The Theory of Multiple Intelligences: As Psychology, As Education, As Social Science Howard Gardner

Howard Gardner gave this address on the occasion of his receipt of an honorary degree from José Cela University in Madrid, Spain and the Prince of Asturias Prize for Social Science.

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I have no trouble reconstructing the steps that led to my promulgation of the theory of multiple intelligences (MI theory). At least in retrospect, those seem clear. At the same time, I have <u>no</u> recollection of what may be the most crucial question: how or why I decided to cast my discussion in terms of 'intelligences' rather than some less inflammatory characterization. In my remarks today, I will call how the theory came into being, and then discuss it from the perspective of three different disciplinary areas: As Psychology, as Education, and as Social Science.

Autobiographical Notes

If I had only a few moments to give my personal biography, it would run like this. Born in Scranton, Pennsylvania in 1943; son of German Jewish immigrants, who succeeded in coming to America just before they would likely have been rounded up by the Nazis and killed; growing up in that small coal-mining city, as a studious, inquiring, and musical youth; excited intellectually by the atmosphere of Harvard College in the 1960s; married early, with three children; divorced and remarried with an additional child; have remained at Harvard and in Cambridge, Massachusetts for half a century.

If I had only a few moments for an intellectual autobiography, it would run like this. Always attracted more to language, history, the arts and the humanities, than to mathematics or the sciences. Yet, paradoxically, tended to do better in math and science standardized tests than in the humanities. As the proverbial Jewish boy who hated the sight of blood, was destined to become a lawyer. In college, mesmerized and seduced by the life of the mind. Started to study history but then switched to 'social relations', an unusual and now largely forgotten academic amalgam of sociology, anthropology, and psychology. Was first entranced by the psychological and historical writings of Erik Erikson, himself a student of Sigmund and Anna Freud. But then met and was equally inspired by the cognitive-psychological orientation of Jerome Bruner, himself a student of Jean Piaget and, more distantly, of Lev Vygotsky. In 1971, finished doctoral studies in developmental psychology. Worked on three books while a doctoral student. Did full time research for fifteen years thereafter, before joining the faculty at Harvard, at present the Hobbs Professor of Cognition and Education.

Once we focus on my research as a postdoctoral fellow, the origins of MI theory begin to emerge. As a doctoral student, I had become interested in the development in children of the capacity to use various kinds of symbols, and particularly those in the arts. I was intrigued by how young people become able to appreciate the arts and why some of them become artistic

creators. In 1967, I began to work at a newly launched research center called Project Zero, where we seriously examined the nature of artistic thinking. One day we decided to invite a speaker named Norman Geschwind, a neurologist who had been studying the breakdown in individuals of various symbol using capacities, including those in the arts. As I heard Geschwind speak about the effects of brain damage on artists, writers, and musicians, I had a sudden "A-ha" experience: Perhaps, in the study of the organization, development, and breakdown of the nervous system, I might find important clues to the nature and organization of human artistry.

And so, ignoring the advice of almost everyone (family, friends, mentors), I decided to work in a veterans hospital as a researcher at an Aphasia ward, a floor of a hospital composed of individuals who suffered strokes or other kinds of damage to the brain. There I observed close up the variety of syndromes which result from damage to the cerebral cortex. Each day I was also continuing my research at Harvard, examining the development in young people of different symbol using capacities, no longer restricted to the arts.

Observations preceding MI theory

Without this daily commute between research sites, involving young learners and older victims of brain disease, I would never have come up with MI theory. But each day, I would observe unusual configurations of strengths and difficulties. A child might be good (or bad) in musical comprehension but this skill level was not predictive of his or her skills with language, math, spatial orientation, or understanding of other people. A patient might suffer significant aphasia (loss of language) but this did not predict his or her skills in finding the way around the hospital or understanding a cartoon or even learning a new melody.

In effect, I was observing the limitations of the standard view of intellect. If you believe literally the classical view of intelligence, once you know how well a person performs in one sphere, you should be able to predict that person's performance in other spheres. Smart in one thing, smart across the board; limited in one sphere, limited in all.

Now examined more closely, almost no one takes this view of intellect literally. Teachers, to be sure, but almost anyone who is reflective, realizes that just because a person is good or bad in learning languages, we can't know whether that person will be able to learn a dance step with ease or his way around a new locus. And nearly everyone is willing to speak of different <u>talents</u>. And yet, in the psychological literature around 1980, there was little explicit confirmation of this point.

The Distinctivesness of MI theory

Since different human faculties had long been recognized, both within and outside of standard psychology, what make MI theory distinctive? With the benefit of hindsight, I would point to two factors.

First of all, in approaching the area of intellect, I deliberately averted the usual move to examining scores on tests. Instead, I put on the lenses of the proverbial visitor from another planet who was trying to understand the human mind. And I asked which factors such an

'anthropologist from Mars' might attend to. Far from restricting myself to experimental psychology, I looked through many lenses: that of the anthropologist, visiting many cultures; that of the vocational counselor, considering many careers; that of the expert in "learning differences", examining the various areas of prodigiousness or isolated difficulties which young people can exhibit; and so forth. Probably most important, I looked at the accumulating evidence about the development and differentiation of the cerebral cortex: which areas of human skill and competence were localized in which areas of the brain.

Having created a working definition of intelligence and assembled different sources of information, I then delineated eight factors of what counts as intelligence and what does not. I reviewed many sample candidates and, after considerable weighing of evidence, delineated seven candidate intelligences. I now believe that the total number of intelligences is somewhat larger, but would be surprised if it came to more than 10 or 12. The original seven were linguistic, logical-mathematical, musical, spatial, bodily kinesthetic, interpersonal and intrapersonal. Some years ago I added an eighth or naturalist intelligence. And I now thing that sooner or later there might be an existential intelligence—the intelligence that leads human beings to pose big 'existential questions' and a pedagogical intelligence, the intelligence that enables human beings to convey knowledge and skills to other human beings who have varying degrees of knowledge. Those, then, are the multiple intelligences, circa 2011.

The other factor proved to be fascinating. Somewhere down the line, I decided to identify these factors as 'intelligences'. That decision turned out to be fateful, in a positive sense. Had I delineated the same faculties, with the same evidence, and called them <u>abilities</u> or <u>faculties</u> or skills, I doubt that I would be standing here today. It was the lexical gamble—of taking the prestigious term <u>intelligence</u>, pluralizing it, and then applying it to the set of competences, that caught the attention of many audiences in many parts of the world. As for my definition: an intelligence is a biopsychological potential to process information in certain kinds of ways, in order to solve problems or create products that are valued in one or more cultural settings.

So much for the origins and the bare bones outlines of MI theory. For the remainder of the talk, I want to reflect on the significance of this theory from three different perspectives—that of psychology, education, and social science. And in the end I'll try to draw a few general conclusions.

MI as psychology

Until I published <u>Frames of Mind</u> in 1983, my professional identity was quite secure. I was a psychologist—specifically a developmental psychologist, a cognitive psychologist, a neuropsychologist. My day job was to carry out empirical research with these populations and to write them up in reports for peer reviewed journals. Indeed, this is what I did for twenty years. After hours and on weekends, I wrote books. These books were situated on the boundary between academic and popular volumes—and they were authored at a time when so-called 'midlist' books were a significant part of the American market. (That era has ended in the U.S. though it is still quite active elsewhere, including Spain).

My articles and books got respectful attention but it would be misleading to suggest that either my work or my name were well known. That situation changed with the publication of <u>Frames of Mind</u>. Both the book and the idea became sufficiently well known that I soon realized that—for better or worse—I would forever be known as "the MI man."

But contrary to my expectation at the time of publication, the work has never garnered much support within traditional psychology. I think I now understand why, though it took me many years to figure it out.

Until 1983, my experimental work was in traditional bins of psychology—and so, like the proverbial scientist, I was inserting bricks of various sizes into the edifice of cognitive, developmental, or neuro-psychology. And my books—with titles like <u>The Quest for Mind, The Shattered Mind, Art Mind and Brain</u> were largely syntheses of work that had already been done by others or, on occasion, by my colleagues and me.

<u>Frames of Mind</u> was also a synthesis but it was a far more original one. First of all, I surveyed a large set of literatures—empirical and observational—that had not been surveyed en bloc before. To anticipate a later point, I was not just wearing the hat of the psychologist. Rather, harkening back to my training in the field of Social Relations, I was drawing on other areas of social science. And, because of my immersion in aphasia and other cortical disorders, I was also invading the area of the natural sciences—tying varieties of intellect to parts of the brain and even speculating about their evolutionary and genetic components. This territory was not familiar to me or to other psychologists.

Also, unlike my earlier books, I was not simply summarizing the work of others in a relatively traditional manner. Instead, I was putting forth a rather bold new theory—namely, that intellect was distinctly pluralistic—and arguing that the singular word 'intelligence' and the term "IQ' were fundamentally limited and misleading.

Nor surprisingly, given that I was invading their turf, psychometricians—those charged with measuring intelligence—were offended. When they did not ignore my work, they attacked it. This was hardly surprising. Economist Paul Samuelson famously quipped that in the academy, change occurs one funeral at a time. For close to a century, test makers had defined what intelligence is—indeed, E G Boring, the leading American historian of psychology, had simply stated 'intelligence is what the tests test' as if to close discussion forever after. Sensing this, I published in The Atlantic Monthly, a popular magazine, an article entitled "Who Owns Intelligence?" And in this article I argued that intelligence was too important to leave to the psychometricians; it was time to bring other experts and other lines of evidence to bear on this highly valued (and highly contested) phenomenon.

(I should add that the resistance to MI theory among psychologists has not been echoed in the reactions of scholars from other disciplines. Researchers in biology find the approach and the claims much more congenial, though typically they focus on much finer-grained distinctions within each particular intelligence. Mathematicians resist the theory because from their perspective, there is only one use of mind and that is exemplified by the pure mathematician,

with his or her logical-mathematical reason. Interestingly, this conceit disappears almost immediately in the event that the mathematician has a child with a learning disability!)

But to be a bit fair to the psychologists, they did have a valid point. If I were putting forth a new theory of intelligence, it was up to me to 'operationalize it'—to figure out how to test for the various intelligences, and to determine, empirically, whether there was substance to my claim that these intelligences were 'relatively independent'—a hedging phrase that I actually have used for many years. This hedged characterization was quite deliberate. I had no way of knowing whether the several intelligences were truly independent of one another—or, to use a term favored by psychologists, whether there was a 'positive manifold' among them. What I was confident of, and remain confident of, is that, with respect to any individual, one cannot know the strength of weakness of a particular intelligence, just because one knows the strength or weakness of another intelligence. And I have stated from the beginning that I am agnostic about the reasons for this relatively independence: it could be based primarily on biological reasons (brain development, genes), on cultural reasons (what is valued in particular settings), on motivational reasons (how much a person wants to develop an intelligence), on resources (how much help there is in developing an intelligence), or, in all probability, on a complex of these and perhaps other factors.

In a word, with one major exception called Project Spectrum, I have not devoted energies myself to the development of tests for the individual intelligences. There are many reasons that I have declined to do this, ranging from the expense involved in developing and trying out new tests to my reluctance to create a new kind of strait jacket ("Johnny is musically smart but spatially dumb"). That said, I have written extensively about how the intelligences might be assessed and am innocent of the charge of ignoring the importance of assessment.

MI as education

Just as I had not expected the resistance and even hostility of my colleagues in psychology, I had not anticipated the extensive interest in the theory on the part of educators—initially in the United States, ultimately in many parts of the world. In 2009, my colleagues and I published a book called Multiple Intelligences Around the World. In this collection, 42 scholars and practitioners, from 15 countries on five continents, described the ways in which they have used multiple intelligences ideas for various age groups (from preschool to university), in various educational settings (schools, museums, theme parks, after school activities) and with various populations (language learners, gifted students, students with learning or emotional difficulties). Needless to say, in 1983, I could hardly have anticipated this state of affairs.

Why did MI theory catch on in education, in a way that it has never been picked up in psychology? Educators are much less wedded to disciplinary standards of evidence and acceptability. If an idea seems plausible and has at least a trace of support within the academy that suffices. MI passes that test almost everywhere.

MI theory also had the benefit of being a Rorschach test—that is, like a subject interpreting an inkblot, educators could use the claim of several intelligences to support almost any pet educational idea that they had. My original book had very few educational suggestions—after

all, I was the psychologist, casting only a sideways glance into the classroom. For that very reason, the theory provided ample running room for practitioners to suggest approaches to curriculum, pedagogy, assessment, learning differences, use of computers, place of the arts—indeed, almost any issue in which educators are interested. And since I had not <u>precluded</u> any educational use of the theory, practitioners in many places felt liberated to make use of the theory in whatever way they liked.

For the most part, this promiscuous use was fine with me. After all, as I maintained from the beginning, I am the scholar, not the educator, and it is up to educators to decide how to use the theory. I did not want to be a traffic cop or a rating agency! Also when educators approached me for help in devising curricula or even whole schools, I declined to be a full fledged member of their team. At most, I agreed to provide feedback when I could. And that explains my long term involvement with two schools in the American Midwest: The Key Learning Community in Indianapolis and the New City School in St Louis. Happily, those schools, with their long term practitioners, have shared their ideas and practices with visitors from dozens of countries.

Only once did I openly condemn an application of the theory. In the early 1990s, I learned from a colleague about an MI-inspired educational approach in Australia. No doubt well motivated, this approach went way too far and violated both scientific and ethical boundaries. For me, the 'smoking gun' was the claim that different racial and ethnic groups in Australia each exhibited a characteristic intellectual profile. I thought that this was nonsense; I went on a television program and said so; happily, this ill-conceived educational intervention was soon cancelled.

As a result of this experience and of my general observations, I took two steps. First of all, I wrote a paper called "Reflections on Multiple Intelligences: Myths and Messages." In that essay, probably my most widely specimen of reprinted writing, I delineated seven common misunderstandings of the theory. These misunderstandings ranged from the terminology (MI is not a statement about learning styles) to the educational (there are no official MI or Gardner schools). I cannot say that this publication stopped all misunderstandings of the theory. But it catalyzed a change in me—namely, that I needed to take some responsibility for the interpretations of my theory. And in fact, my subsequent involvement in the study and promotion of "GoodWork" arose most directly from my own battle scars with reference to the misuse of MI ideas.

The second step was to state explicitly the most important educational implications of MI theory. They can be captured in two words: <u>Individuation</u> and <u>Pluralization</u>. Human beings differ from one another and there is absolutely no reason to teach and assess all individuals in the identical way. Rather, in the future, good practice should particularize the modes of presentation as well as the manner of assessment as much as feasible; and that individuation should be based on our understanding of the intellectual profiles of individual learners.

Interestingly, such <u>individual education</u> has always been possible for one group—the affluent. These individuals hire tutors and the tutor's job is to make sure that Pablo and Paloma learn what they need to know, and to use whatever pedagogical approaches work. We are fortunate enough to live in an era where individualized education is no longer an option only for the wealthy.

Computers make it possible to provide individualized teaching and assessment options for every person.

<u>Pluralization</u> can be undertaken in any era and with classes of any size. It simply means that important ideas, topics, theories and skills ought to be taught in more than one way, indeed in several ways—and these several ways should activate the multiple intelligences. When one pluralizes an educational approach, two wonderful things happen. First of all, one reaches more individuals—since some individuals learn better through stories, others through work of art, or hands on activities or group work—and by argument, each of these approaches activates a distinctive set of intelligences. Second of all, pluralized education exemplifies what it means to understand something well. Because if you understand an entity well—be it a school subject, an avocation, your own home, your own family—you can think of it in many ways. Conversely, if you can only represent this entity in a single way, using a single intelligence, then your own mastery is probably tenuous.

Note that neither of these educational implications—individuation, pluralization—depends explicitly on MI theory. Indeed, dating back to the ancient Greeks and Romans, I am certain that you could find recommendations for approaches based on the same underlying ideas. MI Theory provided some scientific and empirical evidence for these approaches. And, perhaps more importantly, because of the list of 7-10 intelligences, it gave names for, and made suggestions about how to individualize and how to pluralize. As my colleague Mindy Kornhaber once quipped "MI theory is a closet organizer. It helps teachers organize their practices and see what is missing."

MI as social science

I have typically called MI theory a psychobiological theory: <u>psychological</u> because it is a theory of mind, <u>biological</u> because it privileges information about the brain, the nervous system, and ultimately, I believe, the human genome. To be sure, in its attention to abilities and skills valued across different cultures and historical eras, it draw on anthropological evidence; and in its attention to the development of intelligences, it encompasses different institutions, ranging from family to schools to the media.

In speaking of MI as social science, however, I am not speaking explicitly about the selection of evidence from fields other than traditional psychology. Rather, I seek to characterize my overall approach to the study of mind and, more broadly, to other human phenomena.

I do not believe that there can ever be a social science that directly parallels the natural sciences—physics, chemistry, biology, even astronomy or geology. (Physics envy can only get one so far!) That is because human beings and their inventions are both the scholars of the disciplines and the objects of the disciplines. Put succinctly, we are studying ourselves. That means we do not and cannot have the distance from human beings that we have from chemicals or inorganic materials or subsystems like the visual system or the circulatory system. Also, and more importantly, the very phenomena that we isolate through the social sciences eventually become part of the knowledge base of the subsequent cohort of human beings. And that

knowledge—be it troubling or reassuring—can and sometimes does make us perform differently in the future.

To use just one, admittedly dramatic example. Around 1960, social psychologist Stanley Milgran asked psychiatrists to predict the percentage of human beings who would administer shocks to the danger level to another person involved in a psychological experiment. The modal response was 1 to 2%. In fact, in what became known as the Milgram effect, typically 60-70% of subjects administered shock to the maximum or dangerous level—a shocking level, so to speak! Undoubtedly the Milgram experiment—which would not be allowed today in most places—provided an unpleasant indication of why subordinates in the Nazi era would engage in cruel activities. But the very popularization, the very notoriety of the Milgram effect holds out hope. Perhaps if human beings know of this species proclivity, they (we) can guard against it and not blindly follow orders, even if (or especially if) they are administered by someone who seems to be authoritative.

But just because social science is not identical to natural or physcial science, is hardly a reason not to pursue it as effectively as possible. When the field of Social Relations started at Harvard in the immediate post-World War II era (and there were similar initiatives in the United States at Yale, Johns Hopkins, the University of Chicago), this institutional move was made on the basis of a strong conviction: our understanding of human beings is most likely to be enhanced if we bring to bear the tools and insights drawn from several fields—which could include political science, economics, history and the arts. The experiment of Social Relations failed—but I think it did so principally for reasons of institutions and personalities, not because the idea in itself is wrong. And I would go so far as to maintain that those of us who were weaned on the field of social relations—(and I could name names!)—often had a broader and more perspicacious view of human kind than those whose training occurred primarily or even exclusively within a single social scientific discipline.

And indeed—and here is my most personal remark—I save my deepest skepticism for those theories of human kind that attempt to explain all human phenomena in terms of a single model. When I was a student in the 1960s, the chief 'overarching theories' were psychoanalysis and behaviorism. Both had their areas of appropriate focus—individual treatment of middle class patients for psychoanalytic treatment, the study of animal learning and behavior for behaviorism. But when they purported to offer far broader explanations—psychoanalysis of all human behaviors, individual as well as group—behaviorism for all mental activities (including human language) and for the behaviors of broader institutions and overall societies—they became misleading caricatures.

Today, psychoanalysis and behaviorism have returned (or been redirected) to their proper areas of applicability. But as I argue in <u>Truth</u>, <u>Beauty and Goodness Reframed</u> (2011), we are today faced with similar hegemonic explanatory claims from two quite different 'pretenders to the throne': <u>evolutionary psychology</u>, which seeks to explain all human behaviors on the basis of purported evolutionary factors, and <u>rational choice economics</u> which, in one guise, posits that all human economic behavior is based on reason, and which, in another guise, posits the self-adjustment of markets as the optimal route to economic prosperity for all. In this recently published book I indicate the limits of these two lenses on human behaviors. At the same time, I

call attention to the roles of broad historical factors, accidents of fortune, and individual human agency. Should anyone doubt the importance of human individual agency, let them think of the history of the 20th century without Hitler, Stalin or Mao, on the one hand, or Mandela, King, or Gandhi on the other.

Just after my new book was published, I heard the wonderful news that I had received the 2011 Prince of Asturias Award in Social Science. I knew enough about the Award to be aware of its importance; and I was tremendously honored to learn the names and identities of my predecessors. But almost as soon as learning that I had received the Award, I realized that I wanted to pay tribute to the kind of social science in which I was trained and to give urge the continuation of that kind of work. In my first public remarks I said

I am thrilled and humbled to receive this prestigious award. While my training is primarily in psychology, I have always considered myself a social scientist, and I feel that much of the best work about human nature and human society draws on a range of social scientific disciplines. Also, at this time the accent in Anglo-American social science falls almost entirely on quantitative work. I am pleased that this award can recognize the strand of social science which involves qualitative analyses and broad syntheses of knowledge.

Let me amplify this brief remark. I certainly value rigorous experiments in psychology, and it is great if one can create randomized controlled studies; I certainly value large scale surveys where one is able to achieve representative samples from the population in question. But I think it a grave mistake for social scientists to restrict themselves to a single standard, even one that is today considered to be a 'gold standard.' When it comes to human spheres, detailed observations of individual cases, careful interviewing, deep probing of individual subjects, well-designed focus groups, can provide information that is equally valuable. Jean Piaget studied only his own three infants in detail, and yet our understanding of infancy was enormously enhanced by these case studies; moreover, Piaget's major observations have held up amazingly well. Whatever the limitations, the case studies carried out by Bronislaw Malinowski in the Trobriand Islands and by Clifford Geertz in Bali helped to define the understandings of remote societies; and indeed, since traditional societies have largely disappeared, there is no way ever to replace them. Erik Erikson's observations of patients at the Austen Riggs Clinic, along with case studies of Amerindian tribes, made lasting contributions to our understanding of the formation of human identity. The optimal social science is not one with a singled prescribed theory or metatheory or empirical method; rather it is one catholic enough to draw on findings from these various theoretical bases and data sources and then, through a human act of synthesis, to weave them together into a compelling narrative. I had such synthesis in mind in creating MI Theory: whether or not I succeeded is for others to judge.

Concluding Remarks

Though I focus here on the theory of multiple intelligences, my major scholarly interest in the past decade and a half has been on the nature of 'good work'—work in the professions that is at once technically excellent, personally engaging, and carried out in an ethical manner.' In this work I have been privileged to have as senior colleagues Mihaly Csikszentmihalyi and William Damon, two eminent psychologists who also exemplify the broad and synthesizing view of social science that I have embraced here. Telling the story of the 'good work project' is a task for

another day. And yet I feel it important to mention that the project was conceived of at the California Center for Advanced Study in the Behavioral Sciences, and that I am writing these very words at the same center, 16 years later.

The GoodWork Project is a textbook instance of social science, as described here. It has involved as researchers individuals across the range of social sciences; it has developed concepts and models that are social-scientific rather than drawn from a singular discipline; our major works are broad syntheses; much of our work has been educational in nature; and, most important, we have used a range of methods, from individual case studies, to detailed interviews of cohorts of workers, to, most recently, broad based surveys involving hundreds of even thousand subjects. And because our original sample consisted of over 1200 subjects, we are able to perform statistical tests, and put forth possible causal explanations, on many questions of interest.

As mentioned before, applications of MI theory were for the most part benign but a few examples were deeply troubling. Misuse of MI theory was a major impetus for the study of good work: my colleagues and I came to the conclusion that as scholars, we had a responsibility not only to put forth ideas but also to monitor how they were used and, when necessary, to speak up about their misuse. This line of thinking led us most directly to undertake the GoodWork project. I have no regrets about my decision to study intelligence and multiple intelligences; it has been tremendously rewarding. And yet at the end of the day, we do not need more people of high intelligence or of multiple intelligences, however measured or labeled; we need individuals who will use their intelligences for positive ends. I anticipate that this goal will guide me for the rest of my days.

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