An interview with

Didier Fillion

- Graduate from the Paris V University.
- Specialist from the Paris V University.
- The only orthodontist practicing lingual orthodontics exclusively for over 30 years (Paris-London).
- Member of the American Association of Orthodontists (AAO).
- Member of the American Lingual Orthodontics Association (ALOA).
- President of the British Lingual Orthodontic Society (BLOS).
- Honorary President of the French Lingual Orthodontic Society (SFOL).
- Honorary Secretary of the European Society of Lingual Orthodontics (ESLO).
- Founding Member of the World Society of Lingual Orthodontics (WSLO).
- Adjunct Professor, Paris V University.
- Adjunct Professor, New York University (NYU), USA.
- Visiting Professor, University of Ferrara (Italy).

Dr. Didier Fillion began his career after graduating from the Paris V University at Sams, a small French town and his homeland. After having developed his basic training at the Tweed Foundation, he decided to devote himself to Lingual Orthodontics encouraged by the courses administered by Dr. John C. Gorman, which he attended seven times in a row. Determined to work exclusively with lingual orthodontics, he settled in Paris and for over 30 years has garnered worldwide acclaim for the excellence of his clinical results using this technique, by melding together quality and aesthetics. Although his first choice was to be a full time clinician, his professional brilliance opened the doors to an academic career, and Dr. Fillion has been invited to give classes and courses on lingual orthodontics at the Paris V University, New York University, University of Ferrara, University of Coimbra, among others. In seeking to teach this technique with utmost expertise and thereby strengthen its worldwide presence, he invested considerable hard work to found the French Lingual Orthodontic Society and was instrumental in the process of establishing similar organizations around the globe, including the Brazilian Association of Lingual Orthodontics (ABOL) and the World Society of Lingual Orthodontics (WSLO). He currently administers courses in several countries around the world, educating his audiences on the progress experienced by lingual orthodontics while disseminating the increasingly predictable and consistent clinical outcomes achieved with this technique.

Recently he once again visited Brazil at the invitation of the Brazilian Association of Lingual Orthodontics (ABOL) for a course in which he presented his new virtual set-up and bracket transfer system. On that occasion he kindly gave us an interview fielding some questions posed by Brazilian orthodontists who practice the lingual technique. I hope you enjoy it.

Luiz Fernando Eto

1) Why choose lingual orthodontics? Carla Melleiro

Because it is a completely invisible technique and there is great demand for aesthetic treatment by adult patients.[11,13]

2) How do you assess the current status of lingual orthodontics? Luiz Fernando Eto

Today, adults have just become aware that they can get their teeth straightened at any age, and that this can be accomplished with aesthetic appliances.[12,13] Why is it then that only very few patients get treated with this technique if several lingual advocates out there have shown for years that results are petty similar to conventional (buccal) techniques? There are three reasons: Experience, laboratory and costs. Experience is related to teaching. Today, only a handful of universities have incorporated the teaching of lingual orthodontics in their graduate programs. Lingual brackets require specific laboratory procedures. Thanks to digital technology and the Internet, study models can be scanned in any country and sent over to Lingual Lab Centers, where all the procedures are performed. Thus, laboratory issues are being simplified and sorted out little by little.[2,3,8,10] Costs are related to patient chair time. Chair time is 2 to 3 times longer than in conventional orthodontics. The reasons are numerous, but with experience you can cut it down to 1.5x the service time for conventional orthodontics.

So I'm sure that lingual orthodontics is bound to increase in popularity over the next five years, and will become just as popular as—if not more than—traditional (buccal) techniques. This is already true in some European countries where many orthodontists treat their adolescent patients with lingual orthodontics, while other orthodontists leave it up to their patients to decide on the choice of technique, since the results are the same.[4,9]

3) How comfortable is it for orthodontic patients who wear brackets on the lingual surface of their teeth? Marcelo Marigo

All orthodontic appliances generate a certain amount of discomfort, and lingual braces require an adjustment period involving a sore tongue and speech adaptation. The severity of these problems is commensurate with the thickness of the brackets.[11,13] For 4 years now mini-brackets with a thickness of 1.5 mm have been available on the market. This is the smallest size that can be used, but brackets with a thickness of 2 mm help to reduce discomfort. The lingual Straight Wire technique renders the appliance more comfortable because incisor brackets are closer to the lingual surface, as well as less prominent. And since bends on the archwires (which are softer, with a better polish) are not necessary, patient comfort is increased. Figure 1 shows low profile lingual brackets that can also be used in the lingual Straight Wire technique.

4) What is the best bracket for lingual orthodontics? Valter Arima

To ensure patient comfort brackets should be small, with a maximum of 2 mm thickness. You don't need hooks on all teeth, only canines

FIGURE 1 - Straight Wire lingual appliance.

and second molars.[6] Slot size must be very precise and with minimal variation because torque control in this technique is more difficult than when brackets are bonded to the buccal surface. Whether or not brackets are self-ligating, with active or passive clips does not matter. I prefer a ligated appliance of outstanding quality to an inefficient self-ligating appliance. Moreover, avoiding the loss of clinical time is an issue worthy of consideration.

5) Taking into account that the latest lingual brackets have no bite plane, is there any correlation between build-ups on molars and the occurrence of TMJ dysfunction? Rita Thurler

I never noticed any correlation between build-ups and TMD during therapy in patients who had good function prior to orthodontic treatment.[7] If I see a patient that has a dysfunction I always refer them to a TMJ specialist to determine whether or not they are eligible for orthodontic treatment. Anyway, build-ups should not be left in the mouth for longer than 3 to 4 months, and must be removed as soon as alignment and leveling are complete.

6) Is biomechanical control similar to conventional techniques (brackets on buccal)? Andréia Cotrim

The key difference is in the position of the bracket relative to the center of resistance. When performing retraction in the lingual technique you will find a stubborn lingual inclination that can be hard, although possible, to avoid. Moreover, lower alignment and intrusion of mandibular incisors are facilitated because the brackets are in line with the center of resistance. We need not incorporate a reverse curve of Spee in the archwires if incisors are not upright. If they are upright, intrusion force will increase uprighting. It is therefore advisable to procline the incisors first.

7)) What is your favorite bonding material? Alexander Macedo

Excellent bonding materials are available and I can't recommend any one in particular. I have used 4 different materials over the past 20 years. At first I used a two-paste product, then two liquids, then glass ionomer cement and now I use liquid composite. A very accurate laboratory procedure is fundamental to ensure as little space as possible between the resin pad and the enamel surface, and then filling this space with the product, avoiding any excess that might irritate the gums. I managed to increase adherence by extending the pad resin across a large area of the lingual surface using Komori's method. Currently, debonds are extremely rare.[14]

8) How do you see the use of retraction loops in cases of premolar extraction to prevent incisors from uprighting? Graça Guimarães

As is the case with any retraction system, one essential point in the lingual technique consists in generating enough force to counteract the spontaneous lingual inclination that occurs when positioning the brackets closer to the center of resistance. The use of retraction loops is good but it takes up more chair time and so I tend to select the simpler procedures, especially those that allow me to avoid archwire bends. I use sliding mechanics with the combined use of wires: rectangular in the anterior segment (0.018x0.025-in) and round in the posterior segment (0.018-in), and incorporate the curve of Spee to help with vertical control.

9) Some people say that case finishing with lingual orthodontics is less than good. Is this really true? Alexandre Moro

Outcome quality depends on how well you start treatment. In other words, it depends on planning and correct bracket positioning.[1,2,5] Just like in the conventional (buccal) technique,

training and experience are very important to achieve good results.

10) What is your opinion about the Straight Wire lingual technique? Marcos Prieto

In my view, the Straight Wire lingual orthodontic technique is the necessary evolution of lingual orthodontics. Orthodontists should not go on wasting their time bending wires when you can accomplish the same treatment results using unbent Straight Wire. It's is a major step towards streamlining this technique. It will probably take another couple of years to create awareness among orthodontists, but there is no turning back.[14]

11) Since there is a decrease in the amount of wire between lateral incisor and first premolar in the Straight Wire technique, wouldn't it be convenient to indicate the conventional technique with a "mushroom" archwire configuration in cases where canines need torque or rotation correction? Carla Melleiro

The presence of 2-4 mm in/out bends on the archwire is not common in the buccal technique. I think the fact that these bends weaken the archwires raises transverse control issues. Additionally, it is a causative factor in the increased occurrence of the "bowing effect", the vertical and transverse deformation of the archwire due to retraction forces applied to the lingual brackets.[14]

12) Do you believe that self-ligating appliances point to a new direction in lingual orthodontics? Luiz Fernando Eto

Yes, of course, but the design of self-ligating lingual brackets is more challenging because they must be smaller and the closure system must move with ease. And I should add that the archwire must fit into the slot so the clips can fully close, and this process is harder to perform lingually. But I am sure that these issues will soon be addressed by the orthodontic companies, some of which have already shown interest.

13) What is the significance of the laboratory phase in lingual orthodontics? Marcelo Marigo

Brackets are positioned during the laboratory phase, so it would be safe to say that this is the most important phase.[2]

14) Considering the use of self-ligating brackets in clinical practice, how lingual orthodontics has evolved and the credibility of this technique, in your opinion, how has CAD/CAM technology contributed to proper placement of lingual brackets? Valter Arima

The "famous lingual orthodontics" would benefit immensely if professionals could have a lab where they could control the placement of brackets in all cases. For 25 years I have held the belief that the key to lingual orthodontics is the proper placement of brackets and the possibility of incorporating overcorrections. Being able to check and modify the virtual set-up and placement of brackets favors orthodontists by affording them greater control. Besides, through the Internet, they become their own lab technicians.[8] Figure 2 shows a three-dimensional scanner used to create virtual set-ups.

But it is important to note that this feature is not available in all digital systems, so you need to select an "open" system. The accuracy in bracket positioning provided by CAD/CAM technology enables faster alignment as well as the possibility of using unbent (straight) archwires. Figure 3 shows a virtual set-up with teeth in their ideal position, ready to receive lingual brackets.

Furthermore, I show my patients the virtual set-up and the finishing of vertical tooth positions before preparing their appliance. This technology streamlines the whole process, and is a great tool to help patient communication and understanding.

FIGURE 2 - Three-dimensional scanner.

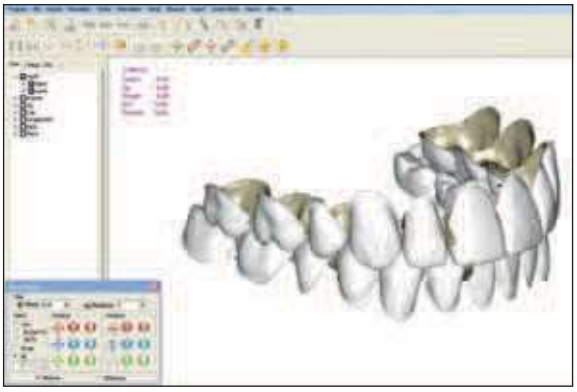

FIGURE 3 - Virtual set-up.

FIGURE 4 - Positioning brackets on virtual set-up.

FIGURE 5 - Transfer jig on malocclusion model.

Figure 4 shows the placement of brackets on the virtual set-up and Figure 5 shows the transfer jig mounted on the malocclusion model, ready for bracket transfer to the patient's mouth.

15) What role does the Orapix play in contemporary orthodontics? Graça Guimarães

Systems such as Orapix, or any other digital system for that matter, are poised to become the main tool for orthodontists in the near future. It is very useful for lingual orthodontics thanks to its indirect bracket positioning, but it is also becoming increasingly popular in buccal orthodontics. I could mention Ormco's "Insignia" system or the "Suresmile" by Orapix. The latter is the only system available for buccal and lingual orthodontics. In a few months or years direct mouth scanning will become a reality. To answer your question, digital systems are the next step in the evolution of orthodontics.[8]

16) What is the most important difference between a treatment with Invisalign and lingual orthodontics, in your view? Rita Thurler

I could point out several differences:

- » Lingual orthodontics works with a completely invisible appliance.
- » Lingual orthodontics can successfully treat all types of malocclusions.
- » Treatment time is always shorter with lingual orthodontics.
- » Results are always better.
- » The Invisalign system allows no mechanical control by the orthodontist.

17) Would you say that any orthodontic specialist can treat patients using lingual orthodontics? Andréia Cotrim

Yes, but proper training is an absolute necessity. Just attending a course is not enough.

18) As regards the teaching of lingual orthodontics, do you think it would be better to add it as a discipline in specialist courses or should it be taught in an exclusive program geared to specialists? Here in Brazil there are courses for specialists. Alexander Macedo

At this time I think it is better to offer courses to specialists. This technique differs so radically from others that it is better learned when we are already specialists and have amassed some experience in traditional orthodontics.

19) What advice would you give to those Brazilian orthodontists who want to treat patients with lingual orthodontics? Marcos Prieto

My first advice is to start out with simple cases and gain familiarity with indirect bonding, archwire insertion, ligation. Extraction cases should be dealt with later. And my second tip is that they should learn enough until they can fully master the technique. Lingual orthodontics is different from buccal orthodontics, and orthodontists should therefore learn about its unique features and differences.

There are many lingual orthodontics programs but to prove their worth they should show clinical cases because theory alone is not enough. Before I decided to limit my practice to lingual orthodontics, I had attended the same course taught by pioneers Kurz, Gorman and Smith 7 times in the 80s. Each time I learned more.

20) What is the future of lingual orthodontics? Alexandre Moro

Demand from adult patients is growing and so is the number of orthodontists. New technologies are increasingly improving and simplifying lingual orthodontics. It is therefore logical to predict that this technique will experience growth over the next five years, especially if technological advances help to reduce chair time and total cost.[13] Price is a key element in this equation.

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