

Comments by J. Vaden about the Charles H. Tweed Interviews

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In 1967–1968, a three-part interview of Charles H. Tweed by Sydney Brandt appeared in the new *Journal of Practical Orthodontics*. (today freely available online at <https://www.jco-online.com/archive/1967/12/142/>)

G. Perrier d'Arc partially translates this interview into three articles in the newly published *DFO Journal*.

At the 31st Biennial Meeting of the Charles H. Tweed International Foundation for Orthodontic Research and Education in Dallas, Mireille Guibert and Robert Garcia, both members of the Tweed Foundation and instructors of the *Tweed Study Course*, approached Jim Vaden, Current Executive Director of the Foundation and Co-Director of the course.

Jim Vaden agreed to comment on these questions on the basis of the Charles Tweed interviews: How have the philosophies and techniques of Tweed changed 50 years after the interviews? What is the role of the Tweed Foundation?

Dr. Brandt asked Charles Tweed about the Foundation and its formation. Dr. Tweed explained the genesis of the Charles H. Tweed Foundation.

Fast-forward approximately 50 years. The Foundation today is made up of approximately 600 active members who live in approximately 35 countries throughout the world. The requirement for membership is

that the person completes the Tweed Study Course. Fellowship in the Foundation is gained by presenting clinical material to the Examination Committee at the Foundation's biennial (every two years) meetings. The scientific program for this meeting is presented, for the most part, by members of the Charles Tweed Foundation. A highlight of each biennial meeting is the camaraderie

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that is enjoyed by all members who attend and the fact that younger members are asked to present case reports and other scientific material. This trademark of each meeting gives the younger orthodontist an opportunity to present material before a world wide audience. The Foundation is governed by a president, a president-elect and a board of directors. The president at the present time is Jean Comard, Perpignan, France. President-elect is Jack Mann, Dallas, Texas.

A hallmark of Tweed Foundation meetings is that all members who attend bring pre and posttreatment records of at least three patients whose orthodontic treatment has been recently completed. This tradition, started by Charles Tweed, continues. The Foundation has a very minimal dues structure which is made possible because the Foundation has a significant endowment, the monies of which were raised by Foundation members. The mission of the Charles H. Tweed International Foundation for Orthodontic Research is to improve the quality of orthodontic care received by patients around the world and to espouse the principles and concepts of the late Charles Tweed – the same mission that the founders of the Foundation espoused.

Dr. Brandt asked Dr. Tweed about the Tweed Study Courses.

In 1967, three Courses were given every two years. In today's world, three Courses are given every year. These Courses generally have between 110 and 120 students in each respective Course. The April and September Courses have many American graduate students in attendance. At the present

time, approximately 30 U.S. orthodontic graduate programs send their students to the Tweed Study Course. The June Course, known as the "international Course," is generally attended by graduate students from schools in China, Japan, Italy, France, Serbia, Romania, etc. etc. There are, however, several American graduate programs that send their students in June because it works out with their academic calendars to do so. The Courses are always taught by approximately 15 highly qualified instructors from around the world. During Tweed's day, the Course was primarily American – attended by Americans and the instructors were primarily American instructors. The Course is now truly international – with international students and instructors.

About the courses and teaching.

The appliance is the same that was used in Tweed's day, but the force systems and the application of these force systems has been drastically changed and upgraded. No longer does each malocclusion correction take 16 sets of archwires. It is now done with four, or at the most five, sets of archwires.

Dr. Brandt asked Dr. Tweed about thoughts on life and on how large a practice should be.

Dr. Tweed's answer in 1967 is appropriate for that time in history and his concept of practice size rings true for today. In Tweed's era, one hundred active patients was a considerable load for an individual orthodontist. Remember, however, that at that time the orthodontist was pinching bands and dental assistants were not used very much. Dr. Tweed stated that an orthodontist should interact with each and

every patient, that the patient should feel like he or she was getting the orthodontist's best effort and personal attention. Dr. Tweed did not advocate auxiliaries doing orthodontic treatment. In today's world, the Foundation remains steadfast to Dr.

Tweed's thoughts and it does not encourage its members to allow auxiliaries to treat patients. Auxiliaries are necessary, but should not be the "doctor." It is understood that a clinician can see more than one hundred patients – but the emphasis on seeing the number that can be ethically managed is still appropriate. Tweed also stated, "One should remember that the wise orthodontist will limit his practice to the extent that he can give enough father time to both his wife and his family. I also think it is a horrible mistake for any man to completely neglect his family in an endeavor to accumulate money beyond his needs. The most important investment a man ever makes in his life is his wife and children and to neglect them at the expense of getting unnecessary dollars, I think, is sinful." Well said, Dr. Tweed!

Dr. Brandt asked Dr. Tweed about cephalometrics and its importance.

Tweed stated, "I cannot understand how any young man who is interested in growth processes occurring in children can possibly avoid having a cephalometer in his office and using it." With all the tools at our disposal today, the cephalostat still seems to be necessary. A high resolution cephalogram is required by the American Journal of Orthodontics and Dentofacial Orthopedics for case reports and by The American Board of Orthodontics for case reports. Cephalograms give the clinician

a lot of information. Tweed was exactly right when he stated that cephalometrics was a very important and critical part of the treatment planning process in orthodontics. That statement that he made in 1967 remains true today.

Dr. Brandt asked Dr. Tweed about appliance removal and whether or not he would be happy if every patient's result complied with the normal values of the Tweed triangle.

Tweed's answer was that if a patient's result complied with the angular requirements of the diagnostic facial triangle and "your eyes tell you that the face is protrusive, then forget the triangle and follow good common horse sense and move the denture further posteriorly." This is as true today as it was in Tweed's day. Cephalometrics is only a tool. It is a valuable tool, but it remains only a tool. The face and the beauty and harmony of the face is what determines where the teeth should be placed. This is as true today as it was in Tweed's day. Facial esthetics is the primary focus of the treatment planning material that is presented at the Tweed Study Course.

Dr. Brandt: What about the re-crowding of lower incisors? Does this happen?

Dr. Tweed: "Sid, it certainly does."

Dr. Tweed explains this phenomenon by the fact that the lower face grows forward at a more rapid rate than mid face or the maxilla. He also talks about tense lips and the fact that tense lips will prevent the maxillary incisors from tipping forward and the result will be that the mandibular incisors will be tipped lingually. He stated, "This oftentimes results in the development

of irregularities in the incisal segment.” Tweed goes on to talk about Type C growth trends and at the time he used a mandibular canine to canine lingual bar retainer. He stated that this lingual bar should be worn until the cessation of active growth. Many in orthodontics still use lingual bars. The problem in today’s orthodontics is that patients are told that a lingual retainer needs to be worn for their entire life. This is because the teeth have been tipped forward off the basal bone and the specialty knows that there is no way the teeth will stay there. Referred literature supports this statement.

The retainer.

The Tweed Study Course now teaches its students that removable retainers are the retainer of choice. The Study Course teaches the student that these removable retainers should be worn full time for at least six months and that their use can be discontinued gradually until the patient is finished with growth.

Dr. Brandt asked Dr. Tweed about his opinion as to the influence of muscles and musculature on the stability of the treated malocclusion.

Tweed’s answer in 1967 is the same answer that we would give today – musculature is very important. Abnormal tongue and lip sucking or swallowing habits must be corrected.

Dr. Brandt and Dr. Tweed discussed extraction and nonextraction as part of their discussion.

Tweed stated that he was attempting to have one hundred nonextraction patients recalled as well as one hundred extraction patients and be able

to compare the two. He draws the following conclusion, “I am sure one will find the extraction cases 20, 25, and 30 years later are much nicer than the nonextraction cases.” In today’s world in which appliances govern treatment and everything is attempted without removal of teeth, the Tweed Study Course remains true to Dr. Tweed’s concepts of facial balance and harmony. In Tweed’s day, he extracted first premolars if he extracted. In today’s world, the differential diagnosis is much different. It can lead a clinician to different treatment plans. A patient may need second premolars extracted or, in many Class II patients, the maxillary first premolars and mandibular second premolars should be removed. The Tweed Study Course has its students treat essentially four types of patients on the typodont. These four are: A Class I bialveolar protrusion crowded case for which four first premolars are removed. A Class II malocclusion that presents with mandibular incisors which are upright but maxillary incisors are protruded. This malocclusion is corrected with the removal of maxillary first premolars and mandibular second premolars. This was unheard of in Tweed’s day. In today’s world many offices will attempt to treat this particular type of patient non-premolar extraction and will wind up pushing the lower incisors off basal bone and compromising facial esthetics. The third type of case that is treated on the typodont is a severely protruded Class II malocclusion in which the mandibular arch is prepared and the maxillary arch is distalized. This distalization is done only after space is created for it, i.e. maxillary third molars are removed for the patient. The fourth typodont

treatment is a non-premolar extraction treatment.

The force systems for these types of malocclusion corrections are the same. The Tweed Study Course emphasizes, above all else, facial esthetics. Foundation members adhere to the concept that facial esthetics cannot be achieved unless the teeth are reasonably upright over their bony support. The big difference in today's world and Dr. Tweed's world is the fact that many different extraction patterns exist for the benefit of the patient. In Tweed's world, only the first premolars were removed. Some of these patients might have better been treated with second premolar removal or with maxillary first premolar/mandibular second premolar removal. Yet we cannot discount Tweed's strict adherence to the fact that teeth must be within the confines of their bony support and must be at equilibrium with the musculature. This concept of Tweed's remains as important today as it was in Tweed's day. The specialty needs to recognize this fact.

Dr. Brandt asked Dr. Tweed to lead a discussion about third order, or what is commonly called, torque.

Dr. Tweed's answer was as appropriate in 1967 as it is today. He stated that, "torque can be good and bad." He further stated, "that every effort at our command should be made to maintain the position – the original position – of the root apices of mandibular incisors. When torque displaces mandibular root apices, either lingually or labially, the diagnostic facial triangle as a treatment guide becomes meaningless." He goes on to talk about a person who placed so much lingual crown torque

on the mandibular incisors that the root apices were torqued through the cortical plate. Dr. Tweed's concepts of torque is still being taught at the Tweed Study Course.

Dr. Tweed was asked about root resorption.

Dr. Brandt asked him to comment on its incidence, what he thought caused it and asked for any other comments that Dr. Tweed might have. Dr. Tweed stated that he felt that root resorption was due to a jiggling force on the teeth and the fact that if you moved a tooth root against the cortical plane, root resorption would be the result. This answer of Dr. Tweed's is appropriate today. At the time he studied root resorption, he was using round .022 gold archwires, and he felt that the jiggling permitted by these archwires had a lot to do with root resorption. He went on to state that one of the most satisfying developments of his career had been the lack of root resorption in his practice. He attributed this fact to a change in mechanics in which he eliminated jiggling of the teeth by using less round wire and more rigid edgewise wire. At today's Tweed Study Course, round wire is not used. Each case that is treated on the typodont is started with edgewise wire. The teaching staff espouses the use of more rigid edgewise wire to eliminate jiggling of the teeth. In the case reports that are shown at the Tweed Study Course, root resorption has never been an issue. Tweed's statements seem to be true. The teaching staff of the Tweed Study Course continues to try to eliminate jiggling of teeth in each respective practice

Dr. Brandt states that the profession seems to be showing a decrease in its utilization of serial extraction procedures.

He asked Dr. Tweed for his latest thinking on the subject. Dr. Tweed stated, "It is a pity that the profession is not aware of the tremendous benefits that can and do result from scientific serial extraction procedures." Dr. Brandt asked him other questions about serial extraction and Tweed answers them to the best of his ability.

The Tweed Study Course does not teach serial extraction procedures. We do not have time. Foundation members, however, are encouraged to read the literature about serial extraction and to scientifically apply the procedure to their individual patients if it is deemed a good approach. Members of the Tweed Study Course teaching staff and of the Foundation believe in the concept of dimensions of the dentition. This is a concept that was clearly defined by Lavern Merrifield, Tweed's Co-Director of the Tweed Study Course until Tweed's death in 1970. Because of the fact that many in the specialty of orthodontics now talk about arch development and place appliances in order to expand the arches, serial extraction has fallen on hard times. The Foundation does not subscribe to the theory of arch development and encourages its members to continue to think about serial extraction when tooth mass greatly exceeds arch length. It can be a very valuable service for the patient.

Dr. Tweed's concepts were revolutionary for his day and time. The spe-

cialty gradually came to understand that Tweed, a serious student of orthodontics, had presented some very useful and timely material. The specialty in the 50's and 60's beat a path to his door in Tucson. Everyone wanted to learn his secret. His two volume text remains a land mark in clinical orthodontics. The diagnostic facial triangle, which Tweed considered to be his greatest contribution to orthodontics, remains as valuable today as it was the day it was introduced. The Tweed Study Course is the longest surviving continuing education experience in dentistry. It continues to receive more and more requests from students around the world. It is thriving. The thing that Charles Tweed started in 1941 with his first Study Course continues to impact the specialty of orthodontics. The force systems that are taught at the Tweed Study Course are different than those that Tweed taught, but they work in a more efficient and timely manner. Treatment is simple, straight forward and predictable when the force systems are used. The bottom line is facial esthetics. Foundation members, in whatever country of practice, continue to strive to achieve facial balance and harmony for each and every patient. This in itself is the great legacy of Charles H. Tweed, Jr. It is the hope of the members of the Foundation that the Tweed Study Course and the Charles H. Tweed International Foundation will survive into perpetuity. Orthodontics needs them.

Conflict of interest: The author declares that there is no conflict of interest.

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