

We Have Evolved Beyond The Golden Proportion. The Next Level of Aesthetic Excellence has Arrived.....*The Platinum Paradigm*↻.



Trent W. Smallwood DDS
Comprehensive Aesthetic Dentist
Tempe, Arizona

Private Practice
420 West Warner Road
Suite #101
Tempe, Arizona. 85284
Phone: 480.894.8101
Fax: 480.345.7931
Email: tsmallwood@qwest.net

ABSTRACT

The Platinum Paradigm is a set of guidelines, or parameters, that compose a system for Aesthetic Excellence. As clinicians we must strive to emulate nature and create restorations that “deceive” the eye in believing that what you are seeing is naturally born. Exceptional beauty can often be visualized, within smiles, when masterfully placed imperfections are crafted, and placed upon individual teeth. When carefully considered, these expertly placed inclusions, and imperfections, may suggest the differentiation between a natural smile, and a contrived smile.¹⁰ The new generation of aesthetics is upon us, and the standard is evolving. The Platinum Paradigm↻ is the next evolutionary step beyond the Golden Proportion.

Contemporary smile design techniques and philosophies are constantly advancing, and as the avant-garde aesthetic artiste evolves, his/her standard must escalate to a level that demands that if the varying philosophies do not align, at the very least, their created aesthetics must follow function. Numerous factors, parameters, and proportions must be

evaluated thoroughly, to fully facilitate the “style” of the smile design desired by the clinician and patient. **10**

Although posterior dentistry can offer a tremendous amount of satisfaction, and offers an impressive service to the patient, modern smile design tenders substantial exhilaration for the dentist, and provides the patient with an often “life-changing” result. Dentistry today has, to the clinicians’ disposal, numerous options available for their patients.**2** There has never been a better time to provide the optimum in aesthetics, and function. The profession must hold to a higher standard, and constantly strive to learn and become more proficient within the sphere of aesthetic and functional artistry.

In the 1980’s, the advent of the conservative laminate veneer emerged, and a only select few recognized the opportunity being presented to them. Today, the laminate veneer is a much more conventional alternative within the contemporary dental practice. For years, the **Golden Proportion** was a benchmark, a standard, when designing a patient’s smile.**7**

Mathematical theorems have been used for years to define the Golden Proportion and “Golden Percentage”.**7** These theorems were proposed to determine “ideal” mesio-distal width of teeth. When this concept was theorized, it was based on the perceptible size of the teeth when viewed from the straight, anterior position. As defined by the Golden Proportion, a ratio of 1 is given to the lateral incisor with regard to mesio-distal width. The central incisors will then have a 1.616 ratio, and the canines will have a .618 ratio when compared to the lateral incisors. As a result, the perceived “ideal” is often too rigid visually for today’s dentistry.**4** With contemporary materials, techniques, and philosophies, we are now able to evolve beyond the **Golden Proportion** and move to the next tier in contemporary aesthetics, or what I prefer to call, **The Platinum Paradigm**↪.

The Platinum Paradigm↪ focuses on a set of guidelines, or parameters, that make up a system ensuring Aesthetic Excellence.**1** As clinicians, we must strive to emulate nature, and create restorations that “trick” the eye in believing that what you are seeing is naturally born. With materials such as IPS Empress® (Ivoclar North America Amhurst, NY), Authentic↪ (Microstar Corporation®

Lawrenceville, Georgia) and d.Sign® (**Ivoclar North America Amhurst, NY**), the dentist and ceramist are now able to provide for the patient the optimum in aesthetics. Although the materials used is very important, the ability of the ceramist to provide beautiful ceramics is as essential as the materials used. As *Aesthetic Artists* we must make every effort to attain the most current concepts, and take our own abilities to an elevated level.....a *Platinum level*. All illustrations within this article are fabricated with all ceramic restorations. **10** It is important to note that although all of the illustrations in this article are fabricated with all porcelain restorations, all parameters of the Platinum Paradigm may also be applied to direct composite restorations, crowns, and/or porcelain fused to metal restorations.

It is imperative to consider when presented with a patient in need of aesthetic or functional enhancement, the treating doctor must adhere to strict treatment planning protocols. Pre-existing conditions, wear patterns, para-functional activity, function, aesthetic expectations, phonetics, and a thorough understanding of the masticatory system is essential to be able to properly treatment plan, and provide long term results for the patient. With regard to treatment planning, the Platinum Paradigm is designed to aid the clinician and ceramist in providing certain ideals with regard to gingival heights, zenith, inter-dental contacts, axial inclinations, facial planes, and anatomy⁶. On the contrary, dimensions of teeth, with regard to mesio-distal widths and tooth lengths can, and should, vary from patient to patient.

When dealing with such smile variation, excellent laboratory communication is paramount to the success of the case and the expectations of the patient and clinician³ A detailed laboratory prescription is crucial to verbalize your intentions to your ceramist. An open line of communication will decide the success, or failure, of the end result.

Within the first aspect of *The Platinum Paradigm*⁶ the basic tooth proportions must be considered, but not absolutely adhered. To clarify, the *Golden Proportion* is an excellent point of origin, but often there will be a superior aesthetic result if the tooth proportions actually extend outside, or inside, of the *Golden Proportion*. Notice the central incisors (*Figure 1*) are slightly outside of the proportion, but transitions beautifully with the overall harmony of the smile. Contour of the gingival tissue is

paramount in establishing consistency between the surrounding tissues encompassing the smile.⁵ Stunning restorations add the final touch to an exquisite smile, but nicely contoured gingival tissue acts as a picturesque frame surrounding a magnificent painting. The properly placed gingival zenith will add the proper symmetry to the entire soft tissue system (**Figure 1**). The zenith should be placed at mid to distal of the tooth on the centrals and laterals and distal of center on the canines.

Golden Proportions, Platinum Proportions, and natural characteristics are all essential to yield an end result that is favorable to the patient, ceramist, and clinician. There should be no rigid standard with which restorations are measured for all patients, but rather, a varied characterization for defining proper dimensions and characteristics unique for each individual case and smile crafted. The scope of this article will explore those variations that may be found within nature, and guide the clinician and patient in choosing the most favorable smile, and a detailed interpretation of that smile to be created.

Although there are many standards that can be attributed to creating a smile, there is a tremendous amount that clinicians can control with regard to artistic variation, and diversity, if one so chooses. This aspect will be discussed in the second half of this article. The era of monochromatic, perfectly straight, contrived smiles is now behind us. The next level of aesthetic excellence is within our grasp, if the door is simply opened.

To begin, the gingival height must be in proportion (**Figure 2, Horizontal Blue Lines**) to maintain symmetry throughout the smile. The canines and centrals should be generally the same height with the lateral incisor height positioned approximately .5-1.0 mm incisally from the canines and centrals as indicated by the horizontal blue lines. The height, and width, of the inter-dental contact areas play an important role illustrating the desired maturity of the teeth. The more youthful the teeth, the more apically positioned the inter-dental contact. In contrast, the more incisal positioning of the inter-dental contact, the more mature the teeth will appear.¹ This is essential when determining how youthful or mature you desire to make the patient's smile. The positions of the interdental contacts determine the size of the incisal embrasures between the teeth.

The gingival embrasures (**Figure 3**) must have a seamless transition of the laminate veneer to maintain a healthy state, and good gingival architecture. Maintaining healthy provisionals, that don't impinge on the inter-dental papilla, and properly contoured veneers, will ensure the gingival apparatus is maintained. So often the papilla is infringed upon during the provisional fabrication, thus creating potential "black triangles" that will negatively affect the aesthetic outcome. This is a critical element that cannot be overlooked. This is key oversight even witnessed with "Aesthetic Gurus" in their presentations.

The "Reflective Zone" (**Figure 3, Blue Zone**) is indicated as the flat, facial surface of the tooth. This area reflects light back to the eye and has very little deflective surface, other than facial anatomy variation. The "Deflective Zone" (**Figure 3, Red Zone**) is important in maintaining detailed anatomy and the natural contour of the tooth. This zone will tend to deflect light laterally, upward, or downward, giving the teeth vitality and depth. The subtle transition from the reflective to deflective zones must sustain a natural transition to avoid the "picket fence", or a less than authentic look. Depending on the level of texture within a tooth, the deflective zones will possess reflective areas. This also holds true with the reflective zones as well. This will often be why teeth may look different depending on the viewing angle of the tooth or smile.

The "value" of the tooth is crucial to the design of the teeth restored. There is a tendency today to have extremely high value restorations, with the natural shade of teeth typically having a lower value.¹¹ The **Ivoclar-Vivident Chromoscope Shade Guide** can be utilized to ascertain the best shade for the patient. Natural ranges fall within the Bleach Shade 040(B1) to the 140(A3) (**Figure 3**). In the referenced illustration (**Figure 3**), a 110 (A1) was selected, with a natural warming in the gingival 1/3 of the teeth. Unfortunately, many patients and clinicians are demanding shades that fall within the Bleach 010 to the 030 (All of which are below B1 Shading). Although we may rarely see such high values on natural teeth, it seems to be a fashionable trend, but rather unrealistic. A Master Ceramist is able to expertly utilize polychromatic shading, creating a beautiful range, and depth of color.⁹ Monochromatic restorations are

the surest way to tip off the common observer as to the lack of authenticity of the restored smile, and should be avoided.

Facial anatomy (**Figure 4**) is another very vital aspect of natural contours. This will properly deflect light within the deflective and reflective zones. The final facet within the **Platinum Paradigm** involves the three planes of reduction. The three essential planes of reduction include: The cervical 1/3, Mid-body (middle 1/3), and Incisal 1/3 of the teeth (**Figure 5, Blue Lines**). Most often, the cervical 1/3 and the mid-body are reduced by the clinician, but the Incisal 1/3 is often under-prepared, or under-reduced (**Figure 5, Yellow Line**). When the Incisal 1/3 of the tooth is not reduced adequately, the final restorations will often appear oversized, flared, or overly prominent. This is one of the most imperative aspects to consider for the dentist, and the ceramists. It is the responsibility of both, to insure the success of the case throughout all phases of treatment. As far as mesial and distal reduction, the enamel should be reduced as conservatively as possible. If reduction can be achieved without breaking the inter-proximal contact, then that is desirable. Often contact must be broken to maintain proper contour and aesthetics or if mesial-distal width is to be increased.

The cervical to incisal length of the teeth is also an important consideration. If the length of the teeth is excessive, then the patient may have difficulty with the letter "F". Patients that have their teeth positioned too far facially, or lingually, may also have difficulty forming the letter "S". Anterior interferences can also affect the occlusion if the teeth are excessively short, or long. Length, width, and reduction of enamel must all be considered expertly when considering aesthetics, phonetics, and occlusion and should be determined at the treatment plan stage.

The above mentioned parameters depict a somewhat "ideal" representation of teeth and soft tissue. This will often meet the need, and desires, of the clinician and patient.

There is a more advanced aspect of the **Platinum Paradigm**, that dwells within the variability that can be depicted within a given smile. There is a unique distinctiveness that can be added to each of the teeth that does NOT fall within the "Ideal" and "Perfect" of natural teeth..

To help in defining these smile variations, the following illustrations were selected from the publication, "**Platinum Paradigm**, **Visual Smile Creations**" to demonstrate variations that be achieved when designing a smile for your patients. This publication depicts nine variations within smile design. In addition, the publication illustrates the important areas of translucency, coloration, texture, enamel variation, and customization to aid the dentist, patient, and ceramist during the treatment plan phase. Its purpose is to assist the doctor and patient to better understand one another's desires and expectations, and reduce the possibility of miscommunication. The publication will also aid the ceramist in their communication endeavor with the dentist. **Three** of **nine** smiles from the publication will be briefly discussed and analyzed. The selections of cases illustrated in this article are the more fanatical examples within this publication.

As mentioned earlier, texture of the facial surface of a tooth plays an important role with respect to the reflective and deflective zones of a tooth. Light Texture (**Figure 6**) demarcates the reflective and deflective zones. This surface will often be used for more mature patients.

Heavy Texture (**Figure 7**) will possess multiple variations of reflective and deflective zones and is often reserved for youthful patients or patients wanting a more youthful look, or smile.

An essential aspect of the **Platinum Paradigm** is that of enamel translucency, and discrepancies within the enamel surface. To add to the inclusions that are found on natural teeth, additional information must be provided to the laboratory to thoroughly communicate any specific enamel characteristics desired. Enamel translucency can range from 0 mm to over 2 mm in natural teeth. The range can vary based on age of the patient, opacity of the dentin and enamel, and individual needs and desires. One example of minimal translucency is illustrated (**Figure 8**) showing less than 1 mm of incisal translucency. In the second example, (**Figure 9**) the amount of translucency is increased to that of 2 mm of translucency. There are vast differences between the two samples, illustrating a wide range of characteristics and individuality.

The next three “Smile Variations” are illustrated to depict the subtle nuances that can be manipulated. It should be noted that very careful discussion with the patient and ceramist is essential for consistency in expectations. These variations should be reserved for the advanced aesthetic clinician, as line angles, rotations, asymmetry, and inclinations are all specifically and expertly placed by the dentist and ceramist.

Smile Variation #1

Simply changing the axial inclination from mesial, to distal, of the canines, accentuating the incisal embrasure of the lateral incisors, increasing the overall proportion of the central incisors, and slightly lingually positioning the mesials of the centrals will yield an aesthetic result well outside of the box, and completely different than the norm (**Figure 10, 11, and 12**).

As one will notice, these illustrations fall very much outside of the everyday contrived smile. The comfort level may not be for every clinician, but consider the natural visualization. Enhancing a patient’s smile to ideal, while maintaining a natural result, is essential.

Emphasizing the centrals in woman will bring a beautiful look and help form an attractive smile. The distalizing of the canines with respect to axial inclination adds a measure of natural characteristic and induced inconsistency within the design.

The distinctiveness of this smile will not remain within the comfort level of every clinician and/or patient, but it has been my experience that if properly explained, the patients’ are very receptive to these “less than perfect” subtleties. As aesthetic artists, we must provide for our patients, the optimum in aesthetic technology, materials, and innovative concepts.

Smile Variation #2

In this second example, the variation changes in that the #7 lateral incisor is slightly facially positioned (**Figure 15**). This too, will add to the subtleness of the inconsistent nature of modern smile design. By flaring the lateral incisor (tooth #10), the mesial embrasure will then become accentuated while the mesial embrasure of #10 will remain the same.

The distal incisal slopes of the canines have been slightly lengthened to create a slight, and intentional, wear pattern (**Figure 13**). As a final specialized characteristic for this smile, tooth #9 is slightly overlapping tooth #8 (**Figures 14 and 15**). This brings a tremendous amount of variation within the smile. This must be achieved very cautiously due to nature of over-focusing to this area, by the casual observer, if overdone. This characteristic has had a positive effect with the patients that I have treated. Offering this type of variation must be thoroughly explained to the patient.

Smile Variation #3

In the third example, variations with regard to the central incisors are the primary area of focus. The central incisors are varied greatly in that the distal aspects of teeth #8 and #9 are flared facially, on the distal half of the teeth (**Figure 16**). This adds a unique look from the lateral angle (**Figure 17**) and tends to soften the smile to a degree. The lateral incisors (**Figure 18**) depicted here illustrate a convexity on the distal angle of the tooth. This will also soften the smile, and is a feminine attribute that can enhance a woman's smile and increase the degree of natural beauty.

In addition to the rest of the teeth, the other aspect that is touched upon here is the emphasis of the central incisors once again (**Figure 16**). Upon closer inspection, one will notice that tooth #9 is slightly lingual to tooth #8. This too will add to the randomness of the smile.

This type of randomness can add a significant variation within a smile and give the patient a natural smile.

Customized individual characteristics can be added to give a very unique look to the veneer (**Figure 19**). This illustration is featured in the publication for use of the numerous characteristics available. Notice the graze lines, fracture lines, hypo-calcification marks, de-mineralized enamel, incisal wear, incisal chipping, perikymata, and fluorosis of the enamel. Rarely, would all of these characteristics be placed within a given veneer but the purpose of this illustration is for the doctor and patient to choose the desired effects for smile creation and communicate this to the laboratory.

Common characteristics I will often choose are that of the occasional enamel hypo-calcification blemishes, Incisal chipping, and facial anatomy. All of these enamel attributes can be utilized to create the smile that works best for the dentist and the patient. Personal style can be achieved with carefully placed inconsistencies within the facial characteristics of selected teeth.

The last three examples offer fairly extreme ranges within smile design, but the point is that many smiles fabricated by dentists today are appearing too contrived, and too “Perfect”, which does not imitate nature, but rather, depicts a lack of authenticity and realism.

As one can see, treatment planning with regards to smile enhancement can be as unique as the doctor’s artistic desires. As described in the beginning of this article, if more of an ideal smile is desired, and treatment planned, then simply hold to a standard that considers, not only the restorations being fabricated, but also the surrounding soft tissue. In contrast, if a very natural smile is desired, one using slight rotations of teeth, asymmetry between the left and right, and customized variation of the enamel surfaces, than this to, can result in an exceptionally beautiful smile. **8**

The success lies with how the case is treatment planned, and how the lines of communication are defined between the doctor, ceramist, and patient. Specific details must be discussed with all of the pertinent parties to achieve the level of expectations defined. **8**

The Platinum Paradigm. Many variables come into play when orchestrating a smile design. We must explore these parameters to give clinicians every opportunity to provide the very best result for their patients. If clinicians and ceramists follow these basic fundamentals, then the success of the final case will be greatly enhanced. If one feels so inclined, further manipulation of a smile may be achieved using variations of the described illustrations. Continual communication, education, and experience are essential to our endeavor of excellence, for dentists and ceramists alike. The end result will likely be a life changing transformation for the patient (***Figure 20 and Figure 21***).

Conclusion

It is important to keep our passion within dentistry alive. Constantly strive for the next level and don't settle on mediocrity. The scope of this article is to aid the clinician in maintaining nature. Smiles are not normally contrived and manipulated but often pose asymmetries, imperfections, and variation that make them beautiful. **(Figure 22 and Figure 23)**. We are now able to closely replicate nature and increase the confidence of so many people. With the innovative materials, the educated clinicians, and Master Ceramists we have available today, we have no excuse but to provide the very best for our patients.

Dentistry has evolved beyond a level seen before. With the materials, techniques, and enhanced understanding of the masticatory system, the profession is evolving at a tremendous rate, and clinicians desire more with regard to smile design, thus providing better dentistry for their patients. Multiple restorative techniques (quadrant and/or comprehensive care) are becoming more prevalent, as a result, sound understanding and development of techniques is paramount, to aid the comprehensive clinician in providing the optimum for their patient, while minimizing the stress to the dentist when performing these procedures.

Veneers have provided an excellent modality when desiring to alter one's smile and enhance a patient's look and confidence. Clinicians have available to them many exceptional teaching organizations (i.e.: Hornbrook Group, for example, is a live hands-on teaching program that takes dentists to a higher aesthetic level. www.hornbrookgroup.com for more information) enabling the "Cosmetic Dentist" to reinforce their understanding of materials and philosophies, thus laying the foundation for predictable comprehensive dentistry.

To obtain a copy of the "Platinum Paradigm, Visual Smile Creations" you may contact Dr. Smallwood at tsmallwood@qwest.net or call 480.961.7744

REFERENCES

1. Aesthetic Dentistry. *The Next Level of Aesthetic Excellence: The Platinum Paradigm*. p 8-9. Volume 1, Issue 3
2. Goldstein RE. Esthetics in Dentistry. Philadelphia: Lippincott, 1976:425-455
3. Lombardi RE. The Principles of visual perception and their clinical application to denture esthetics. *J Prosthet Dent* 1973; 29:358-382
4. Magne P, Belser U. Bonded Porcelain Restorations in the anterior dentition, A biomimetic approach. 2002; 64-66
5. Magne P, Magne M, Belser U. Natural and restorative oral esthetics. Part I: Rationale and basic strategies for successful esthetic rehabilitations. *J Esthet Dent* 1993;5:161-173
6. Magne P. Megabrasion: A conservative strategy for the anterior dentition. *Pract Periodontics Aesthet Dent* 1997; 9: 389-395
7. Preston JD. The Golden Proportion Revisited. *J Esthet Dent* 1993;5:247-251
8. Rieder CE. Use of provisional restorations to develop and achieve esthetic expectations. *Int J Periodontics Restorative Dent* 1989;9: 122-139
9. Sieber C. *Voyage: Visions in color and form*. Chicago: Quintessence, 1994
10. Smallwood TW. *Platinum Paradigm*, *Visual Smile Creations*. 2003 p 2-20.
11. Touati B, Plissart-Vanackere A. Ceramic Bonded Veneers. Toward a minimal prosthesis. *Real Clin*. 1990; 1:51-66

PRODUCT REFERENCES

Product: IPS Empress®, d.Sign®
Manufacturer. Ivoclar Vivadent®, Inc
Address: 175 Pineview Drive
Amhurst, New York 14228
Phone: 800/5-DENTAL
Fax: 800/598-4569
Product: Authentic®
Manufacturer. Microstar Corporation®
Address: 1635 Lakes Parkway, Suite J
Lawrenceville, Georgia 30043
Phone: 800/313-6427