

FIVE MINDS FOR THE
FUTURE

Howard Gardner

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C H A P T E R **1**

Minds Viewed Globally

A Personal Introduction

FOR SEVERAL DECADES, as a researcher in psychology, I have been pondering the human mind. I've studied how the mind develops, how it is organized, what it's like in its fullest expanse. I've studied how people learn, how they create, how they lead, how they change the minds of other persons or their own minds. For the most part, I've been content to describe the typical operations of the mind—a daunting task in itself. But on occasion, I've also offered views about how we *should* use our minds.

In *Five Minds for the Future* I venture further. While making no claims to have a crystal ball, I concern myself here with the kinds of minds that people will need if they—if *we*—are to thrive in the world during the eras to come. The larger part of my enterprise remains descriptive—I specify the operations of the minds that we will need. But I cannot hide the fact that I am engaged as well in a “values enterprise”: the minds that I describe are also the ones that I believe we *should* develop in the future.

Why the shift from description to prescription? In the interconnected world in which the vast majority of human beings now live, it is not enough to state what each individual or group needs to survive on its own turf. In the long run, it is not possible for parts of the world to thrive while others remain desperately poor and deeply frustrated. Recalling the words of Benjamin Franklin, “We must indeed all hang together, or, most assuredly, we shall all hang separately.” Further, the world of the future—with its ubiquitous search engines, robots, and other computational devices—will demand capacities that until now have been mere options. To meet this new world on its own terms, we should begin to cultivate these capacities now.

As your guide, I will be wearing a number of hats. As a trained psychologist, with a background in cognitive science and neuroscience, I will draw repeatedly on what we know from a scientific perspective about the operation of the human mind and the human brain. But humans differ from other species in that we possess history as well as prehistory, hundreds and hundreds of diverse cultures and subcultures, and the possibility of informed, conscious choice; and so I will be drawing equally on history, anthropology, and other humanistic disciplines. Because I am speculating about the directions in which our society and our planet are headed, political and economic considerations loom large. And, to repeat, I balance these scholarly perspectives with a constant reminder that a description of minds cannot escape a consideration of human values.

Enough throat clearing. Time to bring onstage the five *dramatis personae* of this literary presentation. Each has been important historically; each figures to be even more crucial in the future. With these “minds,” as I refer to them, a person will be well equipped to deal with what is expected, as well as what cannot be anticipated; without these minds, a person will be at the mercy of forces that he or she can’t understand, let alone control. I’ll describe each mind briefly; in the course of the book, I’ll explain how it works and how it can be nurtured in learners across the age span.

The disciplined mind has mastered at least one way of thinking—a distinctive mode of cognition that characterizes a specific scholarly discipline, craft, or profession. Much research confirms that it takes up to ten years to master a discipline. The disciplined mind also knows how to work steadily over time to improve skill and understanding—in the vernacular, it is highly disciplined. Without at least one discipline under his belt, the individual is destined to march to someone else’s tune.

The synthesizing mind takes information from disparate sources, understands and evaluates that information objectively, and puts it together in ways that make sense to the synthesizer and also to other persons. Valuable in the past, the capacity to synthesize becomes ever more crucial as information continues to mount at dizzying rates.

Building on discipline and synthesis, *the creating mind* breaks new ground. It puts forth new ideas, poses unfamiliar questions, conjures up fresh ways of thinking, arrives at unexpected answers. Ultimately, these creations must find acceptance among knowledgeable consumers. By virtue of its anchoring in territory that is not yet rule-governed, the creating mind seeks to remain at least one step ahead of even the most sophisticated computers and robots.

Recognizing that nowadays one can no longer remain within one’s shell or on one’s home territory, *the respectful mind* notes and welcomes differences between human individuals and between human groups, tries to understand these “others,” and seeks to work effectively with them. In a world where we are all interlinked, intolerance or disrespect is no longer a viable option.

Proceeding on a level more abstract than the respectful mind, *the ethical mind* ponders the nature of one’s work and the needs and desires of the society in which one lives. This mind conceptualizes how workers can serve purposes beyond self-interest and how citizens can work unselfishly to improve the lot of all. The ethical mind then acts on the basis of these analyses.

One may reasonably ask: Why these five particular minds? Could the list be readily changed or extended? My brief answer is this: the

five minds just introduced are the kinds of minds that are particularly at a premium in the world of today and will be even more so tomorrow. They span both the cognitive spectrum and the human enterprise—in that sense they are comprehensive, global. We know something about how to cultivate them. Of course, there could be other candidates. In research for this book, I considered candidates ranging from the technological mind to the digital mind, the market mind to the democratic mind, the flexible mind to the emotional mind, the strategic mind to the spiritual mind. I am prepared to defend my quintet vigorously. Indeed, that is a chief burden of the rest of this book.

This may also be the place to forestall an understandable confusion. My chief claim to fame is my positing, some years ago, of a theory of multiple intelligences (MIs). According to MI theory, all human beings possess a number of relatively autonomous cognitive capabilities, each of which I designate as a separate intelligence. For various reasons people differ from one another in their profiles of intelligence, and this fact harbors significant consequences for school and the workplace. When expounding on the intelligences, I was writing as a psychologist and trying to figure out how each intelligence operates within the skull.

The five minds posited in this book are different from the eight or nine human intelligences. Rather than being distinct computational capabilities, they are better thought of as broad uses of the mind that we can cultivate at school, in professions, or at the workplace. To be sure, the five minds make use of our several intelligences: for example, respect is impossible without the exercise of interpersonal intelligences. And so, when appropriate, I will invoke MI theory. But for much of this book, I am speaking about policy rather than psychology, and, as a consequence, readers are advised to think about those minds in the manner of a policymaker, rather than a psychologist. That is, my concern is to convince you of the need to cultivate these minds and illustrate the best ways to do so,

rather than to delineate specific perceptual and cognitive capacities that undergird the minds.

To put some flesh on these bones, I will get personal and say a bit about my own experiences with these kinds of minds. I write as a scholar and author in the social sciences and education, as a person who has considerable experience in the management of a research group. But the task of cultivating minds goes far beyond the charge of teachers and professors; it constitutes a major challenge to all individuals who work with other persons. And so, as I review these minds, I will comment on how they play out in other careers, notably in business and in the professions.

DISCIPLINED

Even as a young child, I loved putting words on paper, and I have continued to do so throughout my life. As a result, I have honed skills of planning, executing, critiquing, and teaching writing. I also work steadily to improve my writing, thus embodying the second meaning of the word *discipline*: training to perfect a skill.

My formal discipline is psychology, and it took me a decade to think like a psychologist. When I encounter a controversy about the human mind or human behavior, I think immediately about how to study the issue empirically, what control groups to marshal, how to analyze the data and revise my hypotheses when necessary.

Turning to management, I have many years of experience supervising teams of research assistants of various sizes, scopes, and missions—and I have the lessons and battle scars to show for it. My understanding has been enriched by observing successful and not-so-successful presidents, deans, and department chairs around the university; addressing and consulting with corporations; and studying leadership and ethics across the professions over the past fifteen years. Beyond question, both management and leadership are disciplines—

though they can be informed by scientific studies, they are better thought of as crafts. By the same token, any professional—whether she's a lawyer, an architect, an engineer—has to master the bodies of knowledge and the key procedures that entitle her to membership in the relevant guild. And all of us—scholars, corporate leaders, professionals—must continually hone our skills.

SYNTHESIZING

As a student I enjoyed reading disparate texts and learning from distinguished and distinctive lecturers; I then attempted to make sense of these sources of information, putting them together in ways that were generative, at least for me. In writing papers and preparing for tests that would be evaluated by others, I drew on this increasingly well-honed skill of synthesizing. When I began to write articles and books, the initial ones were chiefly works of synthesis: textbooks in social psychology and developmental psychology, and, perhaps more innovatively, the first book-length examination of cognitive science.¹

Whether one is working at a university, a law firm, or a corporation, the job of the manager calls for synthesis. The manager must consider the job to be done, the various workers on hand, their current assignments and skills, and how best to execute the current priority and move on to the next one. A good manager also looks back over what has been done in the past months and tries to anticipate how best to carry out future missions. As she begins to develop new visions, communicate them to associates, and contemplate how to realize these innovations, she invades the realms of strategic leadership and creativity within the business or profession. And of course, synthesizing the current state of knowledge, incorporating new findings, and delineating new dilemmas is part and parcel of the work of any professional who wishes to remain current with her craft.

CREATING

In my scholarly career, a turning point was my publication in 1983 of *Frames of Mind: The Theory of Multiple Intelligences*.² At the time, I thought of this work as a synthesis of cognition from many disciplinary perspectives. In retrospect, I have come to understand that *Frames of Mind* differed from my earlier books. I was directly challenging the consensual view of intelligence and putting forth my own iconoclastic notions, which were ripe, in turn, for vigorous critiques. Since then, my scholarly work is better described as a series of attempts to break new ground—efforts at forging knowledge about creativity, leadership, and ethics—than as syntheses of existing work. Parenthetically, I might point out that this sequence is unusual. In the sciences, younger workers are more likely to achieve creative breakthroughs, while older ones typically pen syntheses.

In general, we look to leaders, rather than to managers, for examples of creativity. The transformational leader creates a compelling narrative about the missions of her organization or polity; embodies that narrative in her own life; and is able, through persuasion and personal example, to change the thoughts, feelings, and behaviors of those whom she seeks to lead.

And what of the role of creativity in the workaday life of the professional? Major creative breakthroughs are relatively rare in accounting or engineering, in law or medicine. Indeed, one does well to be suspicious of claims that a radically new method of accounting, bridge building, surgery, prosecution, or generating energy has just been devised. Increasingly, however, rewards accrue to those who fashion small but significant changes in professional practice. I would readily apply the descriptor *creative* to the individual who figures out how to audit books in a country whose laws have been changed and whose currency has been revalued three times in a year, or to the attorney who ascertains how to protect intellectual

property under conditions of monetary (or political or social or technological) volatility.

RESPECTFUL AND ETHICAL

As I shift focus to the last two kinds of minds, a different set of analyses becomes appropriate. The first three kinds of minds deal primarily with cognitive forms; the last two deal with our relations to other human beings. One of the last two (respectful) is more concrete; the other (ethical) is more abstract. Also, the differences across career specializations become less important: we are dealing with how human beings—be they scientists, artists, managers, leaders, craftspeople, or professionals—think and act throughout their lives. And so, here I shall try to speak to and for all of us.

Turning to respect, whether I am (or you are) writing, researching, or managing, it is important to avoid stereotyping or caricaturing. I must try to understand other persons on their own terms, make an imaginative leap when necessary, seek to convey my trust in them, and try so far as possible to make common cause with them and to be worthy of their trust. This stance does not mean that I ignore my own beliefs, nor that I necessarily accept or pardon all that I encounter. (Respect does not entail a “pass” for terrorists.) But I am obliged to make the effort, and not merely to assume that what I had once believed on the basis of scattered impressions is necessarily true. Such humility may in turn engender positive responses in others.

As I use the term, *ethics* also relates to other persons, but in a more abstract way. In taking ethical stances, an individual tries to understand his or her role as a worker and his or her role as a citizen of a region, a nation, and the planet. In my own case, I ask: What are my obligations as a scientific researcher, a writer, a manager, a leader? If I were sitting on the other side of the table, if I occupied a different niche in society, what would I have the right to expect from those

“others” who research, write, manage, lead? And, to take an even wider perspective, what kind of a world would I like to live in, if, to use John Rawls’s phrase, I were cloaked in a “veil of ignorance” with respect to my ultimate position in the world?³ What is my responsibility in bringing such a world into being? Every reader should be able to pose, if not answer, the same set of questions with respect to his or her occupational and civic niche.

For more than a decade, I have been engaged in a large-scale study of “good work”—work that is excellent, ethical, and engaging for the participants. In the latter part of the book I draw on those studies in my accounts of the respectful and the ethical minds.

EDUCATION IN THE LARGE

When one speaks of cultivating certain kinds of minds, the most immediate frame of reference is that of education. In many ways, this frame is appropriate: after all, designated educators and licensed educational institutions bear the most evident burden in the identification and training of young minds. But we must immediately expand our vision beyond standard educational institutions. In our cultures of today—and of tomorrow—parents, peers, and media play roles at least as significant as do authorized teachers and formal schools. More and more parents “homeschool” or rely on various extra-scholastic mentors or tutors. Moreover, if any cliché of recent years rings true, it is the acknowledgment that education must be lifelong. Those at the workplace are charged with selecting individuals who appear to possess the right kinds of knowledge, skills, minds—in my terms, they should be searching for individuals who possess disciplined, synthesizing, creating, respectful, and ethical minds. But, equally, managers and leaders, directors and deans and presidents, must continue perennially to develop all five kinds of minds in themselves and—equally—in those for whom they bear responsibility.

And so, this book should be read from a dual perspective. We should be concerned with how to nurture these minds in the younger generation, those who are being educated currently to become the leaders of tomorrow. But we should be equally concerned with those in today's workplace: how best can we mobilize our skills—and those of our coworkers—so that all of us will remain current tomorrow and the day after tomorrow?

THE OLD AND THE NEW IN EDUCATION

Let me turn now to education in the formal sense. For the most part, education has been quite conservative. This is not necessarily a bad thing. Educators have consolidated a massive amount of practical knowledge over the past centuries. I remember a conversation twenty years ago with a professor of psychology in China. I had felt that her college class, a simple recitation by one student after another of the seven laws of human memory, was largely a waste of time. With the aid of an interpreter, we talked for ten minutes about the pros and cons of different pedagogies. In the end my Chinese colleague cut off the discussion with these words: "We have been doing it this way for so long that we *know* it is right."

I discern two legitimate reasons for undertaking new educational practices. The first reason is that current practices are not actually working. We might *think*, for example, that we are educating young persons who are literate, or immersed in the arts, or capable in scientific theorizing, or tolerant of immigrants, or skilled in conflict resolution. But if evidence accrues that we are not successful in these pursuits, then we should consider altering our practices . . . or our goals.

The second reason is that conditions in the world are changing significantly. Consequent upon these changes, certain goals, capacities, and practices might no longer be indicated, or might even come to be