

## PRESIDENT'S ADDRESS

### A Brief History of Mentoring

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The characteristics of the membership of the Climatological, and of their spouses and guests, make the choice of a topic for the president's address a challenging affair. Most presidents have introduced their talks with some reference to the exigencies of the process. What may be widespread generic reactions to the prospect are suggested by two samples published elsewhere (Figures 1 and 2). Among recent presidents of the Climatological, Mike Tilghman, in 1980, reported that, in what must have been a frantic moment, he checked the constitution of the Association and discovered, one may presume to his delight, that there is no mention of a requirement that the president give an address. In the event, however, the pressure of tradition was such that Mike was unable to invoke the privilege latent in his discovery, and gave a talk anyway. Bob Austrian, in 1984, mentioned at the outset his consternation concerning the content of his discourse. I can report, with the hope that it will not discomfit him, that on being notified at the previous year's meeting of his selection as the new president of the Association, he exclaimed, "I'll be sick for a year!" Dick Johns, in contrast, had no difficulty whatever. He reported in his presidential address in 1987 that he was going to present a topic on which he had wanted to speak for a long time, but that he had been prevented from doing so because no one would invite him to speak on it. His election to the presidency of the Association offered a ready detour around that problem.

In my own case the process was set in play before I had even begun to contemplate when to start worrying. The triggering event was the appearance in *The New York Times* on November 13, 1993 of an extensive obituary for Bill Dickey, the great Yankee catcher and Hall of Famer, who had died a few days before<sup>(1)</sup> (Figure 3). Such was my boyhood devotion to the Yankees and to the greats of that era, including Gehrig, Rolfe, DiMaggio, Poosh 'Em Up Tony Lazzeri, and, of course, Dickey, that I read the obituary with keen interest. After

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THE CHRONICLE OF HIGHER EDUCATION

GEORGE ABBOTT

*“Bosley, I’d like you to write a prepared text so I can depart from it.”*

FIG. 1.

sketching the highlights of Dickey’s brilliant career, the writer noted that toward the end of Dickey’s playing days a young catcher had been brought up by the Yankees and was being groomed as his successor. This young man was Yogi Berra (Figure 4). He was coached extensively by Dickey, sometimes in private, and one day a reporter asked Berra what it was that Dickey was saying to him during those tete-a-tetes. Yogi said in response, “Bill is learnin’ me his experience.” Berra, as you know, became famous for his ability to epitomize great truths, much in the manner of Casey Stengel. Other examples of this genre include “It ain’t over ‘til the fat lady sings,” and Berra’s great clinical epitome: “You can see a lot just by observing.” Each of these, of course, has substantial penetrance for medicine, but “Bill is learnin’ me his experience” triggered in me a set of ruminations. As I reflected, I saw that mentoring was the process at issue, and, further, that mentoring is a



FIG. 2. Drawing by Shanahan; © 1989, The New Yorker Magazine, Inc.

central force in the replication of key elements of professionalism represented in medicine in a particularly powerful way. In particular, it seemed to me to emerge as having special importance in the academic enterprise in medicine, in which the pursuit of excellence and of accomplishment behaves to a significant degree as a transmissible characteristic.

Mentor was a major figure in the Homeric legend of the Trojan War (2). When Ulysses (Odysseus), King of Ithaca, left to go and make war on the Trojans he left his infant son, Telemachus, and his wife, Penelope, in the hands of Mentor, his friend and retainer. To a major degree Mentor was responsible not only for the boy's education, but for the shaping of his character, the wisdom of his decisions, and the clarity and steadfastness of his purpose. You will recall that Ulysses was gone for some twenty years, and had immense difficulty wending his way back home after the war was over. As Telemachus grew to young manhood he undertook a search for his father, and Mentor came with him. Mentor's role was embellished by the fact that Athena, the supreme goddess of the Greeks, recurrently took on the form of Mentor, especially when things looked particularly bleak or confusing for

THE NEW YORK TIMES **OBITUARIES** SATURDAY, NOVEMBER 13, 1993



Bill Dickey playing for the Yankees in 1939.

International News Photos

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***Bill Dickey, the Yankee Catcher  
And Hall of Famer, Dies at 86***

FIG. 3.

Telemachus, or when critical choices had to be made. Athena embodied “good counsel, prudent restraint and practical insight. . . she personified wisdom and righteousness and in her Roman incarnation as Minerva she was the goddess of the arts and professions”(3). Thus, there was an important spiritual element in the character of Mentor, in addition to the pragmatic contributions he made to the boy’s welfare. The presence of Athena in the form of Mentor meant that in a certain



FIG. 4. (Yogi Berra)

Source: National Baseball Hall of Fame and Museum, Inc.

sense the help Telemachus received was “a gift of the gods; the mentoring was a gift relationship. . . .the gods recognized that Telemachus, like all young men, had to leave his own home and the shelter of his parents’ house in order to undergo the maturation, the seasoning, that would allow him to become a man”(3), and Mentor guided him in this critical transition. By the end of his journey Telemachus had grown in wisdom and could function independently; he returned home, where he found his newly-arrived father and joined him in slaying the unwanted suitors of Penelope. “Mentor was the transition figure in Telemachus’ life during the journey from youth to manhood”(3)(Figure 5).

We see in the Greek myth not only the origins of what we mean when



FIG. 5. Giovanni Battista Tiepolo: Telemachus and Mentor. Rijksmuseum, Amsterdam.

we think of a mentoring relationship, but also eloquent expression of important elements of its anchoring and guiding characteristics. For example, Homer has Mentor say, during a difficult moment in Telemachus' search for his father, "Telemachus, let not your courage and resource fail you now. In your father deed and word notably march together to their deliberate end. If your body holds a trace of his temper it will suffice to make this effort of yours neither bootless nor aim-

less”(4). Even if none of us has spoken in quite this grand and noble a fashion to a protege, the implied message has surely been transmitted by most in this room.

There is a not inconsiderable literature on mentoring, much of it pertaining to fields other than medicine. One of the seminal publications was produced by a group of social scientists at Yale headed by Daniel J. Levinson, and appeared in 1978 under the title, “The Seasons of a Man’s Life”(5). The book reports a study of 40 men whose biographies were elicited in a manner that allowed a degree of reconstruction of their lives, and development of some generalizations. The mentoring relationship emerged in these studies as one of the most important an individual can have in early adulthood. The mentor, ordinarily several years older, with greater experience and seniority in the world the protege is entering, serves variously as teacher, sponsor, advisor and model: as teacher in enhancing the younger individual’s skills and intellectual development; as sponsor in using his or her influence to facilitate the protege’s entry and early advancement in the field they both inhabit; as host and guide, in helping to initiate the younger person into a new occupational and social world, acquainting him or her with its values, customs, resources, and cast of characters; as advisor, providing counsel, moral support and direction; and through his or her own virtues, achievements and lifestyle, serving as an exemplar whom the protege can seek to emulate.

In Levinson’s view the most critical function of the mentor is to support and facilitate what he calls “the realization of the Dream,” fostering the protege’s development by believing in him or her, sharing the youthful Dream, providing a blessing for it, helping to define the newly emerging self in its newly discovered world, and creating a space in which the younger person can work on a reasonably satisfactory life structure that contains the Dream(5). The literature generally supports the view that mentorship in the early years is critical for launching productive careers, for learning the informal network that supports productivity, the inner workings of professional associations and the identities of the most productive people(6). It has been suggested (3,5,7) that there are important benefits in these relationships for the mentor as well: the mentor, who in general extends the invitation to the protege, is likely to identify as most promising those whose careers promise to parallel his or her own. As mentors select their proteges there must be not only the recognition of genuine promise, but some degree of personal resonance. Further advantages for the mentor may be seen as “the molding of a successor or disciple to carry on one’s work, the perpetuation of certain codes or covenants in one’s profession or, a

somewhat more selfish but still valid motive, the provision of a presence that is otherwise absent in the mentor's life. It is a gift relationship. The object of the gift must catch the eye, the mind and often the heart of the mentor"(3). Several authors (3,5,8,9) have described the course of the mentoring relationship as one that is itself cyclical. It is by definition time-limited: it must ultimately break up. In some instances this process is difficult and unpleasant, but the ultimate outcome is ordinarily lasting friendship.

Surveys in a variety of arenas have suggested that the mentoring relationship has strongly positive effects on the career of the protege. Among business executives (10), lawyers (11), chemists and others in the natural sciences, as well as faculty in the social sciences or humanities (12), mentoring has been associated with greater career satisfaction and perceived success. A 1989 study of research scientists in departments of medicine (11) revealed that, when asked to indicate which experiences had most influenced them to undertake research training, an outstanding professor/mentor was at the top of the list for MDs, MD/PhDs and PhDs, most strikingly in the case of MD researchers, 35.5% of whom listed this as the most important single influence in the selection of a research career. In another study, among women in academic medicine (14), 61% of those who responded had had a mentor of either sex during their training, although a number indicated that they had had difficulty in finding mentors and felt particularly the lack of available senior women to serve in this capacity. Those who had had a mentor during training spent more time in research activities and averaged 13.1 publications, compared to 10.3 for those without a mentor. The sex of the mentor was not a significant influence on either of these. Further, those who had had a mentor reported greater career satisfaction. The importance of sponsorship in determining the institution that serves as the career entry portal for the protege has also been emphasized (12). Finally, there is some evidence that those who have been mentored early in their careers in turn become mentors in higher numbers. In a survey of departmental chairs and residency and fellowship program directors at an academic health center (15), some 90% reported having had a mentor during their training; of these, 81% had become mentors in turn, suggesting that mentoring activity tends to be a self-perpetuating phenomenon. In addition, it may be valid to speculate that, since these were senior faculty and chairs, their selection as proteges may have had something to do with apparent academic promise, and their mentoring relationships may in turn have been facilitated and promoted by personal factors, such as academic ambition.



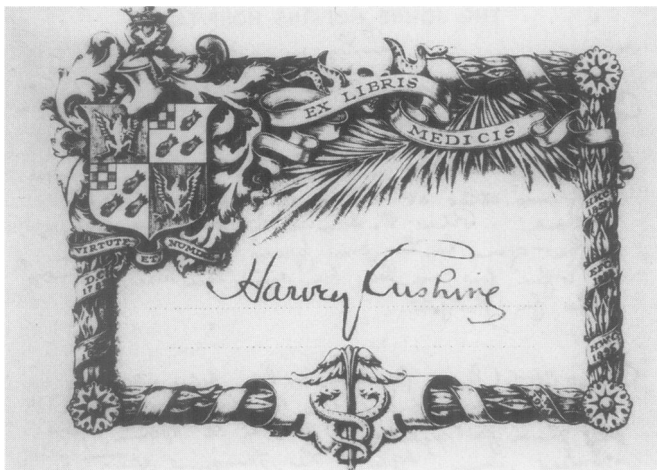


FIG. 6. Cushing's bookplate. From the historical collections of the Cushing-Whitney Medical Library at Yale University. Previously published in *Transactions and Studies of the College of Physicians of Philadelphia*. Reproduced with permission.

A paradigmatic mentoring relationship in medicine existed between William Osler and Harvey Cushing (16). Cushing was an 1895 graduate, *cum laude*, of the Harvard Medical School. After 16 months as a house pupil at the Massachusetts General Hospital he came to Baltimore in 1896 as an assistant resident on Halsted's surgical service. It was plain from the outset that he was brilliant, talented and creative. He spent four house staff years at Hopkins and then joined the faculty.

Halsted was clearly Cushing's surgical mentor. He described Halsted as "shy, something of a recluse, fastidious in his taste and in his friendships, an aristocrat in his breeding, scholarly in his habits"(17). There are clear parallels here with important elements of Cushing's own character, resonances that must have been important in the master/protege dyad that emerged. From Halsted he learned surgical technique and an experimental approach to surgical problems, and from Halsted he received at first permission, and later, encouragement, in his early ventures into neurosurgery. Through Halsted he met many of the great surgeons of his time. Most importantly, he found in Halsted a compelling model of the academic surgeon. Nevertheless, key features of a true mentoring relationship were missing. These came from William Osler.

Osler, as became increasingly clear in Cushing's early Hopkins years, recognized that this was an extraordinary young man, and plainly marked him for special attention. The small size of the staff, his involvement with those of Osler's patients hospitalized on the surgical

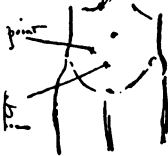
## THE JOHNS HOPKINS HOSPITAL.

..... Cushing

Complaint - Appendicitis

Past History unimportant as far as present illness in question.  
 No previous attacks at all resembling appendicitis. Colic  
 remissions. Patient has been always strong and well.  
 For first year has had some gastric distress of indigestion  
 due to poor food, and has been during this time a little  
 poorer from that cause.

Present Attack (Sunday Sept. 16. 22 hours before operation)  
 Has been feeling perfectly well but tired from loss of  
 sleep for a few nights. At 6 in the afternoon, after  
 "brushed" dinner began to lose consciousness - of  
 abdominal pain. At first not severe and without definite  
 localization. Soon on left side. "Cramps" became  
 more severe and left some persons during interval.  
 By 4 P.M. pain was pretty constant with exacerbations.  
 and has become localized below the umbilicus but localization  
 soon more very definite, and more marked in the  
 right iliac space. Some tenderness was observed at  
 this time quite below and to the inside of McBurney's point.  
 There were no vomitings about this time  
 & giving relief.



There continued quite severe during the night  
 requiring morphine  $\frac{1}{2}$  at 5 P.M. Tenderness  
 has become quite distinct at this time  
 but not too marked. It was aggravated

FIG. 7. Admission history of his own case of appendicitis, written by Cushing. From Fulton, Reference 17.

service, and the intensity of the intellectual ferment in the institution must have made for frequent exposure of the one to the other. During Cushing's first two years at Hopkins, Osler's influence had already begun to show itself, for example, in Cushing's newly developed interest in books, bookplates (Figure 6), and the acquisition of a library. About a year after Cushing's arrival in Baltimore he developed acute appendicitis. He wrote the admission history himself (Figure 7), and was seen in consultation by Osler before being operated upon by Halsted. At the conclusion of his residency training he spent some 14 months in Europe, where he was introduced to the wider world of medicine, largely through Osler, who was spending the summer in England. He saw a good deal of the Oslers (Figure 8) on this trip, during which he also worked in some of the great surgical and physi-



FIG. 8. Mrs. Osler and Revere, Cushing behind, on the Thames, 1900. From the historical collections of the Cushing-Whitney Medical Library at Yale University. Previously published in *Transactions and Studies of the College of Physicians of Philadelphia*. Reproduced with permission.

ologic laboratories on the continent, thanks to Halsted's intercession. In Cushing's early faculty years Osler became a personal and professional guide, cautioning him, for example, on the potential adverse effects of some aspects of his behavior (Figure 9). As Cushing opened his practice, Osler sent him an occasional consultation (Figure 10) and introduced him further to the study of the history of medicine and to bibliophilia. In his early faculty years Cushing, together with Thomas Futcher and Henry Barton Jacobs, took rooms on West Franklin Street in the house next door to the Oslers (Figure 11); they were promptly given latchkeys to the Osler house, and they came and went freely, for access to Osler's library, and for warmth, friendship and intellectual exchange. Cushing's near-filial relationship with the Oslers was further manifested when he introduced his intended, Kate Crowell, to them; after their marriage Mrs. Osler took the new bride under her wing. Much later, during World War II, when the Osler's son, Revere, an artilleryman in the British Expeditionary Force, sustained severe shrapnel wounds in Flanders, Cushing, then in Europe with Base

3/3/02

1 West Franklin St.

"... you will not mind a reference to one point—the statement is current that you do not get on well with your surgical subordinates and colleagues. I heard of it last year and it was referred to by a strong admirer of yours in New York. The statement also is made that you've criticized before the students the modes of dressings, operations, etc., of members of the staff. This, I need scarcely say, would be absolutely fatal to your success here. The arrangement of the Hospital staff is so peculiar that loyalty to each other, even in the minutest particulars, is an essential. I know you will not mind this from me, and have your interest at heart.

Sincerely yours,  
Wm Osler

and, a few days later:

1 West Franklin St.

Dear C—Do nothing of the kind! Who is free from faults and failings! It is a simple matter—"Keep your mouth" (as the Psalmist says.)'

FIG. 9. Note from Osler to Cushing, March, 1902. Cushing-Osler correspondence, historical collections of The Cushing-Whitney Medical Library at Yale University.

DR. WILLIAM OSLER,  
No. 1 W. FRANKLIN STREET.

CONSULTATION HOURS,  
2.30-4.30 P. M.

BALTIMORE, Feb. 27th, 1899.

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Dear Cushing:-

I had hoped to see you yesterday to speak to you about this case, Mr. Bailey, of Memphis. He has evidently had an abscess of the lung or a perforating empyema at the left base. His general condition is good, and I do not think there is any indication for operation. He is very anxious to have a skiagraph taken, and I have told him that I thought you could arrange it, and that your fee would be twenty-five dollars. I told him too that you had only just got back this morning. There may be some difficulty in getting the apparatus arranged.

Sincerely yours,

*P.S. I cannot be over until  
12 today. So will  
wait till then.*




FIG. 10. Referral note from Osler. From the historical collections of The Cushing-Whitney Medical Library at Yale University.

Hospital No. 9, a Harvard unit, was nearby, and attended the laparotomy at which Crile and others attempted, unsuccessfully, to save the boy. Cushing warned the Oslers in a telegram of the seriousness of Revere's wounds, and attended his burial in Belgium. The correspondence that followed reveals the depth and strength of his relationship with the Oslers at this time (Figures 12, 13). Clearly the early mentoring had changed to a deep and important friendship.



FIG. 11. Nos. 1 and 3 West Franklin Street, Baltimore. The Osler house is on the corner. From the historical collections of The Cushing-Whitney Medical Library at Yale University.

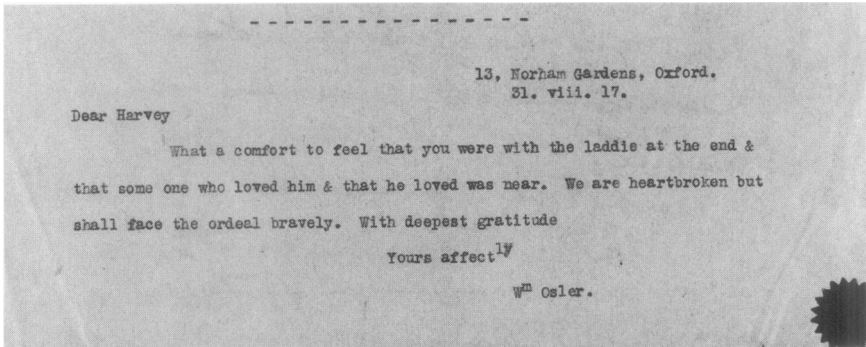


FIG. 12. Note from Osler written on the day of Revere's death. From the Osler Library of The History of Medicine, McGill University.

Why did Osler take up this attractive, brilliant, but somewhat prickly young man, a surgical resident, in the fashion in which he did? They were separated in age by twenty years, and at the time of Cushing's arrival in Baltimore Osler was probably the most prominent

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St. Katerina Bay June  
2 1891.

A line of love or thankful  
 remembrance for all you did  
 for the dear Laddie two years  
 ago. I think of what it meant  
 it must have meant to him  
 to open his eyes & see his dear  
 friend beside him. How hard  
 it must have been for you!  
 but to us it is & has been  
 an unexpressible comfort:  
 who was the nurse? I do  
 not believe we ever had her  
 name.

Best love to you all

From ever  
 yours  
 W. Osler

FIG. 13. Note from Osler, 1919. From the Osler Library of the History of Medicine, McGill University.

physician in the country; his text had spread his fame widely, and his clinic was much sought after by young men seeking post graduate training and academic careers. Duffy (3) has suggested that Osler, like some other mentors, had chosen for his protege a near-reflection of himself. Their early lives offered striking parallels: both came from

large families and had numerous older siblings; both experienced in childhood an emphasis on industry, self-discipline and the importance of making one's own way; both were drawn early to reading the classics, Osler at Trinity College and Cushing at Yale; both had been mischievous as boys and both had demonstrated early interest in sports (Figure 14). Thus, "Cushing entered Osler's life already well equipped with a pedigree, character and interests that must have appealed strongly to Osler; the surgical resident was an eerie reincarnation of the older man"(3). An additional set of forces may have derived from the fact that Osler's son developed interests substantially divergent from those of his father. Revere loved the outdoors, he loved nature, and he loved fishing. His bibliophilic interests were certainly minimal. Cushing in these respects more closely resembled his spiritual father than did Osler's natural son (3). In an ironic echo of the classic story, Duffy cites a birthday greeting sent by Osler to Revere during one of the father's frequent absences from home: "many happy returns of the day to the small Telemachus in care of mistress Penelope from an old Ulysses." (Osler was 46 years old when Revere was born). Osler may well have been an absent Ulysses from the boy's point of view, while at the same time he was Mentor to his adopted son (3).



FIG. 14. Yale freshman baseball team, 1888. Cushing is in the front row, center. From the historical collections of The Cushing-Whitney Medical Library at Yale University.

Ultimately Cushing's professional life took on the characteristics of his mentor's: both developed preeminent clinics and became legendary teachers; both wrote widely in the technical arenas of their fields, and both wrote extensively in relation to philosophic and educational considerations in medicine and the broader cultural insertions of the profession. Both assembled great libraries, in Cushing's case focused on a primary interest in Vesalius and assemblage of one of the great collections of Vesaliana. Ultimately he left his library, joined with those of his good friends Arnold Klebs and John Fulton, to Yale, where it is now the Cushing/Whitney Historical Library, a clear echo of the Osler Library at McGill. In writing the Osler biography, Cushing offered a final act of devotion, and, at the same time in effect extended Osler's mentoring to the generations of students and physicians who came after him.

The continuing importance and power of mentoring in medicine are widely, if tacitly, acknowledged in its persistence and especially in the personal bonds that characterize it, although data are difficult to come by. Review of the acceptance remarks offered by individuals receiving the Kober Medal of the Association of American Physicians provides a kind of window on the process. The Medal was established by Dr. George M. Kober in 1925 at the 39th annual meeting of the Association. In the instrument of gift he indicated that the Medal should be "awarded annually to a member of the Association of American Physicians who has contributed to the progress and achievement of the medical sciences or preventive medicine (18)". The Kober Medal has been awarded to individuals of such distinction that it has become widely regarded as one of the signal honors in academic medicine. In the early years the custom was that the awardee either offered no acceptance remarks, or spoke only very briefly. A few mentioned their teachers, but most did not describe whatever mentoring relationships they might have had. This custom, acknowledging in some detail the importance of prior mentoring relationships, began with the acceptance remarks of Dr. Peyton Rous in 1953 (19). He referred at length to his relationship with Aldred Warthin, professor of pathology at the University of Michigan. Rous said, "To work close to him was to have things revealed. Vehement, impassioned, and generous, no effort was too great for him when he cared about someone." And also, "To Warthin I now rush in thought, like a child all aglow, to show him the Kober Medal. . . . much have I traveled in realms of gold with Aldred Warthin." Since that talk the Kober Medal has been awarded to living recipients on forty-one occasions. At these presentations 43% of the



awardees have referred specifically and by name to their mentors, generally recalling relationships in their careers some thirty to forty years previously. While the Kober Medalists can hardly be viewed as an aliquot of those in American medicine, or even of those in academic internal medicine, the frequency with which mentoring experiences are explicitly referred to by them is testimony to the importance of the mentor in shaping the academic career.

Going through the responses of the Kober Medalists is an immensely rich experience. A few examples of a general nature are of interest, in a sense constituting mentoring advice not only to contemporary juniors, but to academic posterity as well. William Henry Welch, in 1927, for example, offered the following: "Allow nothing to divert you from your professional and scientific work. While maintaining a spirit of cooperation, resist the call to give general addresses, especially at a distance from home, to serve on committees, to assume time-consuming administrative duties and to show visitors around laboratories, clinics and buildings. The active scientific investigator should be at least as inaccessible to the intrusion of casual visitors as the financier or the railway president (20)". These thoughts were echoed in 1958 by Arnold Rich (21), who quoted Daniel Coit Gilman, first president of the Johns Hopkins University, who warned early in the present century against "the danger of losing the elements of repose, the quiet pursuit of knowledge, the friendship of books, the pleasures of conversation and the advantages of solitude." Gilman was quoted again by A. M. Harvey in 1981. These admonitions, while lacking the personal bond and the personal touch, might be described as kinds of mentoring fragments set loose in the literature stream for the edification of any who might come across them.

What have some of the Kober Medalists said more specifically about their mentors, especially of a nature that bears on the impacts of these relationships? In 1955 W. C. Stadie, referring to Van Slyke, said, "It would be impossible for me to describe the education, stimulation and character formation which accrued to me from these years . . ." (22). Richard Shope in 1957 mentioned especially Oscar H. Plant, professor of pharmacology at the University of Iowa Medical School, as well as Theobald Smith and others. He said, "Without the help, example and inspiration of the individuals I have just mentioned, I am certain that the serendipitous scientific career that has led me to this platform would not have been. If I had missed coming under the influence of any single one of them I'm convinced I would not be here today" (23). John Paul, in 1963, reminisced in some detail about his relationship with William George McCallum. He said, "One of the most wonderful things

about McCallum was his encyclopedic knowledge of anything to do with the pathogenesis of disease. . . . he also possessed that remarkable enzymatic quality which transformed information into wisdom, all done with a wistful sense of humor. . . . how fortunate was the younger member of the department who was allowed to accompany him on . . . trips; experiences which left me with a sort of chronic wanderlust”(24). In 1965 Joseph T. Wearn commented on his years with A. N. Richards. After describing the many ways in which Richards facilitated his early work, he said, “Years spent with Richards were among the happiest and most satisfying in my life, for they afforded the rare opportunity for close association at work and at play with a truly great scientist, who strove for the best and was satisfied with nothing less, with imagination akin to that of a master, a wondrous humility of spirit and through it all a sparkling sense of humor. . . . From the early years to the present day, Richards’ friendship has meant more to me than I can find words to express” (25).

Most of us can recognize in such relationships echoes of our own experience. Mentoring clearly has about it some elements of the parent/child dyad; it is characterized in part by our ability to select from the mentor those things that serve central needs in ourselves, elements with which we have important harmonics. In this sense, that is, with relation to the identification of the protege with professional and characterologic aspects of the mentor, the relationship is an intensely personal experience for the younger person. Further, mentoring has intrinsic to it a temporal element; it needs time, sometimes a year or two, sometimes longer; but what it is capable of transmitting cannot be transmitted quickly. The longer the extent, the richer, in general, the experience.

How can we better understand the process? Much of what mentoring offers can be transmitted in explicit fashion: under this rubric come elements of the teacher, advisor and sponsor roles: career counseling, professional socialization, or guidance in clinical or experimental techniques or systems of diagnostic or therapeutic thinking. Much of medical education and residency and fellowship training is heavily characterized by such explicit efforts, which may be likened to secretion on the part of the senior, and perhaps pinocytosis on the part of the student or protege. It is the explicit educational process with which, for the most part, our curriculum committees wrestle, and over which academic turf battles are fought. For the trainee or junior faculty member these explicit elements are of obvious importance, but they describe only incompletely the mentoring dyad.

Some of the most important things that mentors make available to their juniors are not consciously or deliberately displayed, but are implicit: important elements transmitted in this fashion have to do with the exemplar role: with intellectual style, professional priorities, deliberateness, truth telling, and the flavor of interpersonal relationships. Elements of what might be called academic character are also part of the mix: scholarliness, perception of the importance of enjoying learning, thoroughness, respect for the clinical as well as the scientific transaction, and affection for the sick. By this last I mean to include something beyond courtesy and beyond empathy; a warmth that reflects an awareness of our debt to our patients and to the sick generally, even those not under our immediate care. Every patient's problem may be perceived in this sense as a gift: each disorder, each disease, each episode of illness, each opportunity to teach or to wonder gives us a chance to be what we are as physicians, to exercise interest, heart and intellect, to express something of the best of ourselves, to sense the physician's role as a privilege: all of this is in the gift. Some years ago Lewis Thomas (26) warned us about the dangers of hubris in science and, by extension, in medicine. Affection for the sick, in the sense that I offer that term here, is a powerful antidote, eminently worth the seeking and transmitting to the young in medicine.

These implicit processes are perhaps closer than the more explicit to the core of what mentoring relationships have to offer. They are extraordinarily powerful, rather less secretory and more osmotic in nature. They deal with many of the characterologic features subsumed by the term professionalism. It is in the implicit process that the junior learns important lessons concerning attitudes toward the clinical transaction, the validity of clinical data, the opportunities as well as the limitations of science in clinical care, the virtues of clinical and scientific curiosity and their relations to bedside events, and the important set of interventions that McDermott (27) referred to as the "Samaritan functions of the physician." It is in the implicit process, for example, that the protege learns whether it is truly important, in the course of the case presentation, to go to the bedside, or whether such visits are *pro forma*, on the basis that these days the patient is the data and the data are the patient. Such distorted priorities are easy to learn and difficult to unlearn, and the potential negative implications of such experiences for the junior person are easily reinforced by exposure to harried and overworked house staff or colleagues. The image of doctoring at its best, of physicianship if you will, is displayed most powerfully in these implicit processes, which are often only dimly perceived

or even unrecognized, despite their omnipresence and their critical importance in the enculturating process.

In recent years the ambience in which these intensely personal relationships operate has changed radically, as our academic health centers have expanded in size and complexity. Fragmentation of expertise has become the order of the day. Departmental chairs and division chiefs are more harried, confronted with large and diverse cohorts of individuals whose individual research and clinical practice time must be protected while simultaneously the department or division must see to its educational and training responsibilities; funding must be sought continuously, forcing a kind of academic entrepreneurialism and diversion from the priorities Gilman emphasized; our center of gravity has shifted heavily toward science, which has become the *lingua franca* of successful academic centers. The educational functions of the faculty have been relegated, in the words of one distinguished dean, to a parasitic position on the scientific enterprise; and clinicianship, the essence of the medical practice to which nearly all of our graduates go, has progressively lost status in favor of the curious view that a suitable array of technologies amounts more or less to the same thing. Because of this array of pressures it has become extraordinarily difficult for the young person in medicine to form a mentoring relationship that is comprehensive (28), to find in a single person an expressed and balanced mixture of breadth and expertise, of scientific clinicianship and clinical science and concern for educational matters, and perhaps of effective guidance in consideration of an adequate array of possibilities in the expression of his or her career. Indeed, the size and multifaceted nature of our academic centers might lead one to consider, perhaps wistfully, the words of Alfonso The Learned, who, in complaining about the problems of reforming 13th Century Spain, said, "If God in His wisdom had only consulted me before embarking on His creation of the world, I would have suggested something simpler" (29).

The pressures upon us suggest that it would be useful to consider the health and orientation of our mentoring activities and their more deliberate use. The GPEP report (30) made this suggestion some 10 years ago. There is increasing interest in extending mentoring programs to medical students and house staff (7,15,31). In addition, there is reason to believe that we have reacted only slowly to the increasing diversity of our juniors in medicine, as defined, for example, by issues of gender or ethnicity. On a broader scale, and perhaps most urgent because most immediate, it is plain that new roles for physicians are being called for, new practice patterns are emerging, new arrange-

ments among academic health centers and community hospitals, ambulatory care centers and practices of various types are developing, and with all of this there are widespread calls for new career orientations in clinical medicine and in the health and policy sciences that support it.

These shifts are facets of increasing pressure on medicine to accommodate to a reordering of the social priorities of our culture. We hear calls (32) to re-examine the educational paradigm in which we operate, with particular relevance to its acute care, biologically-based orientation, and we are urged to redefine the priorities of internal medicine as part of a syncytium under the rubric of primary care. Increasingly we hear calls to extend the sites of medical education in a variety of ways, although without tight bonding to specific, articulated educational objectives; we hear calls for increased attention to the health of populations (32,33); and we hear calls from both within and without to produce an array of physicians more closely articulated to national need.

Mentoring activities are at issue in these connections because they contribute to the priorities, academic styles and career patterns of future faculty, and in that way to shaping the medicine of the future. Can we approximate what Osler and Cushing had, or the Kober Medalists? No, certainly in any specific sense we cannot, and need not, but the message in these dyads is in the power of the experience, in the persistence of its impact on the individual, and in its replication in the enculturation of those to come. It would seem wise to reflect on the content of the modern mentoring role, of the messages we send, deliberately or not, explicitly or implicitly, positive or negative. Jean Wilson, in his presidential address to the Association of American Physicians (34) in 1993, noted that "the funding crises for biomedical research and the many other problems facing academic medicine are well known to young people, largely because there our dissatisfactions as investigators, rather than our rewards, are all too frequently communicated to our trainees," with "a direct negative effect on the choice of an academic career." The same might be said with regard to faculty engaged primarily in clinical or policy matters. We should consider also the implicit messages transmitted by faculties in the aggregate, that is, by our institutions, and the impact of institutional stances on frames of reference and the development of patterns of ambition in young people. The importance attached to scholarship, respect for colleagues, and academic entrepreneurialism are, for example, displayed as institutional as well as individual characteristics. The pri-

orities they achieve in determining the flavor of the academic center are noted and absorbed by students, trainees and junior faculty.

Mentoring should perhaps be less relentlessly pragmatic and entrepreneurial, more inclusively clinical. The role of mentors in efforts to reinvigorate teaching, especially at the clinical level, should be more fully explored. Refurbishing the clinical transaction as the seminal event in the care of patients is an urgent academic necessity, requiring, in addition to instruction in the requisite techniques, recurrent demonstration of clinical expertise of a high order, demonstration of the potential power of the meticulous and elegantly conducted bedside interaction between physician and patient, and demonstration of respect for clinical data gathered at the bedside, and of affection for the sick. Such elements, some explicit and some implicit, should be joined more clearly to the other priorities we display for the young: the pursuit of scientific productivity and recognition, development of an academic *persona*, and a realistic sense of ambition tied to worthwhile professional goals.

Each generation makes its contribution to the continuing evolution of medical science and practice, through its own activities and through the education and training of those who follow. The pursuit of excellence, as I have said, is to a significant degree a transmissible characteristic. Mentoring has the capacity to imply the crucial nature of broad values in medicine, to link the young to their intellectual and professional heritage, to make the pursuit of excellence an enduring preoccupation of future faculty and of the profession generally. We have perhaps lost something in the interstices of our rapidly advancing scientific and technologic success and the powerful impact of this on the priorities we display for the young in medicine. We must to some extent expand and reinvent what we are about. Mentoring offers a powerful avenue of expression for our efforts to turn out true professionals, to respond to Tinsley Harrison's concern, voiced in his acceptance of the Kober Medal in 1968, with reinfusing a sense of medicine as a dedicated calling (35).

Stephen Hawking, from whom I have in effect plagiarized the title of this talk (36), has predicted that of the two possible destinies of the universe, indefinite expansion or recollapse, we are probably headed for the big crunch rather than endless increase in size. Hawking has said that in this connection he has certain advantages over other prophets of doom, namely that, whatever happens, he doesn't expect to be around to be proved wrong. The seminal difference, of course, between the fate of the universe and medical education and training is

that in connection with the former we are without the prospect of inputs of any kind, whereas in the case of the latter we are very much the architects of what will happen; what's more, the time frame against which this will be played out will not only not be cosmic in scale, but will be such that many of us will in fact be around to see what happens, and to live with it.

#### ACKNOWLEDGMENTS

The author records with gratitude the secretarial help (and patience) of Ms. Carol Barrett-Gonzalez, and the aid of the staff of the Special Collections Library of The New York Academy of Medicine, and especially the counsel and friendship of his mentor, Dr. A. M. Harvey.

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