Classic Article

Dialogue with Harvey Stallard Regarding The Incisal Guidance Phenomenon
PART 1

James D. Lytle, D.D.S.
Ohio, U.S.A.

[Introduction]

For several years in the middle and late 1960's the author-editor of this treatise struggled with the anterior components of occlusion.

Gnathology, in those years, had a well defined concept of posterior occlusion and its anatomical relation to temporo-mandibular joint anatomy and functions.

The anterior component was less well described or for that matter thought out. Through discourse with Charles Stuart, several meetings were arranged with Harvey Stallard — the then thinking guru of gnathology.

Briefly, this occlusal discourse was initiated in an effort to establish an undertaking of the ideal anterior component of occlusal morphology. This being done, then dentistry could move forward to developing scientific concepts of anterior tooth restoration that are not arbitrary.

What follows is a series of letters which address this issue. The letters of James Lytle have been typed from the original hand written format for ease of reading.

This diatribe is presented for your edification and enjoyment.

Yours truly with incisive humility,

JAMES D. LYTLE, D.D.S.

[from Lytle to Stallard]

June 30, 1970

Dr. Harvey Stallard
4275 Altamirano Way
San Diego, California 92103
Dear Dr. Stallard:

You may recall that we talked of "Cuspid Protected Occlusion", Incisal Guidance, the Anterior Component and the like, at the mid winter meeting in Chicago.

For several years now I have been concerned with a more clear understanding regarding this aspect of the Science of Occlusion.

Suffice it to say that all has been said about the rules and laws governing posterior occlusion. I believe our somewhat vague understanding of the anterior segment's role is a reflection of several misunderstandings.

First, still another hold over from denture occlusion, we envision incisal guidance in the same fashion as we once did balanced occlusion. In fact these, like many other terms we use (i.e. protrusive, working, balancing etc.) are words used to describe phases of denture occlusion — as we visualize them on an articulator.

This concept overlaps the second area of my concern in communication: That is to say we should reserve certain terminology, such as incisal guidance, for articulators and not use the same for humans. Our thinking, then, would be more clear relative to the temporomandibular joint's part in dictating the whole occlusion. (That is the anterior and posterior as one unit).

If, for example, we think of incisal guidance or protrusive when dealing with occlusion then we think of a "tooth guided" occlusion, a wearing occlusion, prematurities or in fact a malocclusion. The Science of Occlusion has taught us one thing, if no other, and this is that gnathology (I hesitate to use such a misunderstood term) is different from all other concepts in that it is not a "tooth guided" concept.

D'Amico's thesis that we should load the cuspids to protect the posterior teeth is equally erroneous since we should be thinking about "un-loading" all teeth. He did, however, point up an historic fact that the human dentition, since the advent of steel and porcelain, should not wear due to function. Assuming this to be true then the occlusal pathoses we see must be parafunctional in origin. This, we know, generally takes the form of grinding or clenching.

How then can we best think of total treatment for these patients' mouths? If we are to treat a mouth, then the entire mouth (anterior and posterior units) must be carefully analyzed as a whole. Our goal here may be to "unload" the teeth or better — to eliminate all prematurities within the perimeters of this patient's mandibular
movements. These prematurities act like hangnails. If left they are self perpetuating to almost geometric proportions. If eliminated, harmony is restored.

The first step in undertaking treatment is to have a clear picture of the difference in purpose between articulators and the living stomatognatic system. This is to say that with complete consideration for the proper upper lingual concavity and lower labial incisal edge we will get tooth guidance on the articulator but not in the mouth. Thus the difference in purpose and thus the difference in terminology.

It is important to note that should we decide not to treat partially worn anteriors, but just the posteriors — I believe this to be a compromise — often justified but not recognized as truly gnathologic. Finally, I should like to take the luxury of proposing a specific mode of handling this anterior segment.

Rather than have the incisors slide on a ‘flat’ lingual concavity of even multiple surfaces in protrusion (of the articulator) — I should like to see the upper incisor ride on a lower (more than one contact is neither necessary nor desirable — on the articulator).

Using the labial face of the lower as its contacting surface (again, only on the articulator) this contact would take place only at the fullest extent of side shift. The result would create a non-advantageous and at best a difficult parafunctional movement (for the patient).

Further and more subtle modifications of the anteriors would be necessary to encompass all the perimeters of mandibular movement. (I say this at the risk of oversimplification). Certainly we must work within the limits of good esthetics and phonetics. And, it goes without saying that contact, contour, marginal adaption must be ideal in promoting dental as well as periodontal health.

I would be very interested in your most critical evaluation of these thoughts.

Very truly yours,

James D. Lytle, D.D.S.
[from Stallard to Lytle]

July 17, 1970

James D. Lytle, D.D.S.
15 Shelton Road
Cohasset, Mass 02025.

Dear Dr. Lytle:

I have asked my secretary to type out your letter so that I can read it better and easier. I am not suffering from eye sight but from, perhaps, eye tire.

I am so use to glance reading and skimming and vision memory and motor memory that it's hard to read unless I'm crutched up with these aids. I have always had a hard time learning to read and am still having that difficulty.

I did see that you are thinking about making the anterior disclusion match the posterior disclusion. The tooth discluders are the incisors and the canines. We have not yet had time to change our manual on waxing to include how to arrange the incisors and canines with reference to the condyle-eminence factors so that they can the easier keep the postcanine teeth from all eccentric occlusal contacts and how the incisors in protrusive extracyclic diagnostic position can keep the canines out of occlusal contacts and also how the canines can keep the incisors from occlusal contact in the lateral extracyclic diagnostic position.

I never did know what was meant by incisal guidance. Frahm called the ‘Bleistift’ that Gysi put on his articulator ‘incisal guide’ which could be regulated by modifying the wings of the plate it slid around on, Gysi tells about the history of this front attachment in an article History of the prop pencil plate on an articulator (G. Historisches uber den Stutzstift-Teller an Artkulatoren). It’s too bad he ever invented it. If you are going to make something in the front of an articulator to represent the disclusion of the front teeth, it should be right where the front teeth are. That pillar and plate out in front has caused more misthinking about occlusion than anything else made since Bonwill made his contraption.

I think that Schuyler believes that the incisors should be used to guide the extracyclic “chew-ins” when you are waxing up in the mouth the occlusal forms of the restorations you are about to put in a patient’s mouth. They are not guides to chewing but to rubbing in teeth. Of that technic of reconstructing occlusal surface I
have said that it sows in the occlusion reestablished the seeds of wear. I don’t believe the postcanine teeth should ever touch anything except in centricly related centric occlusion.

It is very clear to me that the technics that men have used to prepare the wax pattern is carried over into their thinking so that what they can do is what God had in mind when he made the teeth.

I am still wondering who and how and what thinking led dentists to believe that you chew horizontally and therefore you should fix the teeth so that a person can chew horizontally.

It seems to me that any tooth that guides the other teeth to an occlusion during chewing cyclicly is a deflector of the direction of the jaw closure and are therefore in malocclusion.

The deflectors usually anteriorize or lateralize the closures. And, if a tooth should guide the other teeth to a rearmost centric occlusion, that it would be a prematurity or a deflector and would be in malocclusion. If, in other words, a tooth should posteriorize the closure it would be a deflector and therefore in malocclusion. One of the reasons why it is so difficult for dentists to understand each other is that they have glossaries that are poorly gotten up. They are so afraid to do what classical scholars have been doing for 600 years with Latin and Greek roots. Carl Boucher nearly goes to heaven in the purity of words if you say posteriorize. That use of ‘ize’ to create verbs out of nouns and adjectives grew up when Latin was the international scientific medium for exchanging thoughts. But the Ciceronians resisted its use until the scholars dropped latin and went to French. The French drafted their youth until they destroyed the learning of their scientists and we now are learning upon English and it has not been used long enough in science to allow us to take little words and put them together. What you should be able to do is to say ‘aroundtoothitis’ (periodontitis), toothclosure (occlusion), ‘keepers of tooth from touching (disclusion)’. It will take another 600 years to do this decently. But knowhow and cando seem to be winning.

Seriously speaking, however, it seems to me that muscles are the only things that should guide closures when the teeth are near home seating. I think that disclusion is guided by muscles operating the condyles that are directed by cams in the eminences. When the muscles open the jaw, it discludes the teeth. I think when the muscles pull the condyles forward the downwardness will and should disclude the postcanine teeth. I think that in lateral swings the orbiting condyle by coming down the eminence should separate the postcanine teeth and should cooperate with the far canine
if a lateral extracyclic diagnostic closure position is desired by the viewer.

I think articulators could be made to copy border relationship, but dentists would have to understand the cyclic chewing relations in the gnathic system in order to know how to use the articulator, that is, mount the casts, set the cams, and test the border position. Nobody uses chewing motions to set up teeth. They use border positions, as centricly related centric occlusion, rearmost axes, rearmost horizontal, etc. We use these because they can be repeated and fence in all the other motions that the muscles make in cyclic chewing. We should do everything we can to free the muscles in cyclic chewing.

More later,

Harvey Stallard (Sign)

[from Lytle to Stallard]

July 22, 1970

Dr. Harvey Stallard
4275 Altamirano Way
San Diego, California 92103

Dear Dr. Stallard:

It was a real thrill to hear from you and to have you devote such effort toward my particular request.

I certainly apologise for sending a letter longhand but am spending a sabbatical year in Boston without secretarial advantages. None-the-less, I have wanted to discuss and otherwise philosophize about the “incisal guidance phenomenon” since our meeting in Chicago. So, again, please excuse the stationery.

In a nut shell, I think my last letter was pointed toward, again, communication. It seems to me that _incisal guidance_ may be a good term for articulator usage but should not be a part of the terminology to describe patients’ articulation. The term incisal guidance simply infers, on patients, tooth guidance or prematurity to centric closure. On articulators, however, the incisal table may be used as a guide.
In another sense, incisal guidance might be thought of as an active phenomenon where disclusion should be seen in the light of passivity! Relegation of terms to their proper place seems imperative in communication and resultant understanding.

I fear my over anxiousness to confer with you on these thoughts may have lead me too down the path of oversimplification and thus poor communication.

I would be very pleased to hear from you again when time permits your perusal of my thoughts.

Again, thank you.

James D. Lytle, D.D.S.

[from Stallard to Lytle]

July 27, 1970

James D. Lytle, D.D.S.
15 Shelton Road
Cohasset, Mass 02025

Dear James:

You’re in the beartrap of incisal guidance. When I studied orthodontics under Edward H. Angle at Pasadena, he taught with great certainty that the teeth should guide the jaw to its closure position. He seemed to believe that retrognathism of the mandible is due to its being too far back in the face: prognathism of the mandible, he said, was due to the mandible being held forward to clear the throat isthmus for breathing. In distocclusions, he said, the holding of the mandible back to keep the mouth opened for breathing just caused perverted axial stress of the vertical axes of the teeth and then the chewing made the mandible stay and get shorter. In mesiocclusion the holding of the mandible forward perverted the axial stress oppositely and as the child chewed he made the mandible bigger and longer and the maxillae smaller and narrower.

He taught all his students (including Monson) that teeth of themselves have to do the guidance because the muscles, the joints, and the growth of the bones could not be expected to be so coordinated and automated that the muscles alone could carry the mandible
to its closure position without any guidance. Nowadays, I suspect that Angle never knew that tooth guidance is wrong; it's a form of malocclusion, I call it deflective malocclusion. When you come down to the scratched thinking, we have to set up teeth to fit the will of the muscles. If there is ever any tooth guidance on an articulator, assuming that the casts have been mounted gnathically, the same kind of guidance occurs in the mouth but it is what I call deflective malocclusion.

Incisal guidance, or incisor guidance, is used by the students of Schuyler to generate occlusal grooves in the wax patterns of upper teeth. That is real tooth guidance. But in doing this, the seed of wear is sown in a form of "Undiscluded malocclusion". Schuyler has dismissed bilateral balanced malocclusion as being unfit, but he has not studied long enough to want to dismiss unilateral cross-tooth balanced malocclusion. Balanced occlusion does not allow the group uses of the teeth and it overfills the interocclusal space. It provides for horizontal gnashing and does not tempt the patient to chew cyclicly in a vertical manner.

I never use the term communication. I think we should be led to study the facts and draw our own conclusions. Communication connotes that we learn from authorities instead from our own experience. There are no authorities to communicate. Authorities are modern prophets. They should be stoned, too!!

Harvey Stallard (Sign)

[from Lytle to Stallard]  
August 1, 1970  

Dr. Harvey Stallard  
4275 Altamirano Way  
San Diego, California 92103  

Dear Dr. Stallard:

I suppose I should let this matter rest in peace, but I simply can't. Since 1966, at least, I have been extremely interested in "the incisal guidance phenomenon".

Since my first exposure to the Science of Occlusion, I, like many others, have sought the final clues so desperately needed with regard to the anterior teeth. It seemed that those laws of occlusion
we all recognize for posterior teeth simply can not stop at the anteriors because we are baffled by a different morphology. Neither should we regress to tooth guidance (cusp protection, or what have you) for the anteriors when pains have been taken to "free" the posteriors. This then would simply be anterior deflective malocclusion.

It seems to me that many occlusionists were and still are locked in this beartrap of incisal guidance that you allude to. This is not to infer that I am clairvoyant in matters of anterior occlusion and disclusion, but that I sincerely believe the "hang up" is in part — terminology.

Communication may have been a poor choice of words but historically a lack of proper or complete definition has been the basis of making wrong decisions. That is to say, if we can't define our terms, we really can't talk about it. Another analogy might be that our experience may be quite similar, but much can be lost in transitions from experience to verbalization. I believe this to be the case in our particular exchange of letters.

I am in firm agreement with your stand on muscular controlled occlusion and with your feelings in general with regards the Science of Occlusion.

It seems axiomatic that even when casts are mounted gnathically that either the so called incisal pin or the teeth must touch some place in an excentric position. My point is that exactly where and how they touch is of prime import. This is the last gap between tooth guidance and true gnathodynamics — please forgive my liberty with words.

If the teeth, then, can be so shaped as to allow for any and all deviations of the temporomandibular joint system they can indeed be "free" of deflective malocclusion — in the mouth.

None the less, they must touch at some extreme (back on the articulator). My point in trying to clarify this is we must separate static articulation for articulators from the dynamics of a freely functioning cyclic articulation in the living. This freedom is definitely not the 'horizontal' long centric otherwise described, which can lead to the gnashing you described.

I know in my heart we are thinking the same thing but some minor technicalities seem a barrier. If time permits, wont you do me the honor of once more reviewing my thoughts so this riddle can be put to rest?
Again, many thanks for your interest and please pardon the stationery.

Very truly yours,

James D. Lytle, D.D.S.

to be continued

Dr. James D. Lytle
121 Wm. Howard Taft Road
Cincinnati, Ohio 45219
U.S.A.