. George Miller, the esteemed psychologist credited with discovering the mechanisms by which short-term memory operates, wrote in *The New York Times Book Review* that Gardner’s argument boiled down to “hunch and opinion.” And Gardner’s subsequent work has done very little to shift the balance of opinion. A recent issue of *Psychology, Public Policy, and Law* devoted to the study of intelligence contained virtually no reference to Gardner’s work. Most people who study intelligence view M.I. theory as rhetoric rather than science, and they’re divided on the virtues of the rhetoric. Steven Ceci, a developmental psychologist at Cornell, praises Gardner as “a wonderful communicator” who has publicized “a much more egalitarian view of intelligence.” But he points out that Gardner’s approach of constructing criteria and then running candidate intelligences through them, while suggestive, provides no hard evidence—no test results, for example—that his colleagues could evaluate. Ceci adds: “The neurological data show that the brain is modular, but that does not address the issue of whether all these things are correlated or not.” Track-and-field athletes, he notes, may have special gifts in one particular event, but they will score better than the average person on every event. Psychological tests show the same kind of correlations.

Gardner describes this conventional view of intelligence as Cartesian rather than Darwinian. Cartesians, he argues, see the mind in strictly rational and ahistorical terms. “The Darwinian view,” he says, “is that this is a crazy-quilt group of faculties that we have here, and

they’ve dealt with survival over hundreds of thousands of years in very different environments. Literacy only existed twenty-five hundred years ago. What does it mean to develop a whole theory of intelligence that didn’t even exist three thousand years ago? Moreover, given that we now have computers that will do our rational behavior for us, it’s an open question what the intelligences are going to be that are valued fifty years from now. It might be artistic; it might be pointless kinds of things.” Why should we accept a definition of intelligence that “took a certain scholastic skill—what it meant to be a good bureaucrat a hundred years ago—and make that the quintessence of intelligence”?

But that is, in a way, precisely the problem with Gardner’s theory. Intelligence is not a crisp concept but a term of value—indeed, the ultimate term of value. Some in Gardner’s corner, like his mentor and colleague Jerome Bruner, say they wish Gardner had employed a more neutral term like “aptitude.” But if Gardner hadn’t used “intelligence” he wouldn’t be the colossal figure he is today. Gardner does not shy away from the “political” dimension of his argument. “My claim that there are seven or eight Xs is not a value judgment,” he told me. “It’s my best reading of the biological and cultural data. But my decision to call them ‘intelligences’ is clearly picking a fight with a group that thought it, and it alone, could decide what intelligence was.”

There may well be validity to Gardner’s claim that core mental aptitudes are more autonomous from one another than psychometricians like to believe. But the reason psychologists don’t measure the elements of “bodily kinesthetic” intelligence isn’t that they doubt the elements exist—it’s that they don’t think the elements matter. Some societies may be structured around musical or athletic or spiritual attainments, but ours isn’t. This is where Gardner’s quarrel lies. Like Robert Coles, the author of *The Moral Intelligence of Children*, and Daniel Goleman, who wrote the wildly popular *Emotional Intelligence*, Gardner believes that we have submitted too much to the tyranny of logic. What he has elaborated over the years is the most scientifically credible and deeply pondered of the various assaults on the hegemony of logic. It’s an extraordinary polemic, but it’s still a polemic. And so the question it leaves us with is: Are we too preoccupied with cultivating the old-fashioned intellectual gifts, or are we not preoccupied enough?

The psychometric establishment was no match for *Frames of Mind* in the court of public opinion. Gardner had offered a vision of human nature that spoke eloquently to public disillusionment with the scientific, technocratic worldview. Although Gardner had almost nothing to say about the practical applications of his theory, he had provided a paradigm that opened up new vistas for the education of children. From the outset, educators passed *Frames of Mind* around like samizdat. Tom Hoerr, the headmaster of a private school in St. Louis, told me that he

bought the book soon after it was published, read it with mounting excitement, and then spent months meeting after school with his faculty to discuss it chapter by chapter. A group of teachers in Indianapolis drove 14 hours to talk with Gardner about creating a school based on his philosophy. Gardner didn't have a philosophy, and yet his reticence about the world of practice had the effect of vindicating almost any departure from the traditional curriculum or traditional pedagogy made in his name.

And so began the astonishing second life of *Frames of Mind* as a template for the transformation of the schools—a transformation much in evidence today. Open up a copy of *Education Week* and you'll see ads for conferences on the "Student at Risk" and "Restructuring Elementary Schools" and "Training for Trainers"—all with presentations on M.I. theory. One progressively minded educator recently told me, "Howard is the guru, and *Frames of Mind* is the bible." Few of the teachers and administrators I talked to were familiar with the critiques of multiple intelligence theory; what they knew was that the theory worked for them. They talked about it almost euphorically. To Dee Dickinson, an educator and consultant in Seattle, *Frames of Mind* offered a "metatheory" that tied together all the effective teaching strategies she had been promoting. "Here was a new way of looking at human capacities," she said, "and a new way of identifying people's strengths and finding effective ways of helping people use those strengths." Gardner appealed to the teachers' intuitive sense that children learn in different ways, and the teachers responded to Gardner's more explicitly political agenda of democratizing human gifts. Tom Hoerr said that what he learned from Gardner was that "working with other people, working with yourself, knowing other people, is a form of intelligence." Hoerr's own motto is: "Who you are is more important than what you know."

M.I. has now spawned a burgeoning cottage industry of consultants and manuals and videotapes. Several publishers have an entire sideline of Gardneriana, and I sent away for material from several of them. One of the items I received was *Celebrating Multiple Intelligences*, a teachers' guide written by Hoerr and his staff at the New City School, one of the most highly regarded M.I. schools. The book consists of a series of lesson plans in the various intelligences, further divided according to the students' ages. In one exercise designed to stimulate the interpersonal intelligence of students from the first through third grades, children form a circle and throw a ball of string back and forth, each time saying something complimentary about the recipient. The "learner outcome" is: "Children will focus on expressing positive comments to peers who they may or may not know well." Every exercise comes with "M.I. Extensions" designed to stimulate some other intelligence—write songs about the activity, play charades to illustrate the activity, and, above all, talk about how you felt about the activity. The sensitivity toward the variety of children's abilities is connected to a broader preoc-

cupation with diversity. In order to "look at issues of prejudice and discrimination relating to disabilities, race, gender, and religion," the teachers devised an experiment in which "each child spent six hours a day being blindfolded, wearing ear plugs, sitting in a wheelchair, or having limited use of arms and hands." It lasted five days.

Here we come to the heart of the problem with multiple intelligences—not as theory, but as practice. M.I. theory has proved powerful not because it's true but because it chimes with the values and presuppositions of the school world and of the larger culture. When theories escape into the world, they get used in ways that their inventors could scarcely have predicted or even approved. Gardner hasn't been quite sure where his responsibility lies in such matters. He told me that he cannot be the "policeman" of the world he set into motion, though he has, increasingly, been its poster boy. Gardner has begun to speak out against some of the more extreme uses of his theory, and critics like educational historian Diane Ravitch have urged him to do more. When I showed Gardner copies of some of the exercises in *Celebrating Multiple Intelligences*, he scrutinized them carefully, frowned, and said, "The only answer I can give to this is: I would certainly not want to be in a school where a lot of time was spent doing these things."

Gardner himself is a rigorous thinker, and he now takes pains to talk about "the school virtues." He often describes himself as a "disciplinarian," by which he means that he believes in the traditional academic disciplines. The intelligences, he says, are not academic ends in themselves, but means by which legitimate academic ends may be reached. For example, if a child is not particularly strong in "logical-mathematical" intelligence, the math teacher should seek a medium in which the child feels more comfortable—language or even physical movement. In *Multiple Intelligences*, a book of practical advice published in 1993, Gardner writes, "Any concept worth teaching can be approached in at least five different ways that, roughly speaking, map onto the multiple intelligences." The model school that he sketches in the book has much in common with progressive schools generally. Students work with one another as much as with the teacher; they design and carry out long-term projects rather than completing daily assignments; they seek to master concepts rather than absorb information; they spend time in real-world environments. What's different about an M.I. school is that it observes a rigorous equality among the intelligences—no "hierarchizing" of language and logic.

Whether that's desirable or not depends in part on whether you think the schools are turning out too many Dershowitz-like whiz kids or too few. Having visited several dozen schools over the last decade or so, I would suggest the answer is clearly "too few." Maybe in Japan, or even in France, are schools producing students who are too narrow; the problem in the United States is that

students are too shallow. M.I. can, in theory, be a means of teaching deeper understanding, but it's at least as likely that it will be used in the service of a specious sense of "breadth." Chester Finn, an educational reformer and former Reagan administration official, describes M.I. pedagogy as the cognitive version of the multiculturalist view that school should offer a celebration of diversity. Harold Stevenson, a psychologist at the University of Michigan, says, "What they're trying to say is, 'You may not be able to do academic things, but you move well, or you're very good at music or spatial intelligence.'" Whatever Gardner himself intends, M.I. theory legitimizes the fad for "self-esteem," the unwillingness to make even elementary distinctions of value, the excessive regard for diversity, and the decline of diligence.

Gardner and other progressive educators are surely right that traditional pedagogy, at least as it is practiced in most schools, leads to superficial understandings and the confusion of recitation with real knowledge. Good teachers challenge their students at the deepest possible level; they understand that the mastery of facts and dates is a means to an end, not an end in itself. But it's a powerful means. And it may be better for schools to err on the side of too much of it rather than too little.

There are now hundreds of schools that claim to be based in whole or in part on M.I. pedagogy. Educational journals carry glowing accounts of schools "turned around" by M.I. A researcher working for Gardner says that she finds that trivial uses of the pedagogy are giving way to more serious ones. Gardner himself guessed that, if I were to visit 50 M.I. schools, "you'd see a lot more schools that are indistinguishable from other schools than you would schools that are Mickey Mouse"—not exactly a stirring defense. Still, he said, enough schools are using his principles wisely to demonstrate the potential power of M.I.

In the middle of this past school year, I spent a day at the Key Learning Center in Indianapolis, probably the most famous of the M.I. schools. I had expected Key to be one of those schools where kids learn everything in seven or eight ways, jumping up and down in math class and singing their way through English. In fact, the math and science classes I sat in on looked perfectly familiar. Still, M.I.'s influence was as conspicuous as the drawings of the intelligences that line the entrance corridor. Every student spends as much time on music and art as English or social studies. Students are not graded. They receive, instead, "pupil progress reports" in which their academic improvement, their level of motivation, and their "performance along the developmental continuum" are measured in terms that can't be plotted on invidious bell curves.

Peter Reynolds, a bright, mop-haired seventh-grader, was assigned to serve as my "docent." Peter talked about school in a way that I couldn't have imagined doing in seventh grade. What he liked about Key, he said, was the opportunity to "interact" with people, not only other kids, but also the adults in the school. Peter

explained that every year, starting in kindergarten, students are expected to devise a project and present it to teachers and peers. In first grade, he had made a study of his pet rats and talked about how they reproduced, how they used their teeth, how they responded to different stimuli. All of the presentations were videotaped, so he had an archive of his work from the age of five.

Peter happened to be presenting his project that day. He had gone to Romania with his father and a friend, and he put a crude oak-tag map up on a stand, showed photographs of the trip, and talked about the people they had met. Most of it was pitched at the level of "it was really nice" and "it was really interesting." On the other hand, I was impressed by what Gardner would have called Peter's interpersonal intelligence. He was calm and forthright, and his classmates listened respectfully and asked questions. The whole school, in fact, had a very civilized and noncompetitive atmosphere; there was none of the waving of hands and shouting "me, me, me" that I remember from junior high. Then again, what's so terrible about a little self-aggrandizing intellectual enthusiasm at age 13?

The school did have a few semi-farcical touches. There was a "flow" room designed to foster the state of unselfconscious engagement that people attain at moments of peak creativity—a practice that rested on a theory devised by Mihaly Csikszentmihalyi, a psychologist who works closely with Gardner. Kids were playing computer games, "Parcheesi," or "Guess Who?"—the kind of activities I'm happy to have my seven-year-old do at home but wouldn't expect to be part of a curriculum. But the Key school was not absurd in the way that educational traditionalists imagine. It was a serious-minded place, and the kids I met seemed enthusiastic and engaged. On the other hand, if they were engaged in deep understanding, I must have missed it. The eighth-grade "linguistics" class I sat in on read through a passage in *Life On The Mississippi* without getting within hailing distance of its meaning. The school's ambitions almost seemed to be elsewhere—in fostering a sense of personal maturity, in a genuine commitment to music, in making the children conscious of their own strengths.

What the Key school is arguably about is the fostering of a new kind of child and thus of a new kind of person—less linear and more "well-rounded," less competitive and more cooperative. This is a monumental ambition, but it's actually not far from Gardner's own vision. Something grandiose lurks beneath Gardner's modesty and care—that's why he insisted on using that provocative word, "intelligence." Back in Chicago, I heard him tell spellbound special-ed teachers that we are living at the edge of a paradigm shift. "This is a new definition of human beings, cognitively speaking," he said. "Socrates defined man as a rational animal; Freud defined him as an irrational animal; what M.I. theory says is that we are the animal that exhibits the eight and a half intelligences." •