

Mentoring

Seven Roles and Some Specifics

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In Homer's legend, when Ulysses, the king of Ithaca, went away to make war on the Trojans, he left his infant son, Telemachus, in the hands of Mentor (1). Ulysses was gone for twenty years, and Mentor guided Telemachus in practical skills, such as archery and wrestling, and also provided advice on moral matters. Giving advice, however, is naive and presumptuous (2). Naive, because experience cannot be transmitted; instead, each generation has to acquire it for itself. Presumptuous, because no one has a monopoly on wisdom; and those imagining themselves well endowed are the least wise (3).

Books containing advice for young professionals come in two forms: compendia of tedious pieties, and amoral manuals of dodges and shady practices for getting on in the world (4). An attempt to provide a noncynical description of the good mentor inevitably falls into the former category and exposes an author to accusations of moralizing oversimplification. Yet fear of being labeled a self-righteous moralizer is insufficient defense for shying away from the challenge.

A mentor can be defined as an older academician who takes a special interest in a younger person—a fellow or a junior member of faculty (1). The older person is called the mentor, but there is no good term for the younger person (5). The lack of a self-evident term to describe the object of the mentor's interest bespeaks of much confusion on the subject. I focus solely on the mentoring of a fellow who wants to become a physician-researcher. I make liberal use of quotations, not simply for calling on authority to buttress my case but for the illumination they provide.

SEVEN ROLES

The physician-researcher as mentor has at least seven roles to fill: teacher, sponsor, advisor, agent, role model, coach, and confidante (1, 6, 7). The mentor needs to customize each role to match the characteristics of the fellow. The following description is an ideal after which mentors strive. It is also an ideal that perhaps no mentor can fully attain.

Teacher

The mentor and laboratory assistants teach the fellow the technical skills unique to their field of research. The mentor guides the fellow in how to read in an efficient manner and how to reason from first principles. The fellow learns to write scientific manuscripts by getting back drafts covered in red ink. The men-

tor teaches the fellow how to apply for grants, and how to review manuscripts (8). The mentor knows that education is not just the imparting of facts—after all, these can be obtained in a book (9). Instead, the ultimate goal of education is the formation of character (the aggregate of qualities that constitute the moral backbone of an individual) (10, 11). Henry Adams encapsulated the legacy of teaching: "A teacher affects eternity; he can never tell where his influence stops."

Sponsor

As sponsor, the mentor introduces the fellow to a new social world (6). Up to now, the fellow's world has been parochial. To succeed in research, the fellow needs to learn who's who among the cast of characters in a subdiscipline. When the fellow first presents a research poster, the mentor lists researchers who have a reputation for helping young people. When these individuals come by the poster, the mentor tells the fellow to be very open in discussing limitations of the study because they will help fix them. The mentor also names another set of individuals who get pleasure out of belittling a fellow, warning the fellow to be on guard when interacting with them. Over time, the mentor instills in the fellow the values and customs that make up the norms of science.

Advisor

The mentor serves as advisor and counselor (1, 7). The fellow needs a sounding board and reality check to help refine ideas and gain clarity of thought. Being older, the mentor supplies the missing experience—been there, done that. The fellow doesn't need someone to pave the road, but needs help in becoming a better navigator. The mentor doesn't try to personally solve the fellow's problems, but helps the fellow craft his or her own solution—to become self-reliant. The mentor is not a nursemaid or escort, but a catalyst for growth (5). A good mentor is an amateur psychoanalyst, understanding what makes people tick. The mentor's greatest contribution may be in listening, saying little. As Rousseau told us, people who know a lot tend to say very little, whereas people who know little speak a lot. A good mentor understands that it is best to give advice only when it is requested (12).

Mentoring should not be confused with being a faculty advisor (7, 13). With the latter, the exchange is relatively formal, largely unidirectional, with little if any personal bonding. The exchange may occur only once, whereas mentoring involves years of repeated back and forth, eyeball to eyeball. A student may not view the faculty advisor as a role model, whereas a mentor is always seen as a role model.

Agent

The mentor acts as an agent (7). The fellow knows the mentor will go to bat for him or her. The mentor removes obstacles, but only after the fellow has made a convincing attempt. And the mentor is careful to avoid spoonfeeding, which stunts the development of independence.

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Role Model

The fellow views the mentor as a role model and wants to emulate his or her approach to academic life (14). Young people do not assimilate values by listing attributes they wish to develop (truth, caring, judgment) and looking up their definitions (15). Instead, they identify with people who appear to have these attributes, and emulate their behavior. Fellows do not learn values from having them preached at them, but from seeing values enacted in the routine of daily life. Values are best transmitted through deeds, not words—a *how*, not a *what*. And that is why role models are so important in medicine.

The fellow observes the mentor's professional priorities. The time devoted to helping colleagues, such as volunteer work in reviewing manuscripts that goes uncredited by promotion committees (16). The mentor's intellectual and scholarship style: it must be unmistakable that he or she enjoys learning. The approach to thoroughness and truth telling. The mentor's ability to make work appear more fun than fun, and make drudgery appear worthwhile. Success in research can lead to arrogance, although Claude Bernard believed true scientific prowess leads to a proportional decrease in pride (17). The fellow sees how the mentor interacts with peers: the exercise of restraint, and the instinct for maneuvering between behavior that might be uncomfortably allowed and behavior that is impermissible. The fellow sees the moral element in the mentor's identity: how the mentor defines *what* lines will not be crossed, and *why* (18). The bulk of the fellow-mentor interaction is in the research setting, but the mentor's behavior as a clinician—irrespective of whether his or her research is basic or patient oriented—will determine how well the mentor transmits the values of academic medicine. It must be crystal clear that the patient is always first priority. The core values articulated by the mentor must be evident in actions: he or she must walk the talk. When a mentor fails to practice what is being preached, the hypocrisy mutes the effectiveness of the advice (19).

Role models and mentors are often confused (5). Most people who serve as role models do not act as mentors. Michael Jordan is a role model for thousands. If he is to become a mentor, it will only be for a handful of people. Likewise, William Osler was a role model for thousands of physicians, but mentored only a few. Many role models are like bright shining stars: as you get closer, they seem too hot to touch (5). Most physician trainees never have a true mentor—there are not enough to go around (5, 6, 13). They have role models and faculty advisors. Having a real mentor will always be a privilege of only a few.

Coach

A good coach motivates the players to win. Knowing when to offer encouragement. When to push. And when to pause and take a break. A mentor has to push for action while tolerating inaction—a cause of considerable tension in the mentor (12). A basketball coach is judged by the success of the players, not by his or her own skill at shooting baskets. Likewise, a mentor recognizes that it is far easier to give a lecture than to guide a fellow in how to do it.

Motivating is the fulcrum around which coaching revolves. The mentor conveys the sense of awe about the workings of the body: the excitement in helping to unravel its complexity. He or she imbues the fellow with the power of science, the best hope for achieving progress (20). Science doesn't prevent any of us from making mistakes. But through the criticism of colleagues, errors are gradually corrected and we approach truth. The mentor communicates the thrill of discovery—no drug is more addictive (21). The mentor relates to the fellow the comfort derived

from knowing that the research of today is connected to a much greater process: contributing to the increase in scientific knowledge and improved care of patients—work of everlasting value. This thought helps one realize how trivial are the slings and arrows of everyday life. But comfort of mind must not spill over into complacency. Jacques Monod, one of the founders of molecular biology, warned, "Personal self-satisfaction is the death of the scientist. Collective self-satisfaction is the death of research. It is restlessness, anxiety, dissatisfaction, agony of mind that nourish science" (22). Proper balancing of anxiety and comfort of mind achieves equanimity.

The most creative individuals are driven by curiosity, getting their reward directly from their work (causing colleagues to think them odd) (18). The best people in an organization want to work for reasons beyond salary or title, as if volunteers (23). The mentor relates the sense of fulfillment from working in public service (adding that thanks is rarely vocalized, and is communicated least when the responsibility is greatest). Addressing young people, Albert Schweitzer said, "I don't know what your destiny will be, but one thing I know: the only ones among you who will be really happy are those who will have sought and found how to serve." There is no smaller package than an individual wrapped up in him or herself.

The mentor raises the bar and sets high standards. The fellow is encouraged to achieve full potential: to reach for, and achieve, more than he or she thought possible (24). People are not motivated by small challenges. "Make no little plans. They have no magic to stir men's blood," mused Daniel Burnham, the Chicago architect. The mentor helps the fellow to take risks, to move outside a zone of comfort. Expectations are lofty, yet realistic (7). The idea is to distend, but not perforate.

Confidante

The mentor serves as a confidante: someone the fellow can talk to, knowing the discussions are kept in strict confidence. Mentoring is more an affair of the heart than of the head (7, 25). It is a two-way relationship based on trust—the glue that prevents the units of daily living from falling asunder. The mentor wins and sustains the fellow's trust through constancy (staying the course), reliability (being there when it counts), integrity (honoring commitments and promises), and congruity (walking the talk) (26).

For the fellow's development, the mentor's most critical function is to help the fellow live out a dream (1, 6). A young person's dream is a personal myth, an imagined drama in which he or she is the central character—a role widely portrayed in literature. The mentor helps the fellow realize this dream through affirmation and by helping the fellow emerge in a new world. Mentoring involves an elemental form of the parental impulse, yet is quite different (6). Unlike a parent, the mentor must also be part peer. Excessive paternalism in a mentor will interfere with the primary function as a transitional figure. The mentor's task is to liberate the fellow, and not be overly protective. An actual parent can provide some of the functions of a mentor. But he or she cannot be the primary mentor figure because a parent is too closely connected to the offspring's pre-adult development (in both their minds) (6).

Objectivity must be maintained: the relationship must not be seen as favoritism. The mentor not only conveys compliments, but also points out weaknesses (6, 7). When criticizing, the mentor focuses on behavior, not the person. Specificity is especially important: not much can be learned from vague criticism (or vague praise) (25). A hundred-year-old letter from William Osler, mentor to Harvey Cushing, can be seen in the online supplement (1). Osler points out that specific aspects of Cush-

ing's behavior will be fatal to his success. Osler specifies why this behavior is a problem, and ends by saying he knows that Cushing will not mind the criticism because he understands that Osler has his interest at heart. There is no fellow that does not need to have aspects of behavior criticized. But the task requires considerable tact: inept criticism surpasses mistrust, personality struggles, pay disputes, and power struggles as a source of conflict on the job (25). By holding up a mirror, the mentor enables the fellow to see how his or her character is developing (5).

The fellow has feelings of respect, admiration, and appreciation for the mentor, but also feelings of inferiority, intimidation, envy, and resentment (6). The fellow oscillates between beliefs of being an inept novice, fraudulent imposter, and a rising star that will outshine the mentor. Starting out in a subservient position, the fellow matures to become an equal over time and the relationship evolves into a meaningful friendship. But the relationship can also dissolve into bitterness (6). This may occur because the mentor is bad. Or because of arrogant ingratitude on the part of the fellow. Tacitus grumbled that man is more willing to repay an injury than repay a benefit, because gratitude is a burden whereas revenge is a pleasure.

AND SOME SPECIFICS

Handling Failure

Because it is disheartening, we think of failure as all negative. But it's not (15, 27). Failure tells the size of the challenge taken on. A research project that appears a totally safe investment has a much smaller chance of making a substantial advance than a project carrying a distinct chance of failure. Fear of failure is the death of progress. A fellow can learn more from failure than from success, because one has to ask oneself why one failed. With success, a fellow may get rewarded for the wrong reasons, which encourages bad habits. Major achievers are rarely satisfied by success, and are instead spurred on—rather than deterred—by setbacks (11). “I regard every defeat as an opportunity,” affirmed Jean Monnet, founding father of the European Community (19). But failure is bruising, and the fellow has to learn not to show it. When the fellow encounters failure, the mentor is there to provide reassurance and to caution that dwelling too much on the past can rob one of the future.

Steps to Success

Along the way, the mentor shows the fellow what is needed for success. Success is not achieved by short cuts and gimmickry, but by hard work and persistence (5). “Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence, determination alone are omnipotent,” counseled Calvin Coolidge (28). Persistence is the hard work you do after you get tired of doing the hard work you have already done (14). The fellow needs to think of a task as beyond the whole. When running a 100-yard dash, serious runners aim for 110 yards, so no one will beat them in the last few yards. If they run fast for only 95 yards, the lack of those final 5 yards makes the first 95 pointless (23).

The second requirement is focus, the principle most often violated. Focus needs mental discipline, which is unpopular. Without focus, the fellow ends up with numerous unfinished projects.

Time management is third. Time is the most scarce resource in academic life. Yet it's treated as having no value. Time is inelastic. “Work expands so as to fill the time available for its completion,” says Parkinson's Law (17). Academicians who complain the most about being extremely busy are often the

lowest achievers. The mentor teaches the fellow to document for him or herself where the time goes, to spot time wasters and be ruthless in eliminating them. And the fellow learns that wasting time that leads to innovation is good, and dumping bad work is efficient.

The fourth requirement for success is learning how to handle the natural desire for credit (29). Originality, and its corollary priority, are major driving forces in science—aggravated by the tendency for discoveries to be made simultaneously in more than one laboratory. Attaining priority requires ambition, a word with many meanings and wide variation in moral implications (30). Ambition is healthy when it connotes persistence, resolution, and discipline. But vaulting ambition that includes corner cutting and self-promotion is a disfigurement. The best way to get research done, and succeed in academia, is not to mind who gets credit for it (29). Lots of praise early in a career—even when deserved—can make it more difficult to cope with subsequent setbacks (29). This thought is communicated in the saying, “I have been told of so many coming men. But where do they all go”? And in, “Whom the gods wish to destroy they first call promising.”

Picking a Mentor

When scouting for a mentor, what should the fellow look for? Fellows in their late twenties should seek mentors in their late thirties or forties—a half-generation older (6). Forty-year-old faculty members have usually shed some of their earlier envies, animosities, and petty vanities, enabling them to be more understanding mentors. Enthusiasm is the most important quality: the mentor believes his or her research area is the most exciting in the world. Time: the good mentor makes time to see the fellow, even though he or she may be the busiest person on campus. Leadership always comes down to a question of character: an inner set of values directing a person to what is virtuous or right (18, 31). The world loves talent but pays off on character (27). Next come commitment, common sense, competence, responsibility, and conscience (the inner voice that says somebody may be looking). Because the fellow will need advice about future career, he or she needs a mentor who has good judgment. The good and bad are never neatly separated and most of life is spent making discriminate judgments at the margins (30). In truth, the challenge is more complicated: the choice is rarely between straight bad and good, but in picking the best trade-off among several good options (32). Judgment is the ability to combine hard data, questionable data, and intuitive guesses to arrive at a conclusion that events prove to be correct (33). And lastly the fellow looks for maturity, self-confidence, vision, and a mentor with awareness of what's happening in the academic world outside his or her own institution.

A bad mentor sounds like a contradiction in terms, but some fellows get stuck with a faculty supervisor who lacks mentoring skills (6). The bad mentor is selfish with time. (Time given by a good mentor is immeasurable—and the part least recognized by people who are not mentors.) A bad mentor wants all the glory—it's not enough to see the fellow shine—and may even envy the attention the fellow attracts. Instead of nurturing academic development, the mentor exploits the fellow as a technician. A mentor may also act like Professor Higgins in *My Fair Lady* and try to make the fellow into an image of his or her own choosing, rather than fostering individuality and independence. An overprotective mentor, though meaning well, is also bad for the fellow's development.

Mentoring at a Distance

When fellows find no faculty member to serve as a mentor, they must take responsibility for aspects of their own education. Some

giants in history—Shakespeare and Beethoven—had no personal mentors (34). Einstein received his mentoring at a distance through reading Mach, Poincaré, and Maxwell (34). Churchill never attended university, and educated himself by studying the works of Gibbon, Macaulay, and others (35); the permanent effect of the former two is evident in Churchill's oratory and writing. The total aggregate of Lincoln's schooling amounted to less than a year (30). But he was a bookworm, and over time Lincoln's intellectual self-confidence surpassed that of graduates of the best universities. Books enable a person in isolated circumstances to communicate across years and oceans with the greatest of minds (30). Many leaders have found their principal mentors and models entirely in books (26). For example, Nelson Mandela was hugely inspired by General Kutuzov in Tolstoy's *War and Peace* (36). Researchers of any age can benefit from the insights and maxims contained in the books of Peter Medawar, Michael Polanyi, Richard Feynman, and John Ziman.

Not Pure Altruism

Mentoring is a two-way street, with mentors needing fellows as much as the latter need a mentor (6). As with all teaching, mentors learn more from pupils than they teach them. A researcher gets more done by involving bright young people on projects than working as a lone wolf. The mentor benefits from the reflected glory of the fellow who does well. But the major benefit is the fun of interacting with young people. The interchange liberates forces of youthful energy within the mentor, and he or she gets rejuvenated (6). Osler warned that the physician “who wraps himself in the cloak of his researches, and lives apart from the bright spirits of the coming generation, is very apt to find his garment the shirt of Nessus”—and he will also miss out on “the greatest zest in life” (37). By communicating the most important values of medicine, the mentor satisfies the Hippocratic obligation of passing knowledge to the next generation and at the same time satisfying the desire to pay back (1). “I hold every man a debtor to his profession,” intoned Francis Bacon.

CONCLUSION

In guiding Telemachus, Mentor was assisted by Athena, the Greek goddess who embodied good counsel, prudent restraint, and practical insight (1). Mentors in academic medicine are mere mortals, and do not get help from Greek goddesses. The virtues I list for the ideal mentor are intimidating. A wise reader may wonder whether through writing this essay, I am succumbing to the counsel of my fellow Irishman, Oscar Wilde: “I always pass on good advice. It is the only thing to do with it. It is never of any use to oneself.”

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