**PROFILE**

Dr. Harold M. Shavell

**Current Occupation**
1998–Retired from Private practice, Perioprosthetic Restorative Dentistry
**Education**
DDS, University of Illinois, 1962
Dental Corps, US Army, 1962–1966
**Academic Affiliations**
Former guest lecturer, Postgraduate Departments of Continuing Dental Education, numerous US and international universities
Conducted course in Comprehensive Dentistry for 15 years, several Dental Resident Teaching Programs in Chicago area at Illinois Masonic Medical Center
**Former Professional Memberships**
Academy of Operative Dentistry
Pierre Fauchard Academy
American Academy of Occlusodontia
American Academy of Periodontology
American Prosthodontic Society
Academy of Dentistry International
American College of Dentists
International College of Dentists
**Life Memberships**
American Academy of Esthetic Dentistry
American Dental Association
Chicago Dental Society
**Former Positions Held**
Chief, Dental Clinic, US Army Hospital, Bad Kissingen, Germany
Member, attending staff, Michael Reese Medical Center, Consultant, Operative Dentistry, Illinois Masonic Medical Center
**Honors/Awards**
Odontographic Society Award for Comprehensive Dentistry, University of Illinois, 1962
One of 100 authors chosen by *Operative Dentistry Journal* [1990; 15 (3): 105–109] as having made a "highly significant contribution to the advancement of operative dentistry" during 90 years of the post–G.V. Black era
Thomas P. Hinman Medallion, 1976
John Muir Medical Film Festival Award in Dentistry, 1984
Mayor Daley and the Chicago City Council proclaim August 31,1998, as "Dr. Harold M. Shavell Day" in the City of Chicago.
**Publications**
Numerous articles in the scientific literature, and a contributor to dental textbooks
**Contributions to Dentistry**
Developed the Amalgapin Retention Technique–1963
Presented before European Academy of Gnathology and numerous European institutions in Denmark, Austria, France, Germany, Italy, Switzerland, and the Netherlands
Lectured extensively to national, state, and local dental societies throughout United States, South Africa, Canada, Mexico, Japan, Colombia, and Israel
Performed numerous local, national, and international closed-circuit television practical hands-on demonstrations in operative, crown and bridge, and perioprosthetic dentistry

# Masters of Esthetic Dentistry

## ROMANCING THE BEAUTIFUL SILVER MAIDEN: AN ALLEGORICAL LOVE STORY*

Harold M. Shavell, DDS

AMALGAM: PRIDE OR PREJUDICE? SILVER ICON OR TARNISHED IMAGE?

Given the current unprecedented media onslaught hyped to an ever-more fascinated (and gullible?), seemingly unsuspecting public—in the form of cure-all television extravaganzas such as *Extreme Makeover*, *The Swan*, *I Want a Famous Face*, and *Nip/Tuck*—is it not understandable that the average person tuning in may be swept up (ie, brainwashed) in the eye-candy illusion that if he or she does not look a certain way, people will not value what it is they really have to offer, nor will they be successful in the business world, accepted by their trendy peers, or physically attractive to the opposite sex? Doesn't this say something about the fact that there's nothing real about reality television?

Collagen and botulinum toxin injections—as well as a panoply of fashionable cosmetic innovations in the form of liposuction, mesotherapy, face lifts, face peels, blepharoplasties, rhinoplasties, tummy tucks, and butt lifts—are now being blatantly and unashamedly marketed to the public along with under-arm deodorants and a myriad of new-fangled dentaceuticals, "esthetic" dental materials, and even spa dentistry, all of which ostensibly feed directly into this media/peer-driven unrealistic body-fashion frenzy. Moreover, dentistry may even have been a precursor to this current trend as it has been in the forefront of "cosmetic dentistry" for decades, although even today there is no such officially sanctioned specialty. However, being white and bright does not make it right. . .have you considered the bite? The smile's in style, but the bite's not worthwhile, the teeth mobile, and the gums febrile? From drab to "fab," but the bite's bad?

What is going on here? Have occlusal considerations taken a permanent back seat to "pretty" teeth? Is there not indeed an estimable esthetic nuance to the occlusion? In our headlong rush to be esthetically avant-garde, or at least fashionably au courant, dentistry has consistently sought to provide popularly requested metal-free direct/indirect tooth restoratives—which perhaps all too often mindlessly placate the unschooled esthetic desires of the (ofttimes) ill-informed patient—unfortunately with little or no regard for occlusal or

*Reproduced in large part from J Esthet Dent 1993; 5:69–79.

marginal integrity. Suddenly, in this fashion-conscious and frothy milieu, along comes Dr. Karl Leinfelder with his thoughtful, provocative, incisive, point-for-point, and even exculpatory article in this journal (Volume 16, Number 1, 2004) discussing, of all things, amalgam! Thank you, Dr. Leinfelder!

Since its introduction in France (1826) and the United States (1833), amalgam has saved more teeth and has been the subject of more scientific research than all other restoratives combined. Yet even with its historical background, amalgam has unfortunately become more a casualty of archaic teaching, under-appreciation, and "cosmetic dentistry" than a casualty of science. Where else can we find such a "signature restorative"—a material that defines in colossal cipher who and what we are as operative dentists upon its final set—after which no stone or bur can effectively alter the tangible proof of morphologic skill? A simple occlusal amalgam visually displays the dentist's recondite knowledge of occlusal pleomorphism and clearly indicates his or her ability to spatially perceive and artistically replicate human dentate cuspal form.

However, it was the advent of the fast-set alloy (Dare I say "fast-buck" alloy?) that robbed us of our thoughtful, artistic, and creative innocence leaving us with an unholy fascination for thumbprint punk, funk, and junk. Sadly, the quicksilver filling became just that...a simple, quick, cheap, silver amorphous plug. Silver bashing! As dentists we have therefore suffered a collective, lingering guilt over both the apparent ease of alloy fabrication (and hence its poor remunerative value) and its visual "unsightliness"—caused, for the most part, by its generally hurried and improper execution, along with a lack of correct finite finishing procedures. Thus, amalgam's resultant tarnished image lamentably persists.

But Dr. Leinfelder's insightful article has brought reason and sanity back to amalgam operative dentistry, and with his imprimatur as an academician, I'm certain he's given thousands of conscientious dentists everywhere the stamp of approval to use alloy where and when appropriate. Since amalgam was initially introduced as the "Royal Mineral Succedaneum," and in keeping with such a distinguished ancestral heritage, I have always sportively used the term *beautiful silver maiden* when referring to amalgam, constantly seeking to nurture and polish what always should be her lustrous, glistening silvery image, thus keeping her from the debasing ignominy of wanton corrosive behavior.

As such, some time ago I wrote in *JERD* an article on this very subject. And thanks to Dr. Harald Heymann, the editorial board of *JERD*, and BC Decker Inc, that article is being re-introduced to lend another voice to Dr. Leinfelder's cogent ruminations on amalgam. Although piquant and occasionally tongue-in-cheek, "Romancing the Beautiful Silver Maiden" was a meaningful labor of love for me, and I believe the message therein is still current today with definite relevancy in ALL disciplines of dentistry—to wit, unerring attention to morphology, the allotment of sufficient time for proper task execution, as well as the absolutely essential, praiseworthy expression of individual creativity.

Structural beauty (irrespective of color or material) must *always* be a determining criterion if we ever are to achieve successful function. Our profession *demands* that we be servants of a profound nostalgia for tissue integrity, spatial orderliness, morphologic fidelity, and fluidity of form. It is our manifest imperative! A fine way to exemplify this pursuit of excellence is to refamiliarize ourselves with "a forgiving friend" that, of late, has been infelicitously "overly maligned."

*I hold every man a debtor to his profession.*
Francis Bacon

Harold M. Shavell, DDS

## THE PREFATORY

"Amalgam," the venerable Dr. Will Eames has opined, "is not a very prestigious material. It has never been considered a patrician restorative. In fact, it's rather plebian. Legion are its virtues, but it has been castigated, repudiated, and looked at incredulously. Why, mixed with saliva, it rises up in utter contempt." But, mixed with a little care and understanding, and appropriately condensed, carved (Figure 1A), and polished (Figure 1B and C), it shines, it glistens, and it survives to outlive (and outperform) its contemporaries. Decades ago the redoubtable Dr. Miles Markley stated that amalgam was *the* standard—and it is still so today. Dentists everywhere should be apprised that yesterday's news is not yet passé—and much is yet to be gleaned from this utterly fascinating material derisively referred to by some as the Barney Rubble of restoratives.

Over the years it certainly has been THE standard of comparison for all dental restorations, and cumulatively more research has been performed and reported on alloy than on all other restorative materials to date. It has served us continuously and faithfully for over 178 years!

## THE LINEAGE

Historically, since there is little accurate scientific documentation, a material used in the early 1800s in France—D'arcets Mineral Cement—could be considered the earliest dental amalgam. Exhibiting little likeness to modern day alloy, it was a mixture of bismuth, lead, tin, and mercury plasticized at 100°C (212°F) and poured directly into the cavity!

In 1818 Regnart increased the mercury in preparing this "mineral cement" and decreased the plasticizing temperature to 68°C (155°F)—resulting in a significant reduction in pain. Bell in England (1819) and Taveau in France (1826), both of whom advocated a mixture of silver and mercury as a "filling" material, are credited with introducing the first room-temperature amalgam mix. In the United States, the unscrupulous Crawcour brothers introduced amalgam in 1833 as the "Royal Mineral Succedaneum"—and the battle lines were drawn. It wasn't long before the American Society of Dental Surgeons proscribed amalgam in 1845 and initiated the first "Amalgam War."

Although it had such an inauspicious introduction to the United States and may have been the cause of the infamous Amalgam Wars that occurred soon after its introduction (warring supposedly ended in the 1850s, with subsequent skirmishes periodically breaking out in the 1920s and 1970s, the most recent of which is still going on), amalgam has nonetheless saved more teeth than any other dental restorative in the history of dentistry.

## THE INTRIGUE

Why, even when sloppily mixed, poorly condensed, and hastily imprinted with the identifying


*Figure 1.* A–C, *These restorations, while illustrating conventional or "routine" operative "repair," nevertheless exhibit the basic global concept of ideal dentistry: the utopian reintegration of lost morphotypia via biomorphomimicry. The occlusal cascading of cuspal parabolism is more a function of intelligent application of acquired knowledge and persistent personal effort than of any unusual talent.*

thumbprint of its nefarious perpetrator, this amazing material still has the integrity (if not the chutzpah) to blister and corrode at the insult—and by so doing, it has the good conscience to progressively seal its own leaky margins, thereby preventing total failure, even if it cannot present its most respectable face (Figure 2).

It is a material that is "giving" as well as "forgiving," and for all its grace under pressure, it has taken many a bum rap. . . "castigated, repudiated, and looked at incredulously. . ." but never romanced! Always the bridesmaid, but never the bride! Amalgam has always been everyone's "cheap date," ever available to be "pressed" into service at the very last critical moment or whenever the occasion called for a less costly and less glamorous "fill-in" (puns intended).

*Figure 2. Replicating human dentate form is the sine qua non of dentistry. How can we form restorations if we don't know what they ought to look like? Even so, as heedlessly as this amalgam "filling" has been "plugged" to place, and as devoid of form or function as it may be, it still has guilelessly sealed its own imprecise margins to prevent total failure (the missing morphology is illustrated in Figures 9A and B).*

## THE COURTSHIP

As a young dentist fascinated with what I saw as her more recondite qualities, I began flirting with her over 40 years ago. Shortly thereafter, I found myself having a real love affair with this little lady from Shady Lane—and it's still going on today, hardly a "quick-silver" romance, as these things are wont to be.

She's not a really demanding, highly mercurial mistress, especially since undergoing Dr. Eames's apportionment of a 1:1 ration in the late 1950s; and for the record, as far as I have been able to research the literature, she has never driven any dentist or patient insane. Quite to the contrary, it generally is she who selflessly becomes crazed when bumptiously handled and who often becomes crushed when abused with excessive force (silver bashing).

As for her alleged tainted, tawdry, disease-giving past, I say humbug! Nonsense! Multiple sclerosis? Well, perhaps—beneath large, deep-set alloys restoring grossly carious lesions or beneath extensive complex amalgams, I guess you can find multiple sclerosis of the underlying tubuli (but since this does prevent secondary bacterial invasion and does decrease her host's thermal sensitivities, we can hardly find fault). Arthritis? Well, maybe—but more in the fingers of the dentist secondary to condensing pressures than in any documented case report of any patient I've ever read about. Heart problems? Yes. It breaks my heart to see the lady battered, bruised, and mistreated. As for her behavior leaving behind a bad taste, being off-colored, and besmirching her host, I suspect we're to blame for having sloppily mixed the lady a little too much of her favorite silvery beverage. Like many of us, she may occasionally imbibe more than she can hold. But when she dries out, and when all the facts are properly condensed (Figure 3A) and arranged properly (Figure 3B), I believe you'll find no voids in her solid, sterling character (Figure 3C). In fact, extensive review of the scientific literature has not revealed any data published in refereed scientific journals to support claims that amalgam restorations have caused any adverse biologic reactions (other than extremely rare allergy to one of the amalgam components).

On the basis of current data, dental amalgams do not appear to pose a risk of kidney dysfunction, neurotoxicity, or reduced immunocompetence or pregnancy outcome—the most frequently voiced concerns (Mandel). Recent public thinking regarding dental amalgam restorations illustrates the impact that hysterical societal misinformation has unfortunately had on the way we practice dentistry. "Toxic time bomb"? Think again!

Really, all this lady ever asks for is a dry, clean, sheltered, fenced-in little place of her own (Figure 4)—free of leaks, debris, and stresses and supported in a proper, steadfast


*Figure 3.* A–C, *As well condensed as the alloy may be—mechanical (Condensaire, Teledyne-Getz) is always preferred over manual—the superficial layers are always more mercury rich and must be carved back. The subadjacent alloy (Phasealloy, Wykle Research) is void free, sculpted quite readily (Goldman-Fox li, PKT #3), and capable of receiving a high polish (Nupro Orange, Johnson & Johnson) followed by a tin oxide slurry. An alloy that isn't polished is an unfinished alloy. Notice the anatomic condensate and rhomboidal (maxillary) form.*

fashion. A little gentle stroking and evocative caressing during her most critically formative moments will surely bring out her delicate, rounded, sensuous parabolic contours (Figure 5A), which will sooner attract interested lateral glances than glancing lateral interferences. The lady would never consent to a "bump and grind" routine, which tends to age her prematurely by flattening her curves, so let us make sure we always provide her with the proper guidance she needs (Figure 5B) to always keep her looking physically attractive. Bring on the silver polish and she will luxuriate in her lustrousness and beam radiantly at you ever after from a splendidly set argentine occlusal table (Figure 5C).

## THE ROMANCE

The kind of story I want to narrate is a chimeric tale of romancing the alloy. But is it a meretricious romance of tarnished expedience (Figure 6) or a sterling romance of glittering excellence (Figure 7)? My intent is to show you how you should treat a lady, how to get her to always show you her best face. The lady certainly isn't a tramp, although for years her image has undeservedly been that of the Mary Magdalene of restorations. Occasionally, as we've seen, her image does get a bit tarnished—but more from our thoughtless neglect than any inherent hoary defect or metallurgic acne of her own.

The purpose in extolling the virtues of my romantic dalliance with the Silver Maiden is to introduce you to the theorem that every restoration (irrespective of the particular material) *must* reflect a relentless, single-minded devotion to the structural potential inherent in classic morphology—and its corollary,


*Figure 4.* A–C, *Creativity consists of rearranging what we know to find out what we do not know. It is essentially a nonverbal, intuitive, perceptive process that involves visual thinking. All the proper technique in the world cannot produce successful morphology if the element of artistic creativity is not present. Moreover, this morphology must emerge within a restricted (set) period of time. Notice that the peripheral mandibular trapezoidal outline form of the condensate mimics the preoperative circumference, by virtue of proper band contour.*

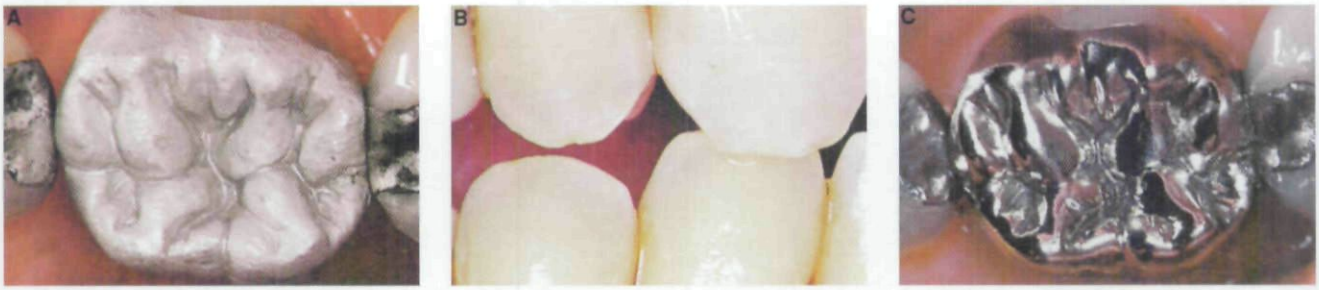


*Figure 5.* A–C, *The sensuous amalgam. A straight line is the line of man, a curved line the line of nature. This restoration has evolved by setting free the form extant within the towering edifice of rapidly hardening alloy (see Figure 4C) as previsualized in the mind's eye. To prevent ablative faceting and progressive destruction of hard-won occlusal morphology, immediate canine disclusion is essential. Form must not be allowed to be imprisoned by the malocclusion!*

that it is the direct silver alloy restoration that is the *only* restorative that acutely tests the ability of the dentist to make his or her morphologic and occlusal concepts structurally visible within a given (restricted) period of time, after which no stone or bur can realistically enhance that sculptural entity (Figure 8). In other words, *if the morphology is not there when the alloy sets, it will never be there,* no matter what instrument is used to further edit the hardened restoration/edifice. In reality, the set alloy becomes the personal signature of that dentist—frozen in time—for all to see and judge, autobiographical in colossal cipher and self-revealing in boldface type. It's your esthetic marker, your thoughts made visible, your ability to transform cognitive esthetic sense into corporeal reality.

The Class I alloy of ALL restorations is the quintessential "signature" restoration in that it is *the* prototypic occlusal from which all other restorations evolve (Figure 9). Using a histologic analogy, the Class I alloy is like a blast cell, a stem cell, mesenchymal in its pluripotency in that it should retain within itself the genetic markers (architectural form) for all opposing intercuspating restorations. The Class I alloy is the inchoate, unicellular organism that can metamorphose into a complicated, sophisticated, multicellular organism (complex amalgam restoration) given conducive environmental (occlusal) factors and the correct signature. Is your signature one of excellence or expedience? Does the lady appear to be a silver icon or a tarnished image? You must be aware that the direct silver inlay/onlay signature restoration is prima facie evidence of how we, as dentists, perceive shape and form and how we


*Figure 6.* A–C, Before: *Flat-surfaced, cumbersome, uglified "fillings," aside from being nonanatomic and promoting excessive wear, are but pathologic shapes frozen in silver (or gold or porcelain, for example). They are unworthy of the skills the modern dentist can muster. We are what we repeatedly do. In the final analysis, forming a restoration (designing an occlusion) is predicated on an intellectual conceit rather than on manual skills.* After: *See Figure 7.*


*Figure 7.* A–C, After: *Carving alloy restorations has classically involved more colic than frolic—a challenge dentistry invented for itself. As such, we dentists are licensed to perform that which in many instances we don't completely understand. In carving restorations, we must objectify the subjective and make our thoughts visible (tangible) while seeking to create form and function, as seen in these gnathologic alloys.*

express that perception psychodigitally, artistically transmitting knowledge into three dimensions. Amalgam restorative dentistry is the esthetic will of the dentist transformed into space, stylizing, abstracting, and borrowing from reality to create a type of inhabited sculpture (Figure 10).

Clearly, any restoration (whatever the material) is only as good as the eye and the mind that made it—yet the eye *cannot* see what the mind has not taught it to recognize.

Every act of seeing is also an act of judgment (Lombardi). Thus, amalgam restorative dentistry becomes a creative function of the intellect rather than an ingenuous, robotic, digital manipulation of material only. The latter results in frustrating, futile efforts to fashion ineptly shaped, morphology-shorn, uglified artificial dentate pseudoforms that can hardly be called "teeth" or "restorations" since they neither intercuspate nor restore (irrespective of the reputed superiority of the particular material used). Disastrous, dysfunctional dysmorphia! Our focus, then, must turn to the control of morphology—which, in reality, is an esthetic sense—because in dentistry, morphology (ie, esthetics) is destiny. Control the morphology and you control the case (Figures 11 and 12). One of our earliest clinical experiences (and frustrations) in controlling dentate form was with amalgam, but it was only flirtatious. We heedlessly threw the baby out with the bath water. There was no commitment. Understandable, since so many of us required this nonchalance having been similarly instructed in "carving" alloy from the same outdated manual—"The Origin of the Specious" (see Figure 2).

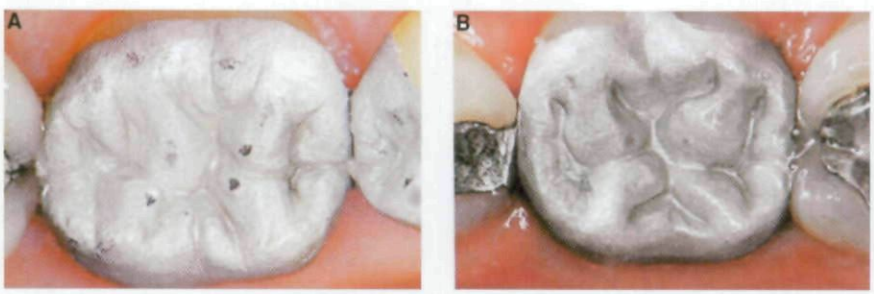


*Figure 8.* A *and* B, *Nietzsche said, "God is in the details," and Nabokov preached, "In art as in science there is no delight without the details." By understanding periodontal, anatomic, and morphologic details, we serendipitously gain an understanding of occlusion as well. (Note the tripoded occlusal markings.)*

### THE WEDDING DANCE

Controlling morphology is tantamount to power by means of forms (Figures 13 and 14). Let me explain why this fascinating dental pas de deux between form and function is so important. Since all restorative dentistry deals in the marriage of form (morphology) and function (occlusion), and since the end result of all dental form *must* be successful function, morphology is destined to assume a powerfully significant role in correct occlusion,

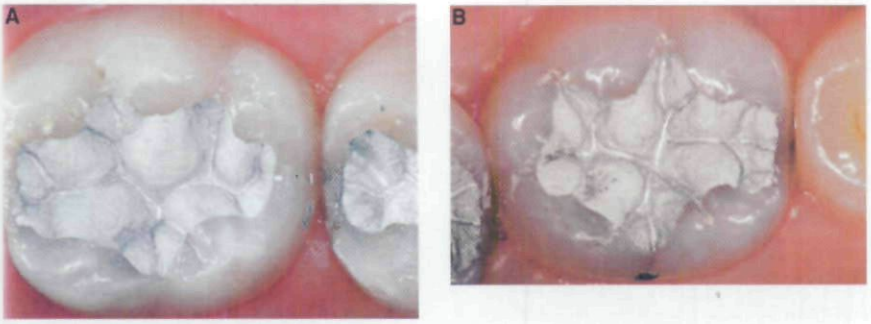

*Figure 9.* A *and* B, *The Class I progenitor restoration. The mother of all restorations. The absolute link to all other (more complex) restorations, which in effect become thematic variations of this elementally significant "signature" restoration. Notice the fluidity of the transition from natural to restorative and the well-formed cuspal parabolism. Observe the absence of any straight lines. Occlusal knowledge is expressed here.*

which is, after all, the common denominator of *all* dentistry. Sadly, however, most dentists cannot faithfully replicate human dentate form (entice the Silver Lady to show you her best face). Thus, they lack the ability (are powerless) to fashion a correct occlusion (maintain the marriage). The delicate pas de deux falters as cusps become flattened, stumbling awkwardly over one another while form and function ignominiously collide in jolting antagonism, sparking deleterious cumulative cuspal ricochet. The ingenuous choreography of what should have been a tranquil cuspal ballet (romantic wedding dance) has instead ignited total gnathic (marital) war. For want of esthetic form (morphology), an occlusion (function) may be lost.

Thus, common dental procedures, which invariably alter the occlusal surfaces of opposing teeth (and which historically have most often been accomplished in alloy), can manipulate musculoskeletal proprioception in a manner entirely unique to dentistry since the occlusion of teeth can ostensibly influence the closing pattern of the mandible. In other words, dentists can unwittingly introduce stress to the gnathic organ by virtue of the effect their restorations produce on the total craniomandibular articulation complex. This is the significance of "power by means of forms." In other words, the ordinary act of mastication ought not be a pernicious and self-destructive act as a result of insidious morphologic malfeasance. It ought not be a formless danse macabre (Figures 2, 6, and 11A).

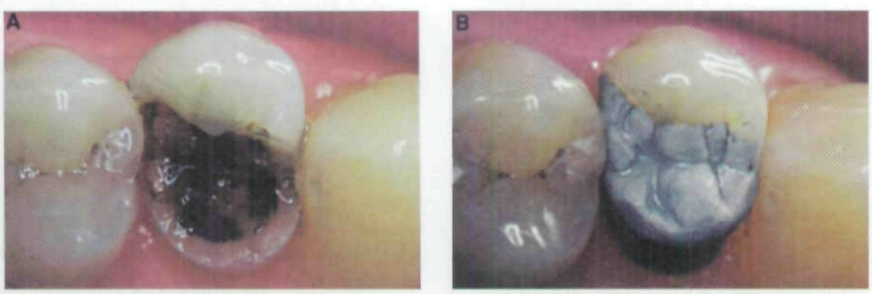

*Figure 10.* A *and* B, *Techniques are but servants to principles. The principle here is visual thinking and expressing that thinking psychodigitally, transmitting knowledge into three dimensions. Affixing the matrix band circumcoronally in an anatomically correct fashion, adjusting the cuspal and marginal ridge heights, judging buccolingual dimension, and replicating the missing occlusal morphology are examples of the mind at work. The hand is merely its facilitating appendage.*

### THE ADJUSTMENT YEARS

In reality, all restorations are carved with the mind—the hand is merely a facilitating appendage. Visual perception is (understandably) crucial to dentistry, yet visual imagery is almost totally unnecessary for existence in our society today as we no longer have any need to express ourselves pictorially or graphically. We no longer have any need to think visually as fractalized cyberspace ("virtual reality") does it for us! How, then, are we to flourish in a pixelized environment that does not require visual/spatial function, pattern perception, and fine-line discrimination? How can we form restorations if we don't know what they should look like? How long must we continue to suffer from visual nescience? As with dyslexia in language, the visual arts can suffer


*Figure 11.* A–C, *The eye does not see what the mind has not taught it to recognize. Look closely at where the preoperative mesiolingual cusp tip resides in space. As can be seen in the resulting preparation, the matrix band necessarily affixes gingivally—thereby "blooping" palatally and artificially broadening the occlusal surface. Notice in particular the compensatory distopalatal crimping of the matrix band and the canting of the palatal condensate buccally to bring the future mesiolingual cusp to correct preoperative position.*

similar afflictions—dyspictoria, dysgraphia, and dysartistica. Societal discrimination against the artistically malnourished right brain continues to exact its toll as the overfed left brain leads us to a numerically rich but polymorphically pauperized view of the world. The mind must be a more discriminating host. Its left brain needs a bouncer at the door.

A very difficult situation exists, then. As we mature, we lose our innate perceptual ability to image (or at best do not progress past the point of imagery infantilism), and in those in whom the process is intact (or even flourishes), transmitting that ability becomes a moot point. Dental artistry is the poorer for this nigrescent schism. We need more visual victuals as food for thought. To see is human; to visualize divine.

## THE ANNIVERSARY YEARS

Understandably, all the techniques, various methods, concern for the tissues, and effort will not produce an esthetic result if the element of artistic creativity is not present. It is the unquestioning acceptance of the already existing that keeps people from being creative. A relentless, single-minded pursuit of the structural potential inherent in classic morphology must be undertaken. The old canard "form follows function" is actually mere dogma until one realizes the higher truth that form and function are really one, inextricably interwoven, flawlessly fussed, and beautifully bound (Figure 15). To involuntarily imprison form within the mechanical (pixelized) contrivances born of a digital technology or to heedlessly relegate its fabrication to others (dental assistants, laboratories) without personal involvement or critical oversight is to commit

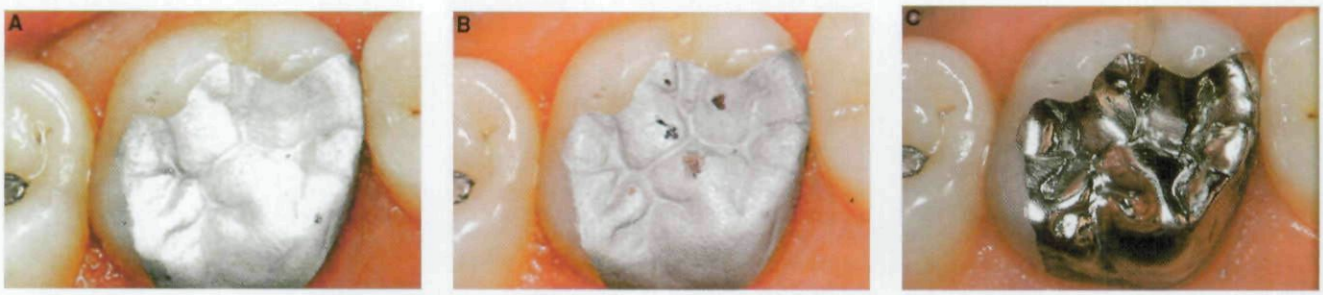


*Figure 12.* A–C, *Control the morphology and you control the case. If the efforts of operative dentistry neither intercuspate nor restore, the resulting dysmorphic dentate pseudoforms cannot rightly be called "teeth" or "restorations." Compare the mesiolingual cusp position to Figure 11A. Notice how much of the restored palatal surface is seen. Also note the tripoded occlusion—punctuate on cuspal parabolas—even after lateral movement (protective immediate disclusion).*


*Figure 13.* A–C, *The ordinary act of mastication ought not to be a self-destructive act (and it won't be) if form follows function. In this instance, the restoration is shown at the completion of carving (A) and at the 1-week follow-up illustrating optical (occlusal) truth (B). Note the pinpoint classical ABC contacts of functional occlusal tripodism and the absence of facets. The slight imposition of even the thinnest occlusal marker wantonly distorts reality (C). "Truth by artifice" would thus indicate an UNNECESSARY occlusal adjustment upon the lingual parabola of the distobuccal cusp.*

wholesale suffocation of artistry, visualization, and creativity. We have apparently lost the need or desire to express ourselves pictorially, graphically, and artistically as a cause-and-effect, hard-edged, unfanciful technical education has gained control of our minds. Imagery, drawing, and craftsmanship are no longer vital skills for survival in our technologically advanced culture. Hence, visualization in particular, that innate ability to recall and construct visual images within the mind, undergoes progressive disuse atrophy as we progress from child to adult and from generation to generation. Creative insight remains forever dormant in the kaleidoscopic (but malnourished) right brain hemisphere, whereas the computer-like left hemisphere is permitted to gorge on a numbers-rich (but pattern-poor) diet. How can dentistry flourish in an environment that lacks visual-spatial function, pattern perception, and fine-line discrimination? What happens to the art of diagnosis and treatment planning when all the recorded information cannot be conceptualized? What is the end result of treatment when there has been no visual thinking? It produces a kind of visual dyslexia in the form of dysgraphia, dysartistica, and dyspictoria. Hence, as dentists, we must learn that HOW we see is just as important as WHAT we see. The duality of the brain's function cannot be ignored.

## RETROSPECTIVE

Schopenhauer said that thoughts die the moment they are embodied by words. But if thoughts are objectified into structural reality, they

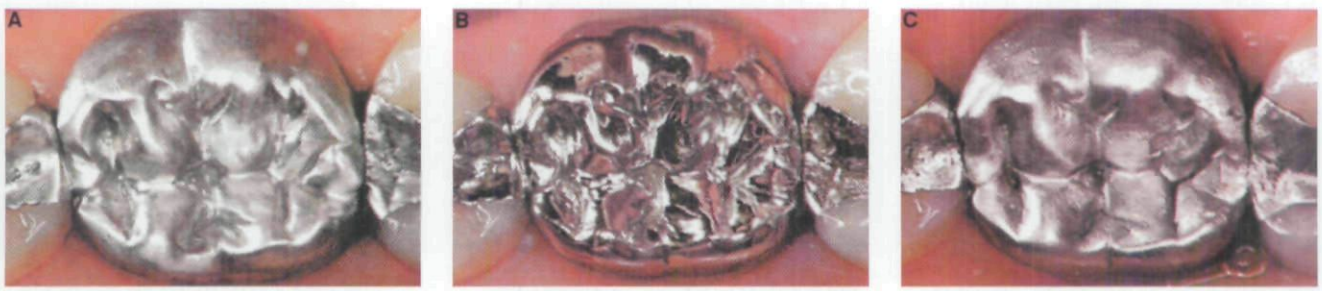


*Figure 14.* A–C, *Forming an occlusion is the combining of cuspal elements in such a way that the patient not only experiences the presence and comfort of each individual occlusal surface but also senses during harmonious function that together they total something more than their mere sum. At 1 week (A) the restoration is simply prepolished, with Nupro Orange followed by a tin oxide slurry polish (B). The patient moved his residence and was not seen thereafter for a period of 7 years; upon his return (C), resident morphology was nonetheless extant with no interim occlusal adjustments having been performed during this extended absence.*


*Figure 15.* A–C, *The complex central sulcular portion of teeth is most critical to intercuspation. As occlusion is the common denominator of all dentistry, so the Class I morphology is the common denominator of all occluding restorations. Note that the essential occlusal form on the left is similarly repeated in the other two restorations as they become more complex (B and C). Sculpting buccal, lingual, or proximal forms (while important) does not involve the same degree of difficulty as the artistic replication of the cascading occlusal parabolism of the Class I intercuspating restoration. The eye cannot see what the brain has not taught it to recognize!*

remain for all to see—and give us tangible proof of how that person thinks (or if he thinks at all). Too often students and practitioners struggle to master the craft of dentistry, believing that technical skill is an end in itself, literally the sine qua non; however, craft alone may dignify, but it cannot honor a dentist's effort with meaning and even grandeur. Instead of bringing one nearer to the end of his journey, technical mastery (important though it may be) is only the vehicle one uses to travel the path. Just as manual skill is not a primary factor in drawing (or art in general), neither is it a primary factor in learning dental anatomy, periodontal surgery, or occlusion, contrary to popular belief. Artistic rendition (in any discipline) is performed with the *mind*; the hands are mere facilitating appendages. True enough, the art of dentistry, like the arts in general, cannot be taught in any formal or structured sense, but it can be learned, which is a much different thing.

Conversely, we somehow believe that everything that can be learned can be taught, which is a huge fallacy and misconception. Excellence and creativity are arts won by motivation, training, and habituation. We are what we repeatedly do. Excellence and creativity are not isolated acts but, rather, habits of inspirational visualization prior to technical performance. Inspiration in dentistry is just as important as in poetry. Dostoyevski said, "No man or nation can exist without a sublime ideal." The restorative dentist's sublime ideal is creative excellence in operative and perioprosthetics. It must be the dentist's manifest imperative.

## EPILOGUE

Now is the time for all good dentists to chivalrously come to the aid of the languishing Silver Maiden. Resolve to take some time to acquaint yourself anew with the fascinating lady from Shady Lane. Clearly, there's still much she can teach us; rekindling an old flame can be very exhilarating. She was there for you at the beginning, and she'll be there for you at the end, I promise you. She waits patiently to reveal herself to you if you'll just give her the chance, if you'll just show her you still care. In fact, she'll always be there, anxiously awaiting your caressing stroke, ever willing to receive your deft touch as you artistically sculpt your signature for all the world to see. What was once an indecipherable scrawl can become, with a little bit of effort, graceful calligraphy. Thus is heralded the obligate rite of passage from artless neophyte to dental esthete. "The sun may be setting on the beautiful Silver Maiden, but for those who have judiciously learned her secrets, she will most forgivingly cast an approbatory nod in the direction of her neoteric successors."

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*Reprint requests: Harold M. Shavell, DDS, 1341 Wessling Drive, Northbrook, Illinois, 60062*