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THE EDITOR'S CORNER

The Past, Present, and Future Perfect Profession

For the first third of the past century, orthodontics was dominated by one man: Edward H. Angle. Unfortunately, orthodontists' slavish acceptance of Angle's limited diagnostic and treatment-planning regimen hindered the advancement of the profession. Recognition of this in no way detracts from Angle's contributions—notably his clear, simple classification system and the edgewise bracket. Both of these have endured for a century, and that is no mean achievement in any scientific discipline.

Angle's influence held sway until an apostate student of his, Charles Tweed, had enough courage and objectivity to challenge his nonextraction scheme. It was not a tremendous leap of intellectual power. Tweed simply and honestly recognized that when 100% of your patients relapsed, there might be something wrong with the diagnosis and/or treatment planning. Some would say that his treatment overcorrected, but we still need to pay homage to anyone who had enough skill and temerity to successfully challenge a mentor and his minions. I don't think Tweed would have been able to deliver the paper describing his extraction technique had Angle still been alive. Angle's power over the society that bore his name was too immense to permit such hubris from a young upstart. But as Samuelson, the MIT economist, once noted, "Science progresses slowly—funeral by funeral."

About the time Tweed introduced his concept of extractions along with the first rational treatment-planning mechanism, swaged gold bands with soldered brackets and eyelets were being replaced by preformed stainless steel brackets and bands. Orthodontists enjoyed six-month waiting lists, little competition, a thriving economy, and a new TV medium that was reminding a more affluent population that nice smiles made people look better. This has been fondly remembered as the Golden Age of Orthodontics. But it wasn't golden for everyone. Patients had to endure the agony of individualized band fabrication, which usually took several hours to

complete. The bands were driven into place with a mallet or a medieval instrument known as an Eby band driver. Forces were delivered by large and stiff stainless steel wires that punished the teeth for several weeks after adjustments. And the average working man labored 432 hours to pay for orthodontic treatment—compared to only 271 hours today. Looking back, I am astonished that anyone put up with this kind of dental abuse, but people did. Orthodontists prospered as never before and gathered new stature within their communities and among their peers.

With the rapidly increasing demand for orthodontists' services, the preceptor training programs then in existence were too small and too uneven to produce the quantity or quality of orthodontists this nation needed. Soon our dental colleges began to enlarge existing orthodontic programs and to develop new ones. Almost simultaneously, there were technological and legal innovations that allowed even more rapid growth in orthodontic practices. One such innovation was the development and adaptation of the preadjusted appliance, soon followed by nickel titanium wires. Neither of these breakthroughs would have had much impact, however, had it not been for the political pressure exerted by dentists and orthodontists to liberalize state dental practice acts and allow more duties to be performed by assistants. It was now possible for orthodontists to expand their services and substantially enlarge their practices while keeping fees reasonable and quality high.

Dental schools soon responded to the federal government's request to produce more dentists by almost doubling their numbers of graduates. By the mid-'70s and early '80s, the profession faced new demographic challenges, as declining birth rates reduced patient numbers even while the number of dentists was going up. Water fluoridation, dental sealants, and dietary control further reduced demands for traditional dental services. With an overcapacity of practitioners, dentists now faced economic problems they had never seen. Before this time, I had never heard of a dentist's declaring bankruptcy; suddenly I personally knew several who had done so because of indebtedness and scarcity of patients.

It was during this period that preadjusted appliances and direct bonding became popular, greatly simplifying the placement of orthodontic appliances—for both patient and orthodontist. These new technical advancements also appealed to underutilized and economically threatened general dentists, many of whom were convinced that orthodontic therapy was now much simpler than ever and within the grasp of anyone who would take the time to enroll in two or three weekend courses.

Of course, anyone who has practiced orthodontics exclusively for any period of time realizes that such a conclusion is patently absurd. But the misconception developed, and it still endures to some extent in dentistry today. No matter how sophisticated orthodontic therapy becomes—and there is currently reason to believe that it will soon become remarkably refined—there will always be the necessity of correct diagnosis and reasonable treatment planning.

The Importance of Diagnosis

In Angle's day diagnosis was relatively unimportant, because everyone received the same nonextraction treatment with the same expansion appliance. The marvel of it all is that the collection of orthodontic records ever became important. A few months ago I ran into an orthodontist who boasted that since he had initiated a different treatment regimen, he was treating 98% of his patients nonextraction. I had to bite my tongue not to ask him if he still took records, because with that kind of diagnostic certainty, records are clearly redundant. You should not waste your patient's time and money taking impressions and x-rays or doing treatment simulations if all your treatment plans are essentially the same. Obviously, this one-size-fits-all treatment planning didn't benefit patients much a hundred years ago, and it doesn't now in our own age. But such simplicity continues to hold an enormous appeal for many orthodontists.

No matter how many spectacular advances

in orthodontic therapy are made, it will benefit our patients minimally if there is not a concomitant improvement in our diagnostic and prognostic knowledge. I see this as the No. 1 imperative for our profession. Any new therapy unaccompanied by equally sophisticated diagnostic knowledge should be viewed suspiciously.

External Marketing and Patient Growth

Within the past decade, patient demand has been fueled by the aggressive and apparently successful external marketing of management service organizations. Rather than relying on orthodontists' traditional referral base of general dentists, they have taken their message directly to the public via radio and TV, much like the major pharmaceutical companies who have recently directed their pitches for prescription drugs to the same audience in the same way. Orthodontic pessimists have viewed this new marketing approach and have again announced the demise of the specialty. But in a recent study, Dr. Beverly Bunn found that traditional orthodontic practices in territories where MSOs were established[1]:

- Experienced significant practice growth.
- Established improved management and internal marketing systems.
- Did not reduce their case fees.
- Restructured their payment schedules.
- Began to use practice management consultants.

Almost all of the common assumptions regarding MSOs were found to be untrue. The advent of MSO practices has actually been accompanied by higher fees, more patient examinations, and more case starts for the traditional orthodontists. Apparently, the overt external marketing of the MSOs raises the orthodontic consciousness of the general public, and the entire profession profits from it. Dr. Bunn concluded that there has never been a better time to be an orthodontist—to wit, a new Golden Age of Orthodontics.

In addressing this topic, I can speak from personal experience. I practiced in a traditional fee-for-service orthodontic practice for about 30 years, but for the last three years in my practice, I was associated with a management service organization. What I saw was a real education. To begin with, I found that MSOs created an entirely new category of patients. Many of them had previously been excluded from orthodontic treatment by the high initial payments. They couldn't handle an $800 or $1,200 down payment, but they could pay $90-120 per month without a down payment. My fees did not decrease, and in some cases actually increased.

Most of these patients did not have a general dentist and, in fact, had never been to a dentist. The first year with the MSO, I referred more than 125 families to general dentists. This reversed the usual referral process, as the GPs began to rely on me for patients, and it was a great relief to know that I was no longer reliant on them for my professional success. I still wanted their good will. I still enjoyed working with them and cooperating with them in therapies. I still encouraged them to refer their patients to me. But for the first time as an orthodontist, I no longer felt subservient to them, and for me, that was one of the greatest benefits I received. The general dentists in my area became better allies because they benefitted directly from my referrals, and it cost them nothing.

For me, external marketing brought in far more patients in a short time than internal marketing ever did. My practice, which was not small to begin with, doubled in size in one year. Now, I was not exactly an amateur at internal marketing; my wife and I started the aggressive internal marketing strategies, with T-shirts, caps, and motivational rewards, that are so popular today. I was one of the first to use newsletters. But we need to remember that internal marketing has costs just as external marketing does, and that internal marketing also has definite limits. I found that the external variety was far more effective and cost little more than what I had been spending. MSOs have implemented advertising techniques that successfully compete with the companies that sell consumer goods such as automobiles, television sets, and home furnish-

ings. These are our true competitors—not one another. The MSOs have made orthodontic services seem as affordable as a washer and dryer, and the public has responded enthusiastically. So it may be time to rethink our preconceived notions about marketing.

Technological and Structural Changes

The latest challenge to the profession comes from further technological advances. Three-dimensional scanning and virtual models promise to eliminate the need for plaster models, with their expense, storage requirements, and inconvenience. This technology also allows at least minor repositioning of teeth through the fabrication of sequential, positioner-like retainers. We also now have the ability to use 3D scanning and wire-bending robots to make truly customized and individualized appliances. Rather than depending on appliances that are preadjusted to "normal" values, we will be able to bend wires that can position teeth where they should be, even correcting for our misplacement of brackets. The same system provides unprecedented feedback that lets us compare where our patients are with where they should be.

Although we are again hearing concerns from some Cassandras about orthodontists' role being eclipsed by technology, I don't think that will happen. I do see radical change ahead, however: a reemphasis on diagnosis, treatment simulation, and treatment planning. I expect orthodontists to renew their diagnostic skills and spend more time determining more predictable courses of action for their patients. As in the past, when orthodontists had to supplement their basic skills by becoming photographers, radiologists, and metallurgists, New Age orthodontists will have to become computer specialists to practice effectively and profitably.

Again, I expect the *relative* cost of our services to drop due to the increased efficiency and productivity afforded by these new products. More people will be able to afford our services, and more of them will choose to have orthodontic treatment. Therapy will become more predictable, faster, and less traumatic. Practices will grow, more jobs will be created within our offices, and orthodontists will prosper more than ever. Such progress will not occur without some dislocations and may even necessitate what the economist Joseph Schumpeter called "creative destruction", but the overall effect will be healthy for the profession and attractive and desirable to the public.

This might be an appropriate time to recall Peter Drucker's four easily visible and near-certain indicators of impending change in an industry[2]:

- Rapid growth.
- Complacency.
- Convergence of technologies.
- Rapid structural change in the way business is done.

All of these conditions are in place right now. Orthodontics is growing rapidly again, and you can almost sense the relieved complacency of practitioners. What may not be quite so obvious is the convergence of technologies. As 3D imaging and scanning become more sophisticated and user-friendly, there will be more efforts to incorporate these techniques into orthodontics. The Internet is bound to have an effect, but at this point its impact is still unclear. Based on what we have seen so far, I expect consumers to begin to choose orthodontists on the basis of the impressions they receive from web pages. In the future, they will probably want to see examples of treated patients with malocclusions similar to theirs. They will want to compare durations of treatment, fees, and payment schedules. So far the Internet has had a depressing effect on the prices of goods and services, and it would be naive to think orthodontists will escape this consequence. Nevertheless, a well-designed web page may turn out to be the most effective marketing tool yet devised.

Whether the first attempts to integrate other technologies into orthodontics are successful is irrelevant. If scientists and entrepreneurs are able to see beyond ordinary concepts and grasp the potential of new technologies, that is enough to guarantee their eventual application.

The fourth requisite of structural change is already fairly well advanced, and much of it is due to simple demographics. More and more women are entering dentistry and orthodontics. Women have brought a new sensitivity and responsiveness to the profession, and we are stronger and better for their presence. According to the 1999 JCO Orthodontic Practice Study, however, women seem to work fewer hours and have smaller practices than their male counterparts.[3] Women already make up 25% of the enrollment in orthodontic programs, and that percentage is bound to increase. To meet the public's increased demand for orthodontic services, it seems likely that we will need to admit more students to these programs. As it stands now, 5,000 orthodontists will retire within the next 15 years, but our schools expect to produce only 3,000 new orthodontists.

In 1998, the median number of case starts in solo orthodontic practices jumped to 200 per year—a 33% increase over the past 10 years.[3] The average number of starts could move considerably higher within the next decade, but this increased patient load will certainly require increased efficiency and productivity. Trying to run future orthodontic practices like the comfortable, quaint cottage industries of the past will not work, or at least, will not work well—for orthodontists or patients. Clearly, orthodontists will need more capital; more professional staff members; larger, more comfortable, and more efficient facilities; and far better practice management techniques. It now requires a minimum $500,000 capital investment to develop a competitive office. Without that kind of investment, new orthodontists will operate from a distinct disadvantage compared to established practices.

In 1999, about 10% of U.S. orthodontists belonged to MSOs.[3] There is strong evidence that this percentage will continue to grow. Students who graduate with educational debts of $200,000 and families to raise have great need of immediate earnings, and these companies are offering them substantial sums to sign contracts, along with interest-free loans and sufficient capital to provide nicely equipped and attractive offices. Small wonder that MSOs are succeeding in signing up recent graduates as well as older orthodontists who need transition assistance.

There are other demographic changes that will greatly affect orthodontists. The number of matriculating and graduating dentists will continue to diminish over the next two decades, so there will be fewer general dentists to refer. Simultaneously, as dental sealants, fluoride therapies, better diets, and improved oral hygiene have more effect, the restorative and periodontal needs of our national population will also diminish. Current studies suggest that the demand for traditional dental services will continue to fall by 50% every 10 years; we see this reflected in declining expenditures on dental services as a percentage of Gross Domestic Product. It appears from these figures that we will have an excess capacity for dental patients in this country—and that does not even consider the increased productivity that will almost inevitably occur from further technological improvements. It is conceivable that in the future, one dentist will be able to serve the restorative needs of 6,000 or more people, rather than the 2,000 now served. Therefore, the shift toward diagnostic, preventive, and esthetic dental services will continue. We would be naive to expect underutilized dentists not to find the growing field of orthodontics attractive, and that may bring back the competitive tension of the '70s and '80s.

Dental health maintenance organizations (the HMOs and PPOs) present another structural challenge that looms in our future. Today, only 50% of dental payments come from insurance, compared to 60-80% of medical payments. Medical costs have increased so much that the HMOs and PPOs have designated general practitioners as gatekeepers whose compensation is based on their ability to avoid the services of specialists and use a minimum of lab tests. We are just beginning to see some of these changes in dentistry. For example, as more insurance policies deny orthognathic surgeries, oral surgeons are starting to do cosmetic procedures that were previously reserved for plastic surgeons.

A Call to Action

Right now, some are telling new orthodontic graduates that they are entering a "slam-dunk" profession. More orthodontists are retiring than are being replaced. Fees are going up. More patients are available. In effect, the establishment is telling young graduates that they can stay with old paradigms and succeed. But this guarantees that the public will eventually be underserved, and that there will be a gap between supply and demand for orthodontic services. If orthodontists create this gap by limiting the number of graduates, setting unrealistic fees, and maintaining unaffordable payment plans for patients, I guarantee that others who are less occupied and less satisfied with the diminishing demands for traditional dental services will fill it.

Orthodontists need to control their own destiny by controlling the demand for and supply of their services. I happen to think they can do this best by appealing to the consumer directly. I have seen this concept work. It would take a minimum investment of $250 million per year, however, and it is difficult to see how organized orthodontics can or will find these funds. Alternative strategies might be to encourage the MSOs in their external marketing or to persuade the larger orthodontic manufacturers to devote sizable portions of their marketing budgets to making direct appeals to the public.

Without a large influx of immigrants or an increase in the percentage of adult patients, American orthodontists face a fairly static population of children. We already know how many 12-year-olds there will be in 2012, because those people are now living. The number is only marginally larger than the current number of 12-year-olds. There may be a variety of ways to approach this problem, but it seems to me that the best remedy would be to somehow create a strong desire among the millions of unserved and underserved patients to seek the orthodontic care they are now avoiding. We know that external marketing can reach this group of people and encourage them to become orthodontic patients. This, in turn, offers us the opportunity to refer these patients for the dental services they need.

Of all the dental disciplines, only orthodontics has the appeal to strengthen all of dentistry by capitalizing on the public's desire for great smiles. Seizing this unique opportunity could be difficult and costly, but the most expensive strategy could well be to remain with the same paradigms we have used in the past. As Alvin Toffler said recently, "If you don't have a strategy, you will be permanently reactive and part of somebody else's strategy." That doesn't appeal to me, and I hope it doesn't appeal to dentistry's leaders.

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This article is adapted from a lecture given at the AAO annual meeting, Chicago, 2000.

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