



An interview with

Jimmy C. Boley

- » D.D.S. Baylor University College of Dentistry.
- » M.S. University of Missouri-Kansas City.
- » Diplomate of the American Board of Orthodontics.
- » Private practice 1965–2013.
- » Immediate Past president of The Charles H. Tweed International Foundation for Orthodontic Research.
- » Past president of The Edward H. Angle Society of Orthodontists.
- » The O. B. Vaughan Special Recognition Award from the American Board of Orthodontics, 2013.
- » The Martin Dewey Award from the Southwestern Society, 2010.
- » Award of Merit recipient from the Orthodontic Education Research Foundation, 2005.
- » As researcher, obtained a large collection of post-retention patients that has provided case material for over 20 masters theses from numerous orthodontic departments.
- » The Edward H. Angle Research Award for the best article published in *The Angle Orthodontist* during 1997–1999.

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I could say that the feeling of editing this interview is astonishing. I met Dr. Jim Boley when I was only 10 years old. At that time, I lived in Dallas with my family and I remember very well the good friendship he had with my parents, which has been extended to us to this date. Dr. Boley, besides practicing and teaching an admirable orthodontics for over five decades, had the privilege of lecturing and spreading all his knowledge in more than twelve countries over forty years. He is known all over the world as one of the orthodontists who have done and still do more for our specialty. He was diplomate by the American Board of Orthodontics in 1971 and still works as an examiner for the Board. He was the President of Edward H. Angle Society of Orthodontists and recently exited from his position as President of the Charles H. Tweed International Foundation for Orthodontic Research, where he has been teaching since 1971. He retired three years ago from his job in his private office, where he produced clinical material for more than 20 theses in several departments of orthodontics, as well as scientific papers. He still teaches and supervises Baylor College University students in Dallas, where he has been honored many times, which includes being awarded a Robert E. Gaylord Award of excellence in orthodontics teaching, and a Thomas M. Matthews prize, for having contributed with the department at Baylor and with his former pupils. Those who know him also know his hobbies are playing golf, exercising, and walking his 3 dogs, as well as his great love for his two daughters, Brenda and Betsy, and four grandchildren. He has been married for over twenty years with our dear Sabrina. At the moments when orthodontics is not all consuming, he makes the most of his time off spending his weekends at his Texas ranch with his family. Today, after 20 years as friends, I am deeply grateful for the chance of talking and questioning him about orthodontics, and for being aware of his precious scientific contribution, and for what he represents in the history of orthodontics.

Eu poderia dizer que é inexplicável a sensação de coordenar esta entrevista, pois conheci o Dr. Jim Boley quando tinha apenas 10 anos, na época em que eu e minha família moramos em Dallas. Lembro-me bem da grande amizade que ele tinha com meus pais, amizade que se estende a nós até hoje. O Dr. Boley, além de praticar e ensinar uma Ortodontia admirável há mais de cinco décadas, teve o privilégio de palear e distribuir todo seu conhecimento em mais de doze países, por mais de quarenta anos. Ele é conhecido por todo o mundo como um dos ortodontistas que mais fez e faz pela nossa especialidade. Ele foi diplomado pelo *American Board of Orthodontics* em 1971 e atua, até hoje, como examinador do *board*. Foi presidente da *The Edward H. Angle Society of Orthodontists* e é o atual presidente da *Charles H. Tweed International Foundation for Orthodontic Research*, fundação onde leciona desde 1971. Há 3 anos, Dr. Boley se aposentou de seu consultório particular, onde produziu material clínico para mais de 20 teses, em inúmeros departamentos de Ortodontia, além de vários artigos científicos. Ele continua dando aulas e orientando os alunos da *Baylor College of Dentistry*, em Dallas, onde foi reconhecido com várias homenagens, entre elas o *Robert E. Gaylord Award* de excelência no ensino da Ortodontia, e o Prêmio Thomas M. Matthews, por sua contribuição ao Departamento de Ortodontia da Baylor e aos seus ex-alunos. Quem o conhece sabe que seu *hobby* é jogar *golf*, se exercitar e passear com seus três cachorros. Ele é casado há mais de trinta anos com sua esposa Sabrina e tem uma paixão pelas suas filhas, Brenda e Betsy, e pelos seus quatro netos. Nos momentos em que a Ortodontia não está “consumindo-o”, ele aproveita seu tempo para passar fins de semana no seu rancho texano, com a sua família. Hoje, após vinte anos de amizade, agradeço imensamente pela oportunidade de conversar e questioná-lo, de perto, sobre a Ortodontia, além de poder ter a consciência de sua valiosa contribuição científica e o que ele representa dentro da história da nossa Ortodontia.

Isabela Parsekian Martins – interview coordinator

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Dear Dr. Boley, it has been a privilege to know you and I feel blessed to have seen your work at Baylor with the residents. Would you care to explain to us your trajectory in orthodontics (both at your private practice and in teaching)?
(Renato Parsekian Martins)

I have been in orthodontics for over 50 years and I am totally convinced that aligning the anterior teeth is not brain surgery. The most critical parts are: where the teeth need to be aligned for best facial esthetics, healthy periodontium, function and stability; and treating patients as though they were your own child; i.e., what is best for the patient even if it reduces your take-home pay somewhat.

My strategy, philosophy and mechanics are basically Tweed. I took the Tweed Course in April of 1966, my second year in practice. Dr. Tweed was still director of the course and Dr. Levern Merrifield was co-director. The other instructors were big names in orthodontics and dentistry.

Dr. Tweed was probably at the height of his popularity and I totally swallowed the philosophy of trying to achieve the best in facial esthetics, periodontal health, function and stability. Dr. Tweed emphasized achieving good faces: “*Balance and harmony of facial lines*”. Our motto today is faces first! Dr. Tweed stressed a good visualization of the face and what is needed to help it.

He gave us a guide to help achieve these four basic goals. In most cases, you should position the lower incisor at $90 \pm 5^\circ$ to the mandibular plane (IMPA). Later, he refined this IMPA measurement with more emphasis on FMIA (Frankfort Mandibular Incisor Angle), which takes into account the normal variation of the IMPA to various FMAs, with the goal around 65° to 68° , depending on steepness of the Frankfort Mandibular Plane (FMA); thus, the third angle in his Tweed Triangle (FMA, IMPA, FMIA). Which is a simple guideline for patients with normal muscle tone that have or can get to an ANB angle of 5° or less. For those with 6° or more, you cannot use this Triangle.

Anchorage preparation in the lower arch and directional forces are designed to limit extrusion of the molar teeth; thus, encouraging a counter-clockwise rotation of the mandible is the second major factor in our philosophy and mechanics. The high pull J-hook headgear is essential in countering the adverse effects of Class II elastics and to put restraint on the

maxilla in an upward and backward direction. Minimal expansion of the lower canines and maintaining the lower arch close to its’ original form is also a key part of our philosophy.

Sounds like I am giving you a Tweed course, but believe me, there is much more, and I will give much briefer answers to the next questions.

Do you prefer 0.018-in or 0.022-in slots?
(Wick Alexander and Renato Parsekian Martins)

I have only used the 0.022 slot and therefore, prefer it. I think leveling with large steel is better than with less stiff wires (0.019 x 0.026-in) The 0.0215 x 0.025-in stainless steel arch wires help to maintain arch form and resist the pull of the Class II elastics.

Do you use pre-torqued brackets?
(Wick Alexander)

I currently use prescription brackets. For the first 15 years, I used 0-0 (standard edgewise brackets) only and full bands, because that was all we had. When people whom I respected, like Terry Root (Terrell L. Root, former professor at the *University of Southern California*, USA), Wick Alexander, and Tom Creekmore, came out with their version of the appliance with first, second and third order bends placed into the brackets, I then decided to treat a few patients with this new approach.

It seemed reasonable that I could use those brackets and then bend in the second orders to tip back my molars into anchorage position. Eventually, I decided to try Root’s second orders in the brackets. I remained steadfast in my Tweed philosophy and mechanics, while incorporating some of this new technology. I think it saved some bending, but I still had to do a lot of bends in the wire.

I have seen during my time at Baylor, that you use a “pick and choose” bracket prescription set, i.e. 0.022-in Alexander brackets on your posteriors and different brackets on your incisors. Can you explain how was your bracket set up and why did you do it?
(Renato Parsekian Martins)

I tried various brackets for a period of time while I was experimenting this new approach. I ended up with basically a 0.022-in version of Wick Alexander’s brackets in the premolars (single brackets with wings for ro-

tation control), second orders in the lower molars and second premolars similar to Terry Root (i.e., 15° in the second molars, 6° in the first molars and 6° in the second premolars), and negative torque of 5° in the mandibular centrals and laterals. I also used Creekmore's Mini-Uni-Twins on the upper anteriors. The reason I preferred the narrow single bracket in the premolars was that it gave me more space to put or adjust bends in this area and could get to larger steel wires faster.

I thought the 0.022-in appliance would make leveling, closing space easier, and my anchorage prepared lower arch more resistant to my strong Class II elastics, which I used extensively, for many months (12 oz) after good anchorage preparation. I also used a high pull "J" hook headgear to the upper lateral area with "up and down" elastics to offset the negative effect of Class II elastics.

Do you prefer extraction or non-extraction treatment? (Wick Alexander)

My extraction decision is based on the problem. I do not think I can resolve more than 4mm of a Total Space Discrepancy without violating some of my guidelines. I base my decision, primarily, on a Total Space Analysis. Precisely, how much space you are going to need to align the teeth properly on the mandibular arch versus how much space is available. This analysis is based on the desirability of minimal expansion in the mandibular arch, which is so well documented in orthodontic literature there should be little reasonable doubt. It consists of first measuring the width of the mandibular teeth anterior to the first molar and comparing it to the arch perimeter. The results give you the tooth size to arch length discrepancy.

Now, you arrive at your desirable position of the mandibular incisor for best facial balance. This decision is based on a good clinical evaluation of the face. Next is to use one or more guides for helping with the decision, like Tweed's Diagnostic Triangle, Steiner Analysis and positioning of the lower incisors to the APO line. I personally use all three and based on my assessment of profile and lip strain, I choose a position that makes most sense to me.

If you decide to leave the mandibular incisor in its' pretreatment position, it would not require any arch length change, but if you decide to upright and retract the incisors, you must include this amount of

space that will be required as your second consideration in the Total Space Analysis.

The amount of space that will be required to level the curve of Spee is the third consideration. The formula we were taught to determine the space required to level was equal to the average depth of the curve of Spee on each side of the arch. If this average depth is 2mm, we put a negative 2mm in our analysis. The shortage or excess of space determined by the analysis is paramount in determining if teeth need to be extracted and if so, which teeth.

If the case is a Class II, you have to include the amount of space consumed by the lower molar as it comes mesially to correct the problem.

There are other concerns such as age, etc, but the Total Space Analysis is paramount.

What are the consequences of routine lower arch expansion? (Larry P. Tadlock)

The consequences of lower arch alteration in many instances are well documented. The literature strongly suggests that altered initial arch forms tend to return to their original shape, and the more expansion in the canines and molars regions, the more the relapse. The collapse of these expanded arches and/or collapsing back of flared incisors leads to crowding in the mandibular incisors, which is the major cause for dissatisfaction in patients, long term.

Did you extract less in your latter years as clinician compared to your early years? Why? (Isabela Parsekian Martins)

I extract less today, but, not to a large degree. In the beginning, 1965, if there was much crowding or protrusion, I just automatically extracted four first premolars. Later, I began carefully doing a Total Space Analysis and took out more second premolars in lieu of first ones. A major factor was a more precise and thorough diagnosis.

There are three common characteristics of Long Term Stability studies which I believe to be essential. They are: 1) Minimal expansion of mandibular canines area; 2) Maintaining mandibular arch form, and 3) Maintaining or uprighting and retracting the mandibular incisors. In patients with minimal crowding of the mandibular incisors, if you choose to advance them it should not be over 2° or 1.5 mm.

Bonding reduced the amount of band material, which made the crowding look much worse after getting all of the bands on, and sometimes rashly and erroneously made me change my treatment plan from non extraction to extraction, because it looked so crowded. Bonding also enables us to do slight interproximal reduction when indicated.

Do you believe in long term stability?
(Wick Alexander)

I certainly believe in the long term clinically acceptable stability; i.e. Little's Irregularity Index of 3.5 mm or less. Much of the literature supports that 70+% of our patients will have clinically satisfactory mandibular alignment many years post-retention, if they incorporate what I call the three common characteristics enumerated in my previous answer.

Many of your cases have been used in studies of long term stability. Why do you believe your cases seem to be more stable than those from some other studies? (Larry P. Tadlock)

I don't know how many of my cases have been used in theses, but there have been numerous residents who have studied them over the years. All of the long term studies found during post-retention a Little's Irregularity Index of approximately 2.5 mm. The largest single sample was a long term study with over 100 patients, conducted by Dr. Scott Franklin. My entire sample consists of approximately 230 patients from 5 to 30+ years after all retention has been removed. The Baylor Orthodontics Department is currently digitally archiving all of my cases and will do one or two more samples, which will result in a very large sample for them and others to use in perpetuity.

How important for stability do you think the use of a lower 3 x 3 bonded retainer is? Do you advise your patients to use them indefinitely?
(Renato Parsekian Martins)

For retention, I primarily used banded lower canine to canine for at least 3 years, till the third molars came in or were removed and until the patient was through growing—the “through growing”, I believe, is the most critical part, according to the literature. Once bonding came into the picture, I used bonds instead of bands. I do not bond to all the lower incisor, and tell the patient

to wear the 3x3 to their grave. This is just to cover my behind in case they are among the 20% that got more than minimal crowding later in life.

What role should research play in the everyday practice life of an orthodontist?
(Larry P. Tadlock)

I believe well-structured research should be the foundation of everyday practice. I like Lysle Johnston's declaration “*There are a lot of things we know that we pretend not to know*” — especially, the most relevant subjects such as facial esthetics, healthy periodontium, function, and long term stability have been exhaustively studied and have come to specific conclusions that are published. As doctors, we are morally required to give our patients the best results of which we are capable. The question is, will we take a little more time and effort to reach these goals for them, when required, even if it may affect our profit?

Do you believe outcome standards of care in orthodontics are necessary, and if so, why hasn't the profession established such standards?
(Larry P. Tadlock)

I believe outcome standards are essential if we are dedicated to doing our best for our patients and to continue orthodontics as a specialty.

As I said earlier, there is an abundance of sound research that could serve as a basis for current standards. If further studies shed a new light on some standards, they can be revised. I believe the American Board of Orthodontics is highly qualified for this task and seem to me, to be the appropriate party. There are times, for a myriad of reasons, we all fail to get the results we wanted and provisions for those times should be made.

I think that the resistance to standards in the past could have been based on lack of definitive research (which is not the case today), the understandable fear of some outside entity telling the individual practitioner how to run their practice, the fear of litigation and that complying to the standards could decrease your patient load. All these concerns probably have some validity, but in my opinion they are not sufficient to keep us from having a reasonable standard of care. If we police ourselves and protect the public from the occasional “bad apples” that exist in every barrel, then the public will continue to hold us in high esteem.

You taught the Tweed technique for a long time. Do you think it is important for young orthodontists to take the Tweed Foundation course? (Isabela Parsekian Martins)

I definitely believe every resident and post-residency orthodontist should take the Tweed Foundation course. Where else will they spend 10 days concentrating on technical skills, on evidenced based diagnosis, and treatment mechanics that have stood the test of time, taught by “true” believers?

We know that the vast majority of practitioners use all types of pre-angulated, pre-torqued appliances, but having the ability to quickly and precisely bend the archwire when needed can be very beneficial.

I explained fairly thoroughly in my previous answers how we diagnose in order to decide whether or not to extract permanent teeth and, if so, which ones. A major part of the course is learning how to determine where to put the mandibular incisors for best faces and controlling molar eruption, thus, resulting in the counter-clockwise mandible rotation so as to improve the face. The major part of our mechanics are anchorage preparation in the mandibular posterior teeth and directional forces, of which the high pull “J” hook headgear is an integral part. I encourage the reading of the fifth edition of *Orthodontics Current Principles and Techniques*, by Graber; Chapter 15: ‘Standard Edgewise: Tweed-Merrifield Philosophy’, by Vaden, Klontz and Dale. This chapter does an excellent job of telling our story with great photos and explanation of mechanics and case reports. As in Graber’s second edition’s preface to the Tweed-Merrifield chapter: “*These principle and techniques have been exhaustively tested, with thousands of patients... Knowledge acquired from this chapter serves as the basis for all subsequent chapters.*”

The Fall 2016 course was the 121st course, and the courses are comprised of people from all over the world, with a lot of universities from the U.S. sending their residents.

The course directors —Dr. Tweed, Merrifield, Klontz and Vaden— have been recipients of the Albert H. Ketchum Award. For you in Brazil that are not familiar with this award in the USA, let me say it is probably the most prestigious award given, thus symbolizing the respect the specialty has for the course leadership.

Who has been your greatest role model in orthodontics? (Isabela Parsekian Martins)

That one is easy. While there have been many, the greatest was Dr. Charles H. Tweed. He was director of the course when I took it in 1966. He taught me a sound reliable way to diagnose and treat my patients. But just as important and probably MORE so, he inspired me to do my best for every patient. He came to our Central Section and National Tweed Meeting four times before his passing in 1970. The main thing I remember taking away from the meetings was always, that, “I was going to do a better job”. He never talked about making more money, rather that, highlighted that we should take care of our patients to the best of our ability.

Do you have a message regarding clinical practice to the young orthodontist out there? (Isabela Parsekian Martins)

It may be difficult to get started, but I think you will be much happier and fulfilled if you have your own private practice. You don’t have a boss to answer to; you call your own shots. Start saving while you are still young for your retirement, you will get there all too soon. Keep a few pro-bono cases going all of the time, ask teachers for deserving kids. I used to call them Scholarship cases. Don’t make screwy and risky investments. Most of all, take the best care of your patients, like you are their only shot at looking great and as if they were your own children. If there is some honest misunderstanding about finances, give them a break. If you do this you will have the greatest reward of all, being able to look in the mirror and have the highest level of respect for the person looking back. Well, that was my little sermon I had not planned on giving and I hope none of you needed.

Larry P. Tadlock

- » Graduated from Baylor College of Dentistry, 1984.
- » Masters in Biomedical Sciences at the University of Texas Health Science Center – Houston, 1988.
- » Private practice of orthodontics since June 1988.
- » Program Director, Department of Orthodontics at Texas A&M University Baylor College of Dentistry.
- » Director and Secretary-Treasurer of the American Board of Orthodontics.
- » Recipient of many awards, including the Martin Dewey Award from the Southwestern Society of Orthodontists in 2016; Yellen-Shoverling Award from the University of Texas Orthodontic Alumni in 2009, and the Shepard Award of Distinguished Service from the American Board of Orthodontics in 2008.

Wick Alexander, DDS, MS

- » Clinician in Orthodontics since 1964.
- » Master degree by the University of Texas.
- » Clinical Professor at the Baylor College of Dentistry since 1965 and also at the University of Texas and New York University.
- » Creator of the Discipline of Alexander and Mini-Wick brackets and Alexander Signature Line.
- » Reviewer of several international journals.
- » Lectured extensively around the USA and over other 62 countries, including Brazil.
- » Past General-Diretor of Angle Society.

Renato Parsekian Martins

- » Clinician in Orthodontics since 2001.
- » Master, PhD and Post-doc in Orthodontics, Dental School of Araraquara – UNESP.
- » Post-doc in Orthodontic Department, Baylor College of Dentistry.
- » Adjunct Professor of the Graduate Program in Dental Sciences (Orthodontics), Faculdade de Odontologia de Araraquara, Universidade Estadual Paulista (UNESP).
- » Associate Editor of the journal *Revista Clínica de Ortodontia Dental Press*.
- » Author of the column “Biomecânica” of the journal *Revista Clínica de Ortodontia Dental Press*.

Isabela Parsekian Martins

- » Clinician in Orthodontics since 2008.
- » Master in Orthodontics, Faculdade de Odontologia de Araraquara, Universidade Estadual Paulista (UNESP).
- » PhD Candidate, Graduate Program in Dental Sciences (Orthodontics), Faculdade de Odontologia de Araraquara, Universidade Estadual Paulista (UNESP).
- » Professor of the Certification Course in Orthodontics, Faculdade de Odontologia de Araraquara, Universidade Estadual Paulista (UNESP).

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