

Special Article - Plastic Surgery

Medical Mentorship: Legacy Leadership Links in the Surgery Chain of Being

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Abstract

This short essay proposes that a 21st century surgeon should have the opportunity to be more competent than his or her earlier counterpart, particularly since he or she can learn so much from the accumulated knowledge of medical mentors. By means of Parental Youth-mentoring, Academic-mentoring, and ultimately, Professional-mentoring a legacy of medical leadership is built. As a consequence, the accomplishments of notable past practitioners from ayurvedic Salya-cikitsakas (sixth century B.C. ur-surgeons) to Harry J. Buncke, (1922-2008), the American plastic surgeon, who has been called “The Father of Microsurgery,” forge the next surgery-forward link in the surgical chain of being.

Introduction

Using autogenously bone grafts instead of silicone or acrylic, the late Dr. Paul Tessier [1], who pioneered these now-standard craniofacial-corrective Plastic and Reconstructive surgical techniques in the mid-1950s, asserted that to be a good surgeon you sit at the feet of the masters. Dr. Tessier’s assertion accords with The Hippocratic Oath: Modern Version, which asks its adherents to respect the hard-won scientific gains of those physicians who preceded them. Modern medicine recognizes the tremendous debt it owes these pioneers, whom I call mentoring “legacy leaders.” Dr. Felix Freshwater (Miami, FL), elaborated further on this mentoring prescription: “There are no masters, we are all students. When you stop being a student, you are dead - if not physically then intellectually. Some students are better at gaining new knowledge than others. Some students are better at telling others about what they have learned - they are called great teachers.” Generally, this transference of medical knowledge can be achieved through very formal clinical education supplemented by less formal, although no less important, medical mentoring. In fact, healthcare leadership doyen, Carson F. Dye, has pronounced that “medical mentoring is a topic that has received a lot of attention in the health administration profession. It is regarded as an important part of developing future leaders. The field has largely taken a top-down approach to mentoring... Mentoring tends to work best when the mentee takes personal responsibility for the entire process - that is, finding a mentor to work with, taking the initiative to work with the mentor, and often finding other mentors at other points in career [2].”

Regardless of one’s chosen profession - in large measure, life comprises a series of lifelong sessions in which one inculcates skill sets augmented by professional experiences. Some may best assimilate lifelong knowledge by means of autodidactic educational processes, but others may also do so as a result of supra-educational experiences and interpersonal interactions. Some School of Medicine (SOM) education may comprise one long, intense, gratuitously negative, formalized process by which clinical expertise might be inculcated and assimilated. As one might infer in this instance, no med school instructors “connected” to form mentoring relationships, although

an extramural mentoring regimen formed part of some course activities. Contrary to prevalent top-down-initiated mentoring (that is, formalized mentoring institution-sponsored and -formulated), medical mentoring is a unique variation on this traditional theme.

While addressing his alma mater’s (Williams College, New York) alumni on December 28, 1871), Garfield epigrammatically idealized the bottom-up (that is, often informal, mentee-driven mentoring) value of a mentor/teacher: “Give me a log hut, with only a simple bench, Mark Hopkins [famous American educator and president of Williams College] on one end and I on the other, and you may have all the buildings, apparatus and libraries without him [3].” Relatedly, as chronicled by Candice Millard, President James A. Garfield’s later assassination and subsequent mismanaged medical interventions made him - like so many other high-profile historical figures (Figure 1) - an unwittingly contributor to medical improvements [4].

Eager to learn from the best, highly self-motivated students often initiate a bottom-up mentoring process, which constitutes more a multi-year career guidance schema than a professional healthcare therapeutic or diagnostic hands-on mentoring process? During these early stages of medical careers, this mentoring may

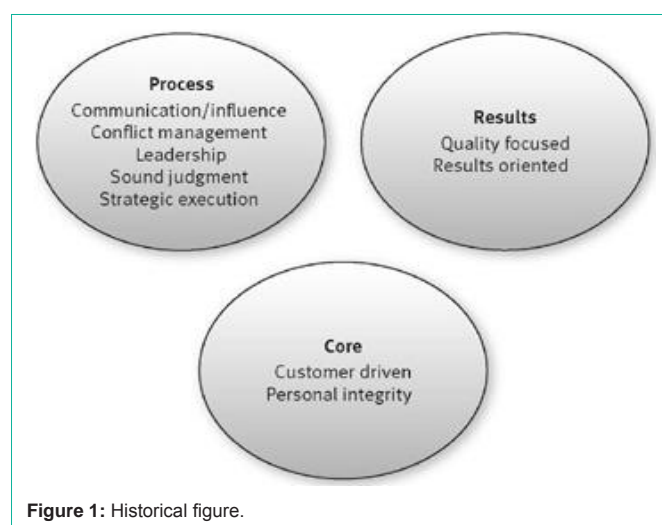


Figure 1: Historical figure.

guide development of professional expertise and will aid high career satisfaction [5]. All the same - as Johnson asserts, the “mentor-mentee relationship creates an excellent partnership opportunity for personal growth [6];” and, a metacognitive awareness of one’s own inherent leadership potential prepares the student to be a better physician and a better leader [7,8].

Thematically, the acquisition of life experiences might be divided into two psychosocial climacterics delineated as: the academic-mentoring of teachers; and, the later professional-mentoring of department heads and other senior-level advisors. During the mentoring process, one figuratively - but, sometimes, literally - sits at the feet of those who have preceded us in what-I-term life’s chain of being, and consequently, who have been presumed to have previously mastered requisite skills which they pass on to us. Occasionally, as in several of my cases of e-mentoring [9], the mentee never meets the mentor, but still assimilates indirect tutelage, typically via the latter’s publications or instructional videos. For example, Dr. Charan Mahatumarat, Bangkok, Thailand, writes of Tessier: “I would respect him as my teacher even though he never taught me directly, but as a craniofacial surgeon, who learned his technique to help the craniofacial deformity children around the world. He will live always in my mind forever.” By virtue of their assimilation of life’s lessons, often through their own mentored concatenation with other links in the surgical chain of being, these individuals constitute legacy leaders for future mentees. By “surgical chain of being,” I am not referring to a metaphysical or mystical state. Rather, this phrase attempts to connote the continuous intergenerational transference - or, devolution, i.e.: the passing down - of knowledge, specifically, surgical knowledge, throughout medical history.

Academic-mentoring

When Homer’s Ulysses sojourned to Troy, he entrusted his experienced senior advisor, Mentor - from whom, axiomatically, we derive this term’s current eponymous usage, i.e.: to steward his estate as well as his son, Telemachus. This stewardship constituted an early example of *in loco parentis* youth-mentoring. Yet - notwithstanding Sigmund Freud’s [10] famous self-analytically prophesy about mothers, “A man who has been the indisputable favorite of his mother keeps for life the feeling of conqueror, the confidence of success which often induces real success [11],” many sons, including Telemachus, emulate their fathers as their primary youth-mentoring role models. More importantly, unlike other mentors, sons are invariably hardwired with paternal DNA, which predisposes them to an array of positive or negative personality and genetic factors.

In one of Alfred Lord Tennyson’s most famous poems, the titular Ulysses indicates he is “a part of all that I have met.” Of course, he did not mean that he was literally a part of everyone whom he had ever met; rather, he meant that they had inextricably constituted a pervasive presence within his aggregated experience. On the other hand, or - more precisely, on the other chromosome, Bill Bryson [12] points out that the sixty-four generations since Ulysses comprises one quintillion (i.e., 1 followed by 18 zeros) parents and parents of parents who have contributed to our genomic and proteomic make-up. Overlay our chromosomes with experience, as Ulysses did in all his Homeric leadership roles, and - inarguably, we owe an incalculable debt to those who have preceded us in the chain of being, but we

also have a duty to share what we have learned and experienced with those who come hereafter. Ulysses strives “To follow knowledge like a sinking star, /beyond the utmost bound of human thought.” Like the Greek hero-leader, part of our experience is the assimilation of knowledge, most typically through the academic-mentoring of teachers: over the course of my medical career so far, I have also been privileged to have been professionally mentored formally and informally by many distinguished practitioner surgeons. I shadowed 70+ surgeries prior to matriculating to med school. Many of those surgeries were performed by a late, preeminent local plastic surgeon, with whom I shared mutual trust and respect, and who shared his experience in performing aesthetic plastic surgery procedures including liposuction, rhinoplasty, and particularly facelifts, eyelids, and brow lifts (and more interestingly reconstructive cases). Jeffrey delineates the following positive examples of effective medical mentoring support:

- Providing easy access for face-to-face meetings with their tutor, at least twice a

Year;

- Encouraging students to access guidance and advice to achieve their full potential;
- Providing individual support of study skills;
- Providing clear information to students on available support networks, including

Peer support;

- Raising awareness of the student counseling and local GP services;
- Providing guidance on the core curriculum, optional components and assessment

Methods;

- Providing regular and prompt feedback on their academic development;
- Providing sample exam questions for practice purposes;
- Encouraging struggling students to keep in regular email contact with their tutor.

My own mentor imparted a personalized and developmental skills introduction for me to surgery and to the culture of medicine. Professional development choices are often predicated on one’s early experiences with other role models in that profession. Inextricably, through such interactions, the mentor shapes mentee’s early impressions of the profession and fostered passion for it. Mentors not only expose mentees to the culture of the profession, but they also enable them to develop a sense of being valued by that profession and developing their own inherent leadership skills [13-15]. Through the efforts of this experienced and emotionally intelligent mentor, I accessed someone who possessed intuitive, insider details about the inner working of the profession. By valuing individual input, positively soliciting feedback, and being flexible in perceiving idiosyncratic responses to issues, the mentor helped to define my medical research objectives and plan to achieve them.

Professional-mentoring

To emphasize core competencies, clinical/therapeutic/diagnostic skills, and the achievement of results, many hospitals or large healthcare organizations have leadership competency models, such as the one illustrated below from the Saint Boniface Healthcare Center leadership institute materials [16]:

Relatedly, Dr. Joseph D. Tariman [17] considers mentorship as a key valence by which to introduce new authors to the mechanics, not of writing, but of publication. My mentor immersed me in those significant processes and continues to influence my life most positively. He has a fascinating and unique weltanschauung, a way of seeing and thinking of the world; and, has both inspired my creative thought and functioned as a sympathetic and mutually trusting receiver for my feedback. By undergirding my ongoing professional development, clinical decision-making, and quasi-leadership skills, he and the other SOM plastic surgery mentors have abetted my transformation from being not only a consumer of knowledge, but a producer of knowledge, and, in so doing, have assisted in optimization of my potential.

As illustrated above, mentorship should not be analogized to the trussel of a die striking and imprinting the malleable surface of the mentee. Mentoring is infinitely more subtle as Dr. Charan Mahatumarat suggested above: he had never been taught by Tessier, but still learned immeasurably from him. In this respect, mentees seek out those mentors who instinctively, and often heroically, understand the psychosocial dynamics inherent in their profession, as well as its culture and its politics; and, who – in the mind of the mentee, have defined their profession. As a consequence, we are influenced – perhaps worshipfully, by what might be termed indirect or non-personalized mentoring, such as that of internationally renowned Dr. Paul Farmer whose book, *Mountains Beyond Mountains*, detailed his childhood living in a school bus and his subsequent medical career. Dr. Farmer has greatly influenced me with his selfless dedication to poorest-of-the-poor patients with drug-resistant TB in Haiti. He also demonstrates that I should think of my medical career globally and not limit my worldview; and that, I should also be interested in international relations and serving the disenfranchised and underserved. Similarly, I also have great respect for Dr. Atul Gawande, an American physician and journalist, who serve as a general/endocrine surgeon at Brigham and Women’s Hospital in Boston, Massachusetts, and are renowned for his campaign to reduce surgical error, improve safety, and increasing efficiency. Likewise, Dr. Laura J. Esserman, Professor, Departments of Surgery and Radiology, and Affiliate Faculty, Institute for Health Policy Studies, UCSF, Director, Carol Franc Buck Breast Care Center, is also one of my medical heroes for the way in which she horizontally integrated a disparate set of medical units into what is now a world leader in breast cancer care and research: from 1997 to 2003, the patient load went from 175 to 1300 [18]. All three of these medical heroes have demonstrated incomparable leadership qualities in overcoming organizational challenges.

Mentoring and the surgical chain of being

Represented by revolutionizing technical or procedural innovations, such as that of Tessier to which I alluded above, many significant links obtain in what I refer to as the “legacy leadership

links in the surgical chain of being.” By “surgical chain of being,” I am not referring to a metaphysical or mystical state. Rather, this phrase attempts to connote the continuous intergenerational transference – or, devolution, i.e.: the passing down, or moving forward - of knowledge, specifically, surgical knowledge, throughout medical history. Nor am I referring to the systematic attempts at purposefully inculcating business leadership principles, such as the five legacy leadership practices of: vision and values, collaboration and innovation, influence and inspiration, diversity and community, and responsibility and accountability [19]. My vision of surgical chain of being is predicated more on William J. Mayo’s famous address to the National Education Association in 1928:

The glory of medicine is that it is constantly moving forward, that there is always more to learn. The ills of today do not cloud the horizon of tomorrow, but act as a spur to greater effort. The triumph of the medical profession lies in the victory over physical ailments of man.

In the aggregate, medical education itself is demonstrably the continuous devolution of knowledge from one knowledgeable generation to one unknowledgeable generation. Conceptually, medical history may then be said to constitute the sum continuum of such intergenerational devolutions “to advance,” as Mayo again says, “the science of medicine.”

Starting, for example, with the father of surgery in the sixth century B.C., these links connect us latter-day physicians to the past as well as to the future: we are the recipient of the legacy leadership conferred upon us by such notable ayurvedic Salya-cikitsakas (ur-surgeons) as Sushruta and his own teacher, Divodasa Dhanvantari, who was himself influenced directly or indirectly by the personalized or non-personalized interaction of those who went before him and who shared their knowledge and experiences with later generations. Throughout the unspooling of history, each physician stands on the shoulders of other plastic and reconstructive surgeons, who pass down that knowledge to subsequent generations. However, combined with their own innate genius, time and technical and intellectual advancements presents some surgeons with the opportunity to develop procedures which contribute – to make an historical jump - in a more significant way to a broader professional constituency, such as: Gaspare Tagliacozzi (1546-1599), who first noted his reconstructive skin flap operation in his *Epistola ad Hieronymum Mercurialem de Naribus multo ante abscissis reficiendis*, 1587, and who contributed ineluctably to the body of knowledge which influenced English surgeon Joseph Constantine Carpue (May 4, 1764–January 30, 1846), who performed the first rhinoplasty in England and published his *Account of Two Successful Operations for Restoring a Lost Nose* in 1815. Carpue, undoubtedly, influenced Sir Harold Gillies, the modern father of plastic surgery, and so forth, down to the present day and beyond, such as to: Varaztad Hovhannes Kazanjian, the American Maxillofacial and Plastic Surgery pioneer and Harvard’s First Professor of Plastic Surgery, who revolutionized the fields of both maxillofacial surgery and plastic and reconstructive surgery; and, Irving B. Goldman, first president of the American Academy of Facial Plastic and Reconstructive Surgery, and a Mount Sinai Hospital otolaryngologist, plastic surgeon and professor, who a popular rhinoplasty class which expounded the “Goldman Tip;” and,

Harry J. Buncke, the American plastic surgeon, who has been called “The Father of Microsurgery.”

Through codification of and essentially “paying forward” their best surgical practices, all these individuals comprise the epistemological forebears of my generation of surgeons. All these practitioner plastic surgeons represent an unbroken chain of knowledge and experience which filters down to the present day. Yet, if Heraclitus was correct that “an abundance of knowledge does not teach us to be wise,” neither does simply exposure to knowledge teach us to be able to perform surgery. Rather, an individual has to actual assimilated knowledge pedagogically. As David Premack, Emeritus Professor of Psychology at the University of Pennsylvania adroitly asserts that:

Pedagogy transforms the human. It perpetuates old technologies and launches new ones. A mother teaches her child to do the things her mother taught her, preserving tradition. She may also teach her child new technologies, creating new traditions. Nothing may contribute more to human transformability than this humble fact: Humans teach one another [20].

For example, I received suturing lessons from a very prominent local plastic surgeon, who only half-heartedly schooled me in the preliminaries of suturing. Consequently, because this was a skill I passionately wanted to learn, I basically taught myself the Gillies’ knot and other famous sutures. Afterwards, I became so proficient at suturing that I excelled over surgeons who had done it for years: one resident suggested that I had acquired my “Something The Lord Has Made” suturing skills from my surgeon-father, but I told him that my father was actually a librarian and that I had taught myself to suture.

Sometimes, as in the case of Nicolas Steno (“ductusstenonianus” [Parotid duct]),” the brilliant seventeenth century anatomist, who as a young medical student entered the orbit of many prominent western European physicians and scientists, we learn enough from our mentors and our own powers of observations to question conventional wisdom. Mentored himself by fellow Dane and physician Thomas Bartholin (1616 –1680), who discovered of the lymphatic system, Steno’s unexampled skill with a scalpel enabled him to overturn long-entrenched Galenist traditions and to move medical science forward through the surgical chain of being.

From a half-century old British Medical Journal, the Dean of the Tufts University School of Medicine quotes Raymond Whitehead [21], who said: “Medicine is not a field in which sheep may safely graze.” He indicates that this statement is as true today as in 1956, and that “Today a physician must be master of many universes - at ease in the sub-cellular realms of our DNA and in a community clinic; facile with computerized virtual reality and with the fiscal realities of managed care including training in business, communication, public health and technology.” Competency in one’s specialty, e.g. plastic and reconstructive surgical techniques, is paramount for any physician in any century; but we must work within the technological and sociocultural constraints of the age in which we are born. Inarguably, professional competency is a major issue in the everyday practice of medicine, especially, for a surgeon or radiologist, whose ministrations may result in a better life for his patients or death. As in any field of endeavor, the better and faster I can assimilate the specific techniques associated with my chosen field, the better and sooner

and longer I can contribute to that field. For this reason, mentoring is quintessential to my professional and leadership development. This is true of an automobile mechanic learning how to rebuild an engine better and faster (so he can rebuild them better as he develops more hands-on experience), as it is of a surgeon learning clinical, technical, and interpersonal communicative skills for rebuilding a face needing a hemifacialmicrosomia. Competency is competency, and is *sine qua non* to any field at any time. The products of technology and research abet the assimilation of cutting-edge knowledge, often through the intersession of mentors, and thus enhance competencies over the Tagliacotian operations of four hundred years ago. Some of these competencies are emphasized by the psychologist Mihaly Csikszentmihályi as accompanying an experience of flow [22], notably:

- *Clear goals* (expectations and rules are discernible and goals are attainable and align appropriately with one’s skill set and abilities).
- *Concentrating and focusing*, a high degree of concentration on a limited field of attention (a person engaged in the activity will have the opportunity to focus and to delve deeply into it).
- *A loss of the feeling of self-consciousness*, the merging of action and awareness.
- *Distorted sense of time*, one’s subjective experience of time is altered.
- Direct and immediate *feedback* (successes and failures in the course of the activity are apparent, so that behavior can be adjusted as needed).
- *Balance between ability level and challenge* (the activity is neither too easy nor too difficult).
- A sense of personal *control* over the situation or activity.
- The activity is *intrinsically rewarding*, so there is an effortlessness of action.
- People become absorbed in their activity, and focus of awareness is narrowed down to the activity itself, *action awareness merging*

Legacy leadership has prevailed in the field of medicine ever since: ur-surgeons were plying their trades in 18th dynasty Egypt (1550 BC); or, when Galen was stitching gladiators back together using for-that-time his best medical knowledge and compassion; or, when Sushruta was developing his forehead-skin-flap-to-nose replacement proto-plastic surgery techniques in ancient India; or, when- in the management of maxillofacial trauma in the renaissance - such as a London surgeon (plus, imprisoned counterfeiter and blacksmith) John Bradmore’s ingenuous removal of a barbed bolt from the face of the 16-year old heir to the English throne, later Henry V, at the Battle of Shrewsbury (<http://www.rcpsg.ac.uk/hdrg/2006Nov3.htm>). That legacy leadership has included not only mastery of both the professional clinical (and, reconstructive surgical and blacksmithing) skills needed to treat patients combined with self-awareness of one’s emotional investment, but also the Csikszentmihályian psychological rewards alluded to above, which will continue to constitute the

major issues in the everyday practice of medicine. In deference to the Hippocratic epigram prefacing this article, I consequently not only respect the hard-won scientific gains of those physicians in whose steps I walk, but value them above rubies. I value them so highly because these gains have – in many instances, such as Sir James Young Simpson’s near fatal self-administration of “sweet whiskey” (later, chloroform) for obstetric anesthesia, been so dearly won. As a result of the incalculable contributions of prior medical practitioners, the 21st century surgeon should have the opportunity to be more competent than his or her earlier counterpart. This is particularly true since he or she can learn so much from the accumulated knowledge of medical mentors, who – through the legacy of medical leadership, have undeniably forged the next link in the surgical chain of being.

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