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HOWARD GARDNER

MIHALY CSIKSZENTMIHALYI

WILLIAM DAMON



GOOD

WORK

WITH A NEW AFTERWORD BY THE AUTHORS

When Excellence and
Ethics Meet

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G O O D
W O R K

When Excellence and
Ethics Meet



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FOR JOHN W. GARDNER

Good Worker

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Good Work in Uncertain Times

To do good work is a laudable goal, one difficult to achieve even under favorable circumstances. In the modern world scarcely anyone is sealed off from rampant and rapid innovations or from intrusive market forces. Indeed, even in professions that might seem immune, these forces are dramatically evident. In education, charter schools and voucher programs are sprouting up in different corners of the globe. For-profit institutions like the University of Phoenix are roiling traditional liberal arts colleges and universities. In the museum world, where competition rages for bigger-than-ever blockbuster shows, exhibitions are sponsored by corporations that demand an increasing say over *what* is displayed and *how*. Churches are competing for larger congregations, more lavish buildings, and more charismatic religious leaders. And even traditionally secretive philanthropic foundations are hiring publicists to make sure that their “good works” are well known: they are contemplating “strategic alliances” with neighboring institutions and fretting about the challenges posed by new-style venture philanthropy or charitable accounts offered by investment houses. Similarly, there are physicians who cannot prescribe a course of treatment because it will not be underwritten by the HMO, corporate lawyers whose employers engage in shady practices, teachers who believe they should hug unhappy children but are forbidden even to touch them on the shoulder, and museum curators who need money to mount shows but like neither the artists, the policies, nor the restrictions imposed by the most generous arts funders.

Of course, ethical and professional dilemmas are not new. And many would argue, with some justification, that the ways to deal with them have long been known. They would say that the solutions can be found in the great religions, in the Bible and other sacred texts, in long-standing models of behavior contained in the very traditions of the professions, and in the behaviors of well-known exemplars—for instance, physicians such as Albert Schweitzer and Jonas Salk, and journalists such as Edward R. Murrow and I. F. Stone. But religious and professional traditions are not always available to young people, and they are not always credible. Much evil has been carried out in the name of religion, and many once-idolized figures (ranging from politicians such as John F. Kennedy to

business titans such as Henry Ford or Walt Disney to athletes such as Ty Cobb) turn out to have had notable character flaws. And even when the idols remain relatively untarnished and the relevant texts have been studied, it is becoming increasingly difficult to know just *how* to draw inspiration from models in vastly changing circumstances. Murrow did not have to compete with the Internet; Salk did not face an environment in which virtually every medical discovery was immediately patented; Abraham Lincoln did not have every element of his private life scrutinized by the media or made into a lurid TV movie while he was attempting to command the Union forces. This is why we speak not just of “good work” but of “good work in difficult times.” Not difficult, necessarily, in terms of daily creature comforts, but difficult in terms of people’s ability to know the right thing to do and remain in their professions.

Still, there is an important clue as to whether one is carrying out good work. Doing good work *feels* good. Few things in life are as enjoyable as when we concentrate on a difficult task, using all our skills, knowing what has to be done. And, contrary to popular opinion, these highly enjoyable moments—the ones Mihaly Csikszentmihalyi calls “flow experiences”—occur more often on the job than in leisure time.^{1*} In flow we feel totally involved, lost in a seemingly effortless performance. Paradoxically, we feel 100 percent alive when we are so committed to the task at hand that we lose track of time, of our interests—even of our own existence. Intense flow can happen anywhere: in making love, in listening to music, in playing a good game of squash or chess. But it also happens surprisingly often at work—as long as the job provides clear goals, immediate feedback, and a level of challenges matching our skills. When these conditions are present, we have a chance to experience work as “good”—that is, as something that allows the full expression of what is best in us, something we experience as rewarding and enjoyable. To be sure, feelings of flow do not always signal that one is performing “good work” in our sense; the robber who is fully engaged in cracking a safe may well undergo comparable engagement. Nor do we want to imply that “good work” is always accompanied by flow; it can be frustrating and discouraging at times. Yet, time and again, we have observed the rewards of flow bestowed on individuals who have become wholly engaged in activities that exhibit the highest sense of responsibility.

* All notes are at the end of the book.

Journalism and Genetics: An Instructive Contrast

Journalism and genetics are textbook examples of professions that must continually face new challenges. As we began to probe how journalists and geneticists carry out their work, we discovered that professionals in these fields differ in a way that we had not anticipated. Geneticists are working at a time in which the profession is tremendously exciting; all of the relevant forces in their universe are well aligned. The general public, the shareholders of genotech corporations, and the scientists themselves are working toward a common goal: ensuring healthier and longer lives for people. In sharp contrast, journalists tell us they are working at a time when their profession is wracked by confusion and doubt—that is, a time when the relevant forces are massively misaligned. Journalists may feel the need to take time to investigate a complex story, but the public is calling instead for gossip and scandal while management is seeking greater profits in the next quarter. At a time of alignment, good work seems relatively unproblematic. During a phase of misalignment, however, it becomes a challenge. (We discuss alignment and misalignment much more in Chapter 2.)

And so, to an extent that we could not have anticipated, genetics and journalism represent sharply contrasting—virtually polar opposite—cases in a study of professional realms. In well-aligned genetics, the pursuit of good work may appear to be relatively unproblematic; in misaligned journalism, the threat to carrying out good work is ubiquitous. Yet, the emerging story is not quite so simple. Apparent alignment may blind workers to troublesome forces, even as significant threats to good work bubble beneath the untroubled surface. There are in genetics today many reasons for concern, ranging from the blurring of the line between disinterested scholarly research and research carried out to ensure profits, to the tendency to deny the risks entailed in genetic therapy or the cloning of organisms. Conversely, blatant misalignment may actually have a beneficent dimension; such disequilibrium clearly exposes the threats to good work and may mobilize people to struggle productively, to confirm the essence of their calling, embrace high standards, and reaffirm their personal identities. Journalism may well become stronger—and better aligned—just because the fault lines in the profession have become obvious.

A Crisis in the Journalism Profession

Time for an example. In 1993 broadcast journalist Ray Suarez found himself in a quandary—the biggest conflict of his professional life. His heart told him to get out of this line of work, while his bank balance told him to swallow his pride and do his assigned job. His head, where he had to sort out the alternatives and make a decision, was swirling.

Suarez, now senior correspondent for the Public Broadcasting Service's *News Hour*, has since 1993 been associated with public broadcasting. Best known for his six-year stint as the host of the two-hour afternoon show *Talk of the Nation*, on National Public Radio (NPR), Suarez has been an innovator, much honored within the profession and widely respected among the listening public. He was one of the first journalists to whom we spoke as part of our study of good work.

Before joining NPR, Suarez had a richly varied but not always palatable life in journalism. Having discovered a love of writing during high school, he had worked as a radio and television reporter both in the United States and abroad. Beginning in the mid-1980s Suarez had a seven-year stint in commercial news with Channel 5, an NBC affiliate in Chicago. While there, he encountered the dilemma that made him consider quitting the profession entirely:

When video games first started to become hot, a family sued the major makers of video games in the United States for some unbelievable amount of money . . . because their kids would get seizures. And about half-way into the reporting of the story, I realized that we were talking about one-tenth of one one-hundredth of one one-thousandth of the kids who play video games. But TV has a tendency to play everything like, "*Here's a possible danger of video games.*"

And I called in, sort of to telegraph my concerns ahead, sort of in advance for this fight that I knew we were going to have, about the way we were going to play this story. And I said . . . it's irresponsible to give people the idea that video games are dangerous, or, in the way that television usually does, it teases "could be dangerous" to your family, making no guarantees but getting you to salivate and listen. I said, we're talking about a tiny number of American

children, a tiny number. And once you find out that your kids have this, which you may have already known before they ever sat down to play one video game, because all kinds of computer and TV monitors shoot impulses to the eye at this number of times per second. . . . If they play anyway, and have seizures, well whose fault is that? We're talking about a story that we're going to play as a hot, big story, that isn't a story. Because we tell stories that have impact with large numbers of people, so what we're trying to do is just cross our fingers, put them behind our back, and we'll tell them at the end, oh, and by the way, your kids probably are okay. I said, I don't want to do that. I think it's cheap, I think it's not true, I think even, no matter how many times we couch it and qualify it, it will leave an untrue residue in the minds of people who watch the story. So what are we really doing? We're just winding people up. We're not telling them good information.

Suarez sadly summed up the battle with the executive of the station: "And that fight went on for a long time, in TV terms, like an hour or an hour and a half. I lost."

He comments ruefully on the outcome: "There's only so much in the way of showboaty integrity that you can afford to have, because if you have a contract and the contract says certain things, and one of the things is, you have to do what you're told." Eventually finding the situation intolerable, Suarez recalled, "At the time that NPR hired me, I was making active plans to get out of the news business. You know, thank God, I had that option."

During the course of their careers, most people find themselves in situations that test their sense of appropriate behavior and challenge them to reassess major aspects of their lives. At this point of crisis, Suarez probably found it helpful to take into account his personal goals, the core values of journalism, the needs of the television station and network that employed him, and, finally, the implication of his actions for those whom he did not know, especially the thousands of individuals influenced by his broadcasts. Sometimes professionals find ways to resolve complex dilemmas without too much stress. But when resolutions are not easily forthcoming, they are faced, as was Suarez, with a sharp set of choices.

What options would you or any other professional have in such situations? To begin with, you could decide simply to take the easiest course and go along with the mandated behavior. In fact, family and financial

obligations might leave few other options. Or you could remain in your current position and continue to fight, perhaps even managing to convince your employer of the superiority of your stand. There would also be the risk of your getting fired or becoming exhausted, frustrated, and demoralized. You could band together with others who shared your perspective and begin to protest privately or even publicly. When management's behavior has been flagrantly inappropriate, as occasionally happens in the news media, group action can be effective. But as President Ronald Reagan demonstrated in 1981 when he summarily fired the nation's striking air traffic controllers, it is all too easy to replace a defiant crew with a more compliant one.

Of course, you could always choose to quit—a more viable option if you had marketable skills and other jobs were there for the asking. But abandoning a career altogether, as Suarez considered doing, is an extremely wrenching option.

Finally, you could find or create an organization that would allow you to realize your professional aspirations. This would be the ideal solution—and it is one of particular interest to us in this study of good work. If an institution already existed that embodied your values, you could try to secure a position with it, even at the cost of moving to a new locale or accepting a reduction in pay. Or you could help create or transform an existing institution. Suarez was not the creator of National Public Radio, but he helped turn it into the powerful and intellectually respectable broadcast news outlet that it remains today.

Mission, Standards, and Identity

Stepping back from Ray Suarez's quandary, let's look at how any engaged worker or professional might handle similar situations. Consider, for example, the HMO physician who believes that each patient needs to be seen until that patient has received a proper evaluation and diagnosis, but whose employer insists that she schedule at least six visits an hour and penalizes her when she does not comply. Or a lawyer working for a large multinational who is told that a bribe will be necessary in a third world country and is instructed to pay money under the table in a forthcoming negotiation. Or the teacher who believes that history is best taught by a deep immersion in a limited number of topics, but must abandon his curriculum and "teach to" a newly mandated state test that probes one's

memory for disparate facts. Or the craftsman who believes in using only the finest materials, but who is instructed by his contractor to use inferior materials, which are unlikely to be detected by trusting purchasers and which will half the production costs.

At such critical times, we suggest, thoughtful practitioners should consider three basic issues: *mission*—the defining features of the profession in which they are engaged; *standards*—the established “best practices” of a profession; and *identity*—their personal integrity and values.

Mission

Each realm of work has a central mission, which reflects a basic societal need and which the practitioner should feel committed to realizing. The core of the mission of medicine is the healing of the sick and the afflicted. The core mission of the legal profession is the pursuit of justice, through the resolution of conflict or the orderly and civilized righting of wrongs. Teachers pass on the most important knowledge of the past and prepare their students for the future. Craftspersons make objects that are beautiful and useful. All practitioners should be able to state the core traditional mission of their own fields. At best, the mission is part of what draws the practitioner to a chosen profession and remains as a principal sustenance in times of conflict. A good way of clarifying this sense of mission is to ask: “Why should society reward the kind of work that I do with status and certain privileges?”

Standards

Each profession prescribes standards of performance, some permanent, some changing with time and place. The classic example is the Hippocratic oath: the physician is enjoined to do no harm, to respond to calls without attention to personal preferences, to keep confidences, to lead an honorable life, to use medicines only for curative purposes, and to desist from exploiting the patient. There are comparable standards for other professions. Lawyers are expected to be personally ethical, to provide the best possible defense for their clients, not to withhold information from the court, not to use perjured testimony, and to maintain confidences. Teachers are expected to be moral exemplars, to be well informed, to treat all youngsters fairly, and to avoid personal relations with their students. People involved in the crafts are expected to use the finest materials, to

pass on their special skills and understandings to apprentices, and to avoid cutting corners in their work.

Professionals should be able to employ, as a standards test, the question, "Which workers in the profession best realize the calling and why?" A list of admired workers, along with their virtues, should reveal the standards embodied in the profession.

Identity

Our third consideration is a person's own background, traits, and values, as these add up to a holistic sense of identity: a person's deeply felt convictions about who she is, and what matters most to her existence as a worker, a citizen, and a human being. A central element of identity is moral—people must determine for themselves *what* lines they will not cross and *why* they will not cross them. But a sense of identity also includes personality traits, motivation, intellectual strengths and weaknesses, and personal likes and dislikes.

As psychologists, we have an enduring interest in issues of identity. (In fact, Howard Gardner and William Damon studied with Erik Erikson, the psychologist who, in the mid-1900s, developed the concept of identity.)² Each person's identity is shaped by an amalgam of forces, including family history, religious and ideological beliefs, community membership, and idiosyncratic individual experiences. In the best of circumstances, these complement one another and add up to a coherent and positive attitude, one that makes sense to the person and to the surrounding community. Of course, such an integrated sense of identity remains an ideal: nearly everyone suffers at times from some fragmentation of identity, some diffusion, some confusion. Nor does identity ever completely coalesce. Rich lives include continuing internal conversations about who we are, what we want to achieve, where we are successful, and where we are falling short.

There is a clear-cut gauge for identity, which might be called the "mirror test." The image comes from the story of a German ambassador in London who, as part of a celebration he had to host in honor of Britain's King Edward VII, was asked to provide a bevy of prostitutes. The diplomat felt that he could not do this and instead resigned his position. Asked why, he responded, "I refused to see a pimp in the mirror in the morning when I shave."³ Only when we can look proudly in the mirror can we be said to have affirmed our identity. Of course, on occasion the hacker who

cripples a network or the politician who has no intention of fulfilling his promises may be proud of what he has gotten away with. In such cases, it is necessary to invoke the universal mirror test: “What would it be like to live in a world if everyone were to behave in the way that I have?”

The Psychological Perspective

In framing the situation of the worker in terms of these three considerations, we are drawing on our own professional formations and values. We are psychologists—social scientists who study the mind’s capacities and resources—its intelligences, motives, needs, and values. All human beings endeavor to understand what is happening around us, to make sense of our experiences. All human beings also have the capacity to frame experiences in certain ways—to construe them in a way that either motivates or paralyzes action. And most crucially, all human beings are able to choose from a range of actions—as the economist Albert Hirschman memorably phrased it, we may speak, express loyalty, voice concerns, or exit from the scene.⁴ The authors’ disciplinary backgrounds have shaped our appreciation for the powerful role played by personal capacities and resources in the lives of contemporary professionals.

If we consider Ray Suarez’s situation as a representative one, we can better understand how psychological factors can affect choices. When Suarez’s employer told him to accentuate the dangers of video games, he could have reflexively followed the orders. Indeed, in a totalitarian society, such blind obedience would probably be the realistic course to ensure that he could wake up and see his family the next morning. Let’s say, however, that he decided that he could not comply with the directive. At this point, one’s construal of the situation becomes crucial. If Suarez were insecure and pessimistic, he might conclude that he had no future in journalism and should move instead to a less demanding, if also less satisfying, career. But if he were more self-confident and optimistic about the future, he might interpret the boss’s words as a wake-up call. At that point he would have to decide whether to cede his sense of personal agency to someone else or to retain control of his own life and of his own sense about the right way to pursue journalism. We have seen how he, in fact, dealt with the dilemma, but others might have responded differently.

Scholars belonging to other disciplines would offer their own interpretations of the Suarez quandary. A classical Marxist economist might point

out the excessive power of management and advise Suarez to join a union, be prepared to strike, or even await a revolution. A mainstream economist might speak about the inevitability of market forces and advise Suarez to investigate how the competition succeeds in securing higher ratings. A historian might observe that there have long been oscillations in journalism between periods of responsibility and periods of “yellow journalism,” and then counsel Suarez to wait patiently for the pendulum to swing in the opposite direction. A sociologist might underscore that each society must facilitate a certain set of communication and entertainment functions and, in light of that, encourage Suarez to seek out the current roles and institutions that most closely fit his own set of values.

As social scientists, we have been informed by these and analogous perspectives. We are keenly aware of powerful economic, political, social, and cultural forces, and we realize that people often feel powerless to oppose them. But our primary focus in this study of good work is what happens “inside the head” of engaged professionals. We are interested not only in how people make sense of their situations but also which plans and actions they ultimately pursue and why. Adopting this psychological perspective enables us to understand what we see as essential on a personal level for ourselves and everyone else. In our view all of us need to take stock of our own situations, weigh the various alternatives in light of our own values and goals, and make decisions that are optimal under the circumstances and that we can live with in the long run. In the absence of this person-centered perspective, we are merely observers buffeted by the fates.

Beyond the Bottom Line

We are writing about professional work at a particular historical moment, and that moment necessarily colors our observations and interpretations. With the fall of communism at the end of 1980s, a certain view has become increasingly dominant around the world: a democratic approach to government and a market approach to economics.

As advocates of democracy, we are heartened by the decline of totalitarian regimes and the ascendancy of electoral politics. As Winston Churchill correctly observed, democracy may be an imperfect form of government, but all the others are worse. We have no fundamental quarrel with the operations of the market in economic spheres; we recognize

the positive role that markets can play, for example, in competition among publications or pharmaceutical companies. And like many others, we have personally benefited from a flexible and relatively laissez-faire economic system. But not all spheres of life are best run on a market model. Major professional spheres—medicine, science, education, art—ought not to operate in the same way as commercial enterprises do, in the way suggested by the Adam Smith–Friederich von Hayek–Milton Friedman view of the marketplace. Medicine requires financial prudence, but the purpose of this profession should not be to achieve the greatest profit for shareholders of a health maintenance organization. Nor should legal protection, educational opportunities, and other vital human needs and privileges simply be allocated to the highest bidder. In the words of the French prime minister, Lionel Jospin, “We are not against market-based economy, but market-based society.”⁵

Of course, the market can be salutary. For instance, the government-funded Human Genome Project was stimulated by competition from the privately funded Celera Corporation. And, as deftly presented in the 1999 movie *The Insider*, about a whistle-blower in the cigarette industry, journalists waste no time in calling attention to the missteps and ethical violations of their rivals. Neither of these situations would occur in a totalitarian world. We also stress that the market is as much a consequence as a cause of many phenomena. One could argue that technological advances—themselves brought about by scientific breakthroughs—have wrought the cataclysmic changes in many fields and that the markets are reflecting the rise of new technologies. Still, we feel the need to sound an alarm when any valued human sphere threatens to be overwhelmed by the search for profit—when the bottom line becomes the only line that matters.

2

THE CONDITIONS OF GOOD WORK

ACCORDING TO POPULAR WISDOM, suggested both by the Bible (that describes toil as God's punishment for Adam and Eve's disobedience) and by contemporary comic strips (that depict work as a meaningless charade run by and for morons), work is a burden people must bear out of necessity, even as they long for weekends and holidays. Yet when Americans were asked in the early 1980s whether they would retire from working if they had enough money to live on comfortably, about 80 percent said they would not.¹ Retirement is often accompanied by deep stress and depression. In fact, human beings are programmed twice to be psychologically dependent on being productive: once by the genes and then by the pressure of social expectations. Already in the first year of life, infants show pleasure in causing events, as when turning a tap or a light switch on and off, or knocking a ball suspended over the crib. Children in a reasonably stimulating and structured environment learn to enjoy concentrated effort. Indeed, our species would not have survived if most of us had not developed a taste for work. And, of course, human communities reinforce this innate tendency by shaming and shunning those who do not contribute to the common good.

We are now entering an unprecedented era in which the economy requires people all over the world to become "knowledge workers." Entirely

new tasks that require the constant and imaginative manipulation of symbols are providing employment to cohorts of computer programmers, software designers, bio-engineers, and entrepreneurs knowledgeable enough to perceive opportunities in the evolving trends. Even those in professions seemingly remote from the cyber-revolution—say, the ministry or philanthropy—are affected by our computer-drenched society. Entering new territory always involves risk. As the forms of labor change, traditional safeguards for ensuring good work—from professional codes to trade unions—are no longer adequate. New questions arise: What is the responsibility of multinational corporations to the communities in which they operate and to the workers they employ? What is the responsibility of knowledge workers who are increasingly unsupervised and independent of their employers? How should traditional professionals trained to honor ancient codes respond to the opportunities and challenges posed by seismic global changes?

The quality of life in the future will depend on whether we find a way to do good work under these changing conditions. If the fundamentals of good work—excellence and ethics—are in harmony, we lead a personally fulfilling and socially rewarded life. If they are not, either the individual or the community, or both, will suffer. Since most people want to do work that is useful as well as meaningful, one important question for us to begin with is, “What can people do when conditions threaten a harmonious alignment?” To answer that question, however, we need a broader understanding of how professions typically evolve, how they adapt to change, and what factors can lead to misalignment problems. Medicine, the oldest and best-understood profession, provides a rich grounding for such an understanding. Thus, we examine that profession’s history to discern general principles we can apply later when discussing genetics and journalism in depth.

How Professional Realms Change

Becoming a professional involves a bargain between a person and the community. People agree to provide needed services; the community agrees to compensate them for the services and recognize their right to perform those. For instance, the realm of medicine involves a social contract whereby someone trained according to agreed-upon specifications has the right to advise patients and treat physical illness, if necessary with

surgery or prescribed medicines. Who can be a physician and what level of care patients should expect from this specialist have always been contested issues. The Code of Hammurabi, setting down the laws of Babylon some thirty-seven hundred years ago, prescribed cutting off the hand of any surgeon who killed a patient while removing an abscess. Physicians were unregulated in Europe until Frederick II in 1221 decided that no one should practice medicine unless he was accepted by the doctors of the southern Italian school of Salerno, whose knowledge the emperor trusted.

Medicine is often considered the oldest profession, though some wits might nominate an even older one. A considerable body of scholarly literature has developed about what qualifies as a profession, and medicine clearly falls within the accepted definitions. But we have not selected medicine as a measure against which to judge the other realms of work we discuss later, and our focus is not on evaluating what work meets certain technical criteria for classification as a profession. Therefore, we often use the terms *professional realm* and *practitioners* to allow for broader interpretation.

The relationship between practitioners and the public they serve is always in a delicate balance, with the professionals interested in securing more rights and the public seeking more services. Over time, this built-in tension can either result in a fruitful synergy or degenerate into conflict. Realms change as a result of four factors.

New Tools, Procedures, and Understandings

First are forces that operate in the cultural environment—the most important being developments in science and technology. Whenever new tools, procedures, or ways of understanding arise anywhere in the culture, they produce ripples that can have far-reaching and unexpected consequences. Until about two hundred years ago, for instance, physicians were difficult to distinguish from charlatans. Medicine became a respected profession only after discoveries made in other fields such as physiology, microbiology, and health practices grounded it scientifically. The development of tools like the microscope, the thermometer, and the stethoscope also helped make medicine a more rigorous practice. Chemists such as Louis Pasteur and Robert Koch shaped medical changes when they carried out experiments and identified the microorganisms responsible for diseases like smallpox, tuberculosis, and cholera. Even advances in unrelated fields can have an impact. Leopold Auenbrugger, the

son of a nineteenth-century Austrian innkeeper, learned in his father's store how to tell the amount of wine contained in a barrel by tapping its side. Later, as a physician, he applied the technique to the percussion of patients' chests to diagnose the presence of fluids in the lung—a procedure still used by doctors. Thus, new discoveries from unexpected quarters may reconfigure a realm. This is clearly the case for the two professions that are the subjects of this book. Journalism has been transformed by many innovations, such as the telephone, the personal computer, and the Internet. The short history of genetics has depended even more on technological advances in related fields, as we shall see later.

Cultural Values and Beliefs

A second major influence is the changes in a culture's values and beliefs. What a person can or cannot do at work depends on what is considered morally right, or even on what happens to be fashionable at the time. For example, medical knowledge has been hampered by religious injunctions against dissecting the human body. For this reason Indian and Chinese physicians, who had developed sophisticated medical knowledge more than two thousand years ago, never had a chance to study the internal structure and function of organs.² Western medicine was also slowed by the prohibition against doing autopsies until well into the fourteenth century, but afterward it became increasingly permissible to analyze the body's internal workings. Thus, Western physicians caught up with and then surpassed their counterparts in Asia.³

Realms differ in how central or peripheral they are with respect to the current priorities of a community. In Europe, as in other parts of the world, physical healing was long bound up with spiritual healing. In the Middle Ages, doctors and nurses typically worked in hospitals and infirmaries attached to abbeys and convents, and were members of religious orders expected to combine the care of the soul with that of the body. Physicians took over priestly functions, and vice versa. In this combination, religious knowledge usually took precedence over purely medical knowledge. But when religious beliefs become distinct from science, health and longevity become proportionately more valued by the populace—thus the demand for effective health care increases. Greater expectations, in turn, enhance the status and power of physicians, whose claims to treatment are based on scientific knowledge. This shift begins to be obvious in Europe after the Renaissance, with Girolamo Fracastoro's first scien-

tific explanation of how diseases are transmitted, written in 1530. By the end of the seventeenth century, a number of systematic observations helped clarify the mystery of how the body worked and set medicine on a purely physical course.

A telling example illustrates how quickly the context of cultural knowledge can change a realm. Phrenology—the study of the relation between the size and shape of the cranium and the manifest traits of the individual—was accepted as a branch of medicine until quite recently. The ninth edition of the *Encyclopaedia Britannica*, presumably an authoritative source in the 1880s, described people with a pronounced bump on the occipital lobe of the skull as being high on “philoprogenitiveness . . . the organ for the love of children because this part of the skull is usually more prominent in apes and in women, in whom the love of children is supposed to be stronger than in men.” Right above this area was the part of the skull that the phrenologist Johann Kaspar Spurzheim thought to be diagnostic of “inhabitiveness,” because he found it large in cats and in a clergyman fond of his home. Clearly, what counts as credible medical knowledge can change dramatically in less than a century.

Changing Social Environments

Realms often change because of developments in the social environment. A realm must always be responsive to the demand for its services, which determines its market value. Between roughly the fifth and sixteenth centuries in Europe (as in many other parts of the world) most material surplus was placed in the coffers of religious institutions. During that time, monks and priests were among the most powerful, respected, and wealthy individuals. Hospitals, infirmaries, and medical training were administered by the clergy. At other times societies have put a high value on the performance of military leaders, lawyers, engineers, or entertainers. Lately, scientists and physicians in developed Western nations have enjoyed unprecedented esteem, because people have hoped and expected to benefit from their performances more than from those of leading figures in other realms. In contrast, the status of politicians and journalists has been unenviable at best, especially in the United States.

Concern for health has long guaranteed a demand for physicians. However, depending on the expectations for quality health services, the demand may grow or shrink at any given time. This is clearest in the waxing and waning of different specialties. Until a few decades ago the mar-

ket value of a degree in one of the more esoteric branches, such as radiology or anesthesiology, was much greater than that for general or internal medicine. Since the 1990s, however, the public demand for family physicians has grown, while that for some previously highly sought-out specialists (e.g., psychoanalysts) has decreased.

Patterns of ownership, control, and other political shifts also affect professional realms. Practitioners acting essentially as freelancers who regulate themselves may be turned into salaried employees responsible to outside authorities and their rules. For instance, physicians currently are in the throes of transformation from professionals into employees of managed-care institutions, which may no longer treat them as professionals. This threat to professional status has prompted some physicians to seek some other form of practice that will restore their former autonomy. The institutional organizations and loyalties of physicians will, in turn, largely determine the quality and kind of health care they can provide.

Contributions by Creator-Leaders

A final source of change is innovation by individual practitioners. In every epoch a few people come up with new ideas or new ways of doing things, and if these innovations are accepted by others, dramatic transformations of the realm may result. In medicine, examples abound. In the mid-1600s William Harvey revolutionized physicians' understanding of the circulation of blood and of embryology. In the late 1700s Edward Jenner successfully experimented with the inoculation of smallpox virus, thus pioneering control over many infectious diseases. And in the 1800s Ignaz Semmelweis propounded the radical doctrine that obstetricians inadvertently killed many women by neglecting to wash their hands before assisting during childbirth.

Creative people are usually driven by curiosity and tend to be more intrinsically motivated—more interested in the rewards of intellectual discovery than in financial or status rewards. Therefore, they are often considered odd both by the general public and by fellow practitioners. But the reason innovators are less concerned with money and power is that they get their reward directly from their work. They are satisfied by the excitement and wonder involved in the process of discovery—a fulfillment no amount of money can buy.

Like everyone else, potentially creative individuals will seek to enter careers that promise financial rewards and opportunities for advancement.

But perhaps an even more important element in attracting original minds is the amount of flow a profession has to offer. Gifted, often idealistic, young people gravitate to challenging careers. As the historian of science Thomas Kuhn has argued, paradigms change most readily when a discipline attracts highly motivated practitioners who look forward to solving puzzles and making discoveries.⁴

Medicine has traditionally attracted intellectually gifted young people not only because it has paid well and has had high status, but also because it has entailed intrinsic factors—especially the opportunity to help patients, provide personal autonomy, and make novel contributions to knowledge. These intrinsic rewards become scarce, however, when a recognized profession like medicine is transformed into a bureaucratic enterprise. When a career ceases to provide flow, only young people who expect extrinsic rewards will be attracted to it. Hope of financial gain, rather than intellectual challenges, will motivate them. During such periods, professions will become less creative and will tend to stagnate and be susceptible to takeovers from the outside.

The Four Components of Professional Realms

What is necessary for a profession to form and develop? How do we know when a profession can be said to exist? Such questions led us to pinpoint four essential components of professional realms.

Individual Practitioners

People who elect to enter a professional realm, secure training, and pursue their own personal and professional goals must, of course, be available. Professions arise when a group of *individual practitioners* define the specific knowledge, skills, practices, rules, and values that differentiate them from the rest of the culture. For most of prehistory, professional realms did not exist, because knowledge was evenly distributed in the population. In a hunting-gathering tribe, for example, no one knew anything different from anyone else. Or if one person learned more than the others about medicinal plants, for instance, the rest of the tribe valued the knowledge and drew on it, but its possessor still had to continue to hunt and gather like everyone else. It took many thousands of years before hominids

had enough material resources to afford supporting specialists such as physicians, who were not directly involved in the daily production of food and shelter.

Today, we readily think in terms of specialized professional activities, and potential practitioners target their choices about training and careers by considering a wide range of factors, from personal interests to societal reward systems. And in certain professions, such as medicine, ways of identifying and rewarding levels of expertise among highly specialized practitioners have become increasingly important aspects of the associated educational, regulatory, and other activities. The subject of hierarchies of professional roles is one we examine more closely later.

Domains

When enough specialized knowledge has been codified for smooth transmission to new practitioners, we call the resulting symbolic system a *domain*. Cultures are made up of hundreds of domains, such as mathematics (which can be further differentiated into subdomains such as calculus, number theory, and so on) or medicine (which can be further differentiated into gastroenterology, pathology, and so on). The domain of gastronomy includes all the foodstuffs and recipes that make it possible for cooks in a given culture to prepare delicious meals, while the domain of religion specifies the rituals and beliefs that allow a person who learns its codes to feel connected with the supernatural. Both journalism and genetics qualify readily as domains.

Domains consist of two main sets of symbolic codes. (The second is the “ethical dimension,” discussed below.) The first includes *ideas* (or *memes*) relating to knowledge and practice. How should one pray to the gods? How should one cook chicken? Every domain prescribes sequences of action that lead to some desirable goal. In medicine, the goal is to prevent and alleviate suffering, and to prolong life. The domain of medicine—the knowledge base that a physician must learn before being allowed to practice—grew very slowly at first but accelerated rapidly over the last few centuries, and it presumably will continue to do so for the foreseeable future (no doubt intersecting increasingly with the discoveries of genetics).

The information collected in a domain is coded in symbols—words, catchphrases, graphic notations, and equations that are passed down ei-

ther by word of mouth or in prose and illustrated texts. Early in human history this information was preserved orally in myths, songs, and verse; later it became codified in written form. Until a few thousand years ago, the domain of medicine consisted largely of magical practices and charms for expelling the demons that were thought to cause diseases. (This was true of other professions, too: Egyptian potters resorted to magical incantations when they came to delicate situations in the process of firing their pots, as protection from evil clay-breaking spirits). After some time, medical specialists began to note and codify the salutary effects of herbs. In the first century, the Indian surgeon Susruta wrote down the medicinal properties of 760 plants, and the Chinese physician Li-Shih-chan in the sixteenth century compiled a great pharmacopeia in fifty-two volumes, based on experience collected by physicians over the preceding centuries and listing the beneficial uses of more than a thousand plants.

In Europe, the domain of medicine remained largely anecdotal well into the eighteenth century. The knowledge of the Salernitan doctors, held in such high esteem by Holy Roman Emperor Frederick II, was expressed in the rhyming couplets of the *Regimen Sanitatis*, which included such pearls of wisdom as *Post prantium stare, post coenam lento paede deambulare*, or “Rest after lunch, and take a slow walk after dinner.” Other medical advice from the same source has been translated as “Use three physicians still, first Doctor Quiet, next Doctor Merryman, and Doctor Diet.”

Needless to say, over the past ten centuries the knowledge of the medical domain has expanded exponentially. But this has not necessarily been true of every profession. For instance, the equally ancient discipline of the law has not undergone a comparable revolution. New branches have arisen to deal with emerging problems—such as antitrust or intellectual property law—but at least until the advent of the information revolution, scientific and technological advances left the basic principles of the domain relatively unchanged.

A domain needs to contain more than knowledge and skill to be recognized by the rest of society as a profession. In addition, there has to be an *ethical dimension* reassuring people that the skills will not be used against the common interest and solely for the practitioners’ advantage. As an example, the oath that Hippocrates formulated in the fourth century B.C. and that graduating medical students still recite, specifies that physicians should refrain from seducing any young man or woman they find in the

home of the patients they visit. The Code of Maimonides, written by a Jewish doctor from Cordoba about fifteen hundred years later, and many recent formulations of ethical standards—such as the declaration of Geneva, the International Code of Medical Ethics, and the Canons of the American Medical Association—also spell out the conduct expected of physicians. As we note later, some scientists and journalists are currently engaged in efforts to create codes adequate to our time.

In sum, if a profession cannot convince others that its practices and values are useful, and that its members can be trusted, it will not be given much social support. It will be marginalized in the culture and will not be allocated many resources. The domain, encompassing both the *procedural* and the *ethical* standards of the profession, must be credible enough for the community to pay money and respect for the services of its practitioners.

Fields

As sets of symbols, domains exist only as ideas and values, as words uttered or recorded in some way. To become real, they have to be enacted by people. The third component of a professional realm is what we call *fields*—that is, the men and women who actually practice a domain's procedures. Society is a network made up of hundreds of fields, from mathematicians to farmers, from plumbers to physicians.

What constitutes a field is to a certain extent fluid. For instance, the definition of *physician* differs in the United States and India. In the latter nation, until 1970 anyone could practice medicine without a license, and even today an estimated 500 million patients are still treated by Ayurvedic healers employing techniques based on traditional methods with a combination of diet, herbs, and spiritual exercises. The country with the highest reported number of physicians is Italy, where there are 190 people for each doctor (versus 390 in the United States and more than 30,000 in Ethiopia). But in Italy many physicians do not actually practice after obtaining a medical degree, so the favorable ratio of doctors to patients does not necessarily imply better health care or a stronger medical field.

Individual practitioners in a field occupy one of three major roles. The elite are the *gatekeepers* who preside over the destiny of the professional realm and judge which changes in the domain should be sanctioned.

Some fields formally recognize a hierarchy of gatekeepers, whereas others do not. Gatekeepers emerge as a result of complex interactions among practitioners that involve politics, reputation, respect, and appointment to key institutional positions. In medicine the ranks of gatekeepers include the medical directors of major funding institutions such as the National Institutes of Health (NIH), the deans and department heads of major medical schools, the editors of respected journals such as the *New England Journal of Medicine* and *The Lancet*, and so on.

The great majority of any field is made up of *expert practitioners* who are recognized by the gatekeepers and are authorized to perform within the domain. Without them, the profession would not exist. Finally, a vital field always needs approved *apprentices* or *students*. Although they have little power in the present, they are essential to the continuity of the professional realm. When the knowledge in a domain becomes exhausted or when society is no longer prepared to support a field, the number or the quality of potential recruits diminishes. In the opposite case—as happened with physics in the 1930s and 1940s, and as is happening with molecular biology today—many of the most talented youth will flock to the field. When the opportunities to practice are unevenly distributed, aspiring professionals will move from places that offer fewer rewards to those that offer more. For instance, doctors emigrated in great numbers from Greece to Rome two millennia ago when the latter state became powerful and prosperous; included among their ranks was Galen, the most renowned physician of antiquity. Currently, the United States is attracting promising medical students from around the world, and many American students with meager qualifications are pursuing medical studies in developing countries.

Not all professional realms have equally well-defined domains and fields, and boundaries themselves are fluid and changing. In contrast to medicine, for example, journalism is a much more loosely coupled domain and field. Many of the beliefs and practices that apply to journalism also apply to other kinds of writing, as well as to diverse varieties of scholarship. People who wish to do so can call themselves journalists, while it is illegal for nonphysicians to pass themselves off as doctors. Journalism is less consistently policed at its various levels, and the processes for being a journalist are much less well defined. In the case of genetics, there are clear procedures and standards for receiving a doctoral degree in various branches of biology. However, many of those most actively involved in

genetics—including some people who direct highly influential biotechnological companies—do not have such a background.

Other Stakeholders

In addition to individual practitioners, domains, and fields, one must take into account a fourth facet of professional realms—the *other stakeholders*. We use this term to refer to the two groups that are playing increasingly large roles in the operation of genetics, journalism, and other realms today. One group consists of the corporate *shareholders*—the people who in effect own a company (like a media conglomerate or a biotechnology corporation) and have expectations for its performance, especially its profits. The second group consists of the *general public*—the citizens who, as consumers, taxpayers, and voters, indicate their own preferences regarding news stories, medical practices, various kinds of genetic manipulations, and other topics. In the past, these two groups played only a minimal role, but today no professional realm can operate indefinitely if it clashes with the requirements of such stakeholders.

The components of a professional realm can be summarized in the following chart:

<i>Individual Practitioners</i>	Persons who elect to enter a professional realm, secure training, and pursue their own personal and professional goals.
<i>Domain</i>	Knowledge, skills, practices, rules, and values captured in various codes. A culture consists of numerous domains. Domains have ethical dimensions.
<i>Field</i>	The roles that individuals practice when working with symbols of the domain; fields also include institutions. A society consists of numerous fields. Three major roles: elite gatekeepers, expert practitioners, apprentices and students.
<i>Other Stakeholders</i>	<ol style="list-style-type: none"> 1. Corporate shareholders and executives. 2. General public—consumers and citizens.

A Golden Age— When Professional Realms Are Aligned

A professional realm is healthiest when the values of the culture are in line with those of the domain, when the expectations of stakeholders match those of the field, and when domain and field are themselves in sync. When these conditions exist, individual practitioners are free to operate at their best, morale is high, and the professional realm flourishes. We term this a situation of *authentic* alignment.

Authentic alignment does not happen often, since domains compete with each other for cultural hegemony. Religion struggles to preserve its predominance over philosophy, political ideology tries to dictate the course of science, and the scientific disciplines vie with each other for premier status. These are not idle academic bickerings, for they bear on the central issue of any culture: Who will formulate the worldview? Depending on the answer to this question, the entire history of a civilization may be set. For example, in China religious and ideological considerations traditionally took precedence over the development of markets, technology, science, and autonomously configured domains.

Fields also compete with each other for societal resources. Physicians' interests often conflict with those of other professionals, such as insurance agents, lawyers, nurses, psychologists, hospital administrators, or politicians. In this case, the issue is, Who controls health care? A certain amount of tension is inevitable and perhaps even beneficial. But society as a whole suffers if there is too much conflict among the various components of the system, and when as a result the interests of either professional realms or of the broader society are ill served.

At different times societies have adopted widely different solutions for arbitrating the competing claims of professionals and other workers. One of the most drastic examples is the Hindu caste system, in which a person's place in the productive (and reproductive) system was fixed at birth as a result of inheritance. Members of the higher castes preserved their status by avoiding the less pure members of lower castes and by not touching impure substances such as blood, flesh, or leather. Since learned physicians until recently were Brahmans, or people of the highest caste who were not supposed to touch impurities, much of their treatment was

verbal. Despite the obvious oppressiveness of such a rigid system, castes for several centuries achieved a viable division of labor, perhaps because the Hindu religion—intricate and diverse as it is—made a persuasive enough case for the lower castes to accept their lot without too much complaint.

Societies have developed other means for apportioning productive functions. A guild is essentially a free association of practitioners who set their own standards and compete with rivals for acceptance. Guilds prospered in Europe during the Middle Ages, but with time they developed into increasingly self-serving institutions that approximated the rigidity of castes without the latter's quasi-religious justification. Sometimes, the central authority of the state takes over the regulation of productive work. The corporate state existed in various forms in the nineteenth century and was formally developed in fascist Italy. This solution provided for labor unions, trade unions, and professional associations (rather than political parties) to elect representatives to the legislature. In the socialist system, every worker is legally an employee of the government. These autocratic solutions do not eliminate the basic problems of the competition between fields and the rest of society. In countries where, for ideological reasons, the state paid physicians poorly in comparison with manual workers, patients who wanted good care routinely offered doctors gratuities of money, hams, eggs, sugar, or other gifts in kind. As recently as May 1997, the ethics committee of the Hungarian Medical Association published a position paper in which it warned that accepting gratuities "is demeaning to the physician, because it threatens his sovereignty."⁵

In our society at present, the preferred solution for adjudicating among the various fields is the free market. According to this ideology, the invisible hand of supply and demand—as manifested, for example, by shareholders of major corporations or by the purchasing choices of consumers—automatically adjusts the competing interests of various productive groups. The problem with this solution is evident in the case of medicine, where a substantial proportion of the population cannot afford access to quality health care. Under such conditions, two options arise. One possibility is that humanitarian cultural values will have to be subordinated to the demands of the marketplace, and we will have to concede that health is one of those commodities only the affluent should aspire to having—like a second home or a costly education at a private university. The other option is for us to agree that in this case humanitarian values

should take precedence over the unmitigated laws of supply and demand, which requires finding ways for the field to provide its services even to those who cannot pay for them.

In recent years, attempts have been made to develop a global health policy based on humanitarian values. The 1978 Alma-Ata Health Declaration of the World Health Organization stated that health—understood as a state of complete physical, mental, and social well-being, and not merely the absence of disease and infirmity—is a “fundamental human right” that should be accessible to all levels of society. At this point in history, such declarations are still little more than wishful thinking. But perhaps we are approaching a time when common sense will unequivocally converge on the conclusion that individual health and welfare cannot be left to chance, but instead need more broad-based solutions.

A perfect solution is obviously difficult to achieve, and in any case it will be a temporary one. But our model suggests, at least in principle, the conditions necessary to optimize professional contributions to a society—or, in other words, to bring about authentic alignment. In the first place, there should be domains to take care of the major human needs. The goals and values of these domains should support each other and be rationally connected through a common epistemology. Currently in the so-called developed world, the scientific method provides this common ground, although alternative worldviews ranging from humanistic deconstructionism, on the one hand, to religious fundamentalism, on the other, certainly exist. It is possible that the hold of science on popular allegiance will slip unless it is capable of integrating some of the older values, such as a respect for cultural traditions, with newly emerging “green” values, such as environmentalism.

Another condition for alignment is that the fields should be free to practice within the limits of their respective domains and to expand these limits in a reasoned way. Everyone suffers when religious or political authorities try to control the practices of a professional realm by imposing parameters foreign to it. At the same time, fields must take seriously their responsibility to the domain and, ultimately, to the culture and society as a whole. That is, they must apply effective internal standards (sometimes called “policing”) within the profession. If members of the field begin to stray from the terms of the implicit contract that authorizes their practice, conflict will inevitably result. In an ideal situation there is a generally accepted relationship among fields, and conflicts are resolved in light of

the common good. Members of fields are rewarded in a reasonable approximation of their contributions: merit, rather than other forms of preference, is the basis of advancement.

Finally, harmonious professional realms exist when individual practitioners are attracted to the domains that most suit their interests and abilities, when they are allowed to develop and grow within the parameters of the practice, and when their rewards are commensurate with their skills and contributions. If a profession cannot offer the opportunity for doing good work—in the sense of providing flow experiences and enabling individuals to do their best in meaningful occupations—young people unsuited by talent or temperament will enter whatever field pays better or gives the most prestige. While achieving harmony in a given sphere (that is, cultural, social, or individual) is possible, bringing all dimensions into alignment simultaneously is much more difficult. Ultimately, the judgment of alignment is a subjective one. Practitioners and observers conclude whether the concerns of the practitioner, the domain, the field, and the other stakeholders are being reasonably well met at a historical moment.

Threats to Alignment

Examples of social conflict and chaos are unfortunately all too common in the historical record. It is sobering to realize how even Rome—held up as a model of political stability—was torn for centuries by internal dissension that could have ended the republican experiment at any moment. If we are to trust the historian Livy, almost every year a new war threatened from one of the compass points, and the tribunes tried to dissuade the soldiers from fighting on behalf of their rich compatriots. For centuries the continued existence of society hung in the balance, skirting a fatal crisis from year to year.

When harmony in the social matrix falters, several possible consequences ensue. Occasionally a profession disappears entirely: consider the augurs skilled in reading celestial signs, who in antiquity were consulted by the rulers in matters of public policy. But because most professions address enduring human needs, they seldom fade away completely. Instead, as sociologists remind us, they are threatened by two main forms of dysfunction: *anomie*, which occurs when norms break down to the extent that nobody any longer knows the right thing to do;⁶ and *alienation*,

when norms become rigid and oppressive and nobody wants to do what has to be done.⁷

Why do such crises occur? In the normal course of events, destructive changes often occur cyclically, either because external conditions destabilize the domain or the field, or because the internal development of the profession takes on pathological forms. One obvious threat to the harmony of a profession is rapid scientific or technological advances. When new knowledge or new procedures arise in adjoining domains, a given field can be overwhelmed by possibilities that throw into question the old practices. Boundaries may shift, so that what once was the province of one field becomes part of another's. Not so long ago it was barbers who did surgery; but as advances in the treatment of pain, infection, and shock made operations more effective, surgery became a branch of medicine. Targeted drugs may someday render surgery unnecessary. If changes are too sudden, practitioners trained in the old methods may start doubting their expertise and eventually may lose faith in the viability of the domain as a whole. At that point, the ethical bonds that justify the profession also begin to weaken. If morale is too severely undermined, the field becomes cynical; instead of seeking rewards in a job well done, practitioners will seek only money, power, or petty distinctions.

Changes in lifestyle that are entirely independent of a domain can also bring disequilibrium. For instance, in the United States, the spread of suburbs after World War II made it increasingly difficult for physicians to make house calls, because too much time was expended in traveling from one home to another. Instead, patients were expected to visit the doctor's office or an outpatient hospital facility. This was just one of many developments that has made health care more impersonal and institutionalized, and that threatens to transform the physician's self-image from community healer to corporate employee. Instead of being immersed in the lives of their patients, physicians now are distanced from the homes and families of those for whom they care. Surrounded in their offices by the tools and paraphernalia of the trade, they often adopt an intimidating professional persona. These changes may make the delivery of health care more efficient, but the potential downside is that, in shedding their traditional image, doctors may also shed those values that made medicine a socially respected and personally rewarding career.

The harmony of professions can also be unsettled by economic and political ties that both support and constrain them from the outside. A field can be co-opted by rulers or by the blandishments of the market: when

that happens, it is no longer clear whether the field is serving the function for which it had originally been chartered or is advancing the agenda of special interest groups. Or the field can be compelled to serve the ends of those in power, in which case its original goals and values again become compromised. Currently, the new forms of health-care delivery are forcing physicians to make difficult ethical choices: Should they go ahead and prescribe an expensive treatment that is likely to help their patient or a less effective, cheaper treatment that will benefit their HMO's balance sheet? Divided economic control results in split loyalties, and the old rules no longer apply. But when the function of the domain becomes perverted, the profession loses much of its social mandate and its members become demoralized.

Anomie may result also from the internal development of domains. Changes in values and priorities that seem desirable at first may have hidden costs. Biomedical research is highly desirable. But if, attracted by its glamour, medical schools emphasize research skills over teaching in their curricula, and hospitals stress research over primary care, the nature of the profession can easily change in ways unsettling to the public, at least in the short run. Such a change may also disturb practitioners who were drawn to the domain by traditional values of caring.⁸ As the status of basic science increases, physicians are confronted with the temptation of taking on a role from another field—that of the scientist—rather than the venerable role of the healer.

Another threat to the internal harmony of a profession is the exhaustion of the domain's knowledge base. Geographical exploration was a flourishing realm until recently. Now that all the continents have been mapped and no new discoveries are likely to beckon, many young people who want to prove their mettle are moving to more promising frontiers such as outer space or virtual space. Sometimes the drought is only temporary, as it was in physics just before the explosion of quantum mechanics, when leaders of the field had assumed that all the important problems of the domain had been solved. Then suddenly the new theory revitalized physics, attracting some of the best minds who helped usher in the nuclear and the silicon ages. Since the glory days of the mid-twentieth century, the arc of the profession has peaked again and has entered something of a decline. When the flow potential of a domain is exhausted, the risk is that members of the field will become bored and retreat into a rigid orthodoxy in an attempt to protect the relevance of their contribution.

Finally, fields can be corrupted internally, often as a result of access to sudden wealth and power. When a profession yields overwhelming privileges, the temptation is to take advantage of them. Gatekeepers begin to take on political roles at the expense of their expertise, practitioners clamor for ever-larger slices of the economic pie, and recruits turn to the field for extrinsic, rather than intrinsic, reasons. Sometimes, in order to keep the price of their services up, gatekeepers place too many obstacles in the way of certifying practitioners, and thus they reduce the effectiveness of the field. At other times they err in the opposite direction and allow insufficiently prepared or motivated people to practice. Or both excesses may occur simultaneously. For instance, post-World War II Italian medical schools turned out many physicians who had practically no clinical training to speak of. At the same time, if experienced physicians from the United States or from other European countries applied to practice in Italy, they were refused licensure unless they had a good command of ancient Greek and of Latin—a blatantly self-protective measure for the Italian medical establishment.

Thus, alignment can fail because of tension between domains (surgery versus barbering), between fields (physicians versus entrepreneurs), within domains (alternative medicine versus traditional medicine), within fields (family physicians versus specialists), between a domain and the wider culture (disdain for alternative medicine versus a search for more holistic methods of treatment), or between a field and the wider society (clamor for higher incomes versus desire for affordable health care). Domains and fields can clash with the demands of stakeholders. Whenever alignment fragments, both society and the profession are likely to suffer. The long-term needs of society are no longer served, and people lose their professional integrity. At that point, good work becomes rare. It must be revived to restore the balance between the components of the system, and ultimately, new norms of the domains or new institutions of the field may be required as well.

Authentic alignment, which represents an ideal worth striving for, must be differentiated from other conditions with which it might be confused. In a totalitarian state such as Nazi Germany, a professional realm like medicine may seem to be aligned, if practitioners are allowed to carry out their work. However, the alignment is only superficial, since practitioners must pass political litmus tests, refuse aid to certain populations, or ignore some bodies of research while embracing others. As we shall see, *superficial alignment* can also come about when practitioners deliberately

or unconsciously ignore potentially troublesome or discrepant situations—for example, the quest for profit overwhelming the execution and publication of quality work. A certain amount of tension may be healthy, for it forces practitioners to examine their own fundamental values. By the same token, the sociological state of alignment should not be confused with personal integrity or a state of flow. Individual practitioners may well be unhappy even if they live in a society where domain, fields, and shareholders are well aligned. Conversely, some practitioners will be personally energized by a situation of nonalignment that they are determined to alter.

Toward a Model of Alignment and Misalignment

Given this sketch of the factors that underlie the vicissitudes of professions, we are now in a better position to resume the main thread of the investigation. By applying these general concepts, we can see more clearly what is happening to the domains that deal with our minds and our bodies, and perhaps hazard a prognosis about the human condition in the near future.

In subsequent chapters we examine the two domains that, in our time, have principal responsibilities for shaping the information inside our bodies and our minds. We do so by portraying journalism and genetics from what anthropologists call an *emic* perspective—that is, as they are described and experienced by leading individual practitioners. In particular, we report how practitioners describe their goals and values, the opportunities they seize, the obstacles they encounter, the ethical dilemmas that arise, the changes (both positive and negative) they observe, the strategies they devise to carry out their work, dreams and nightmares about their occupations, and, in sum, their own sense of the current degree of alignment in their chosen professional realms.

What these professionals say is specific to the domains of genetics and journalism, but the overall perspective applies to knowledge workers in any other domain. The rapid changes in technology and society are destabilizing old occupations, while the newly emerging ones are still in a state of (sometimes beneficent) chaos. “What constitutes good work?” is a question all of us must ask again and again. How can we live up to the demands of our job and the expectations of society without denying the

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