



Moths to a Flame

Guidelines for Emotive Dental Photography to Attract Customers, Colleagues, and Companies

Miles R. Cone DMD, MS, CDT, FACP
Cornelia Cone, MA

In this article, the authors give readers a glimpse of what they can expect at Dr. Cone's presentation scheduled for AACD Orlando 2022, titled "Exposed: The Art & Science of Emotive Dental Photography" on Friday, April 29, from 2:00 to 3:30 pm. Register at <https://aacd.com/conference>



Composition, albeit important, is meaningless without the essential element in all of dental photography—light. ”

Abstract

Dental professionals utilize photography predominantly as a means of clinical documentation. However, the artful manipulation of lighting, color, contrast, and composition in images can serve to elicit specific emotions in the viewer. When incorporating these features into dental photography, clinicians are able to create an emotional connection to attract the attention of patients, colleagues, businesses, and manufacturers. Certain visual features, techniques, and photographic principles have been found to produce images that are generally accepted to be more visually pleasing. Basic guidelines of composition and ambiance are discussed to explain why these specific photographic elements and attributes trigger human emotions.

Key Words: dental photography, emotive photography, photography guidelines, esthetic dentistry, dental marketing

Introduction

Dental photography is an esthetic, visual language that utilizes subjective properties and principles of lighting,¹ color,² contrast,³ and composition⁴ to translate tangible images into palpable emotions.⁵⁻⁷ When the human brain perceives an esthetically pleasing photograph, the neurotransmitter dopamine is released into the visual cortex and generates a sensation of pleasure.⁸⁻¹⁰ This unconscious response is the impetus that causes many dental professionals to purposefully move beyond the traditional protocols of static and inert clinical documentation to incorporate such features into their dental photography. They thereby can create an emotional connection to attract the attention of potential customers (patients), colleagues (referral sources), and partner companies (product advocates/key opinion leaders).¹¹

The subjective nature of human-centric preferences related to the beauty and emotive capacity of certain dental photographs has often proven to be a challenge to discern.¹² Despite the lack of objective rules and a universal standard for what constitutes esthetic and emotionally driven dental photography, certain visual features, techniques, and photographic principles have been found to produce images that are generally accepted to be beautiful.^{6,7} The following guidelines, while not exhaustive, provide basic principles of composition and ambiance for a select group of the most salient image features that explain why human emotions are triggered by certain photographic elements and attributes.

Guidelines

Composition

Leading lines, simplification, and Rule of Thirds: Composition refers to the intentional placement of certain visual elements within the photograph. The most visually pleasing compositional format for dental photographic images has been well established to fall within the parameters of a 4:3 or 16:9 aspect ratio (e.g., contemporary television, computer, and smartphone screens (Fig 1)).¹³ Within the portfolio of many dental photographers, commonly observed compositions include the use of parallel leading lines that guide the viewer's attention across the frame (Figs 2a & 2b); simplified, minimalistic conformations employing isolated, stark elements to create drama (Figs 3a & 3b); and a stand-alone image with the center of interest (e.g., a single macro object on a black or white background) positioned on one of four peripheral intersections within the frame. This layout aesthetic, known as the Rule of Thirds, tends to be more visually appealing than one in which the subject is situated in the center of the frame¹² (Figs 4a & 4b).

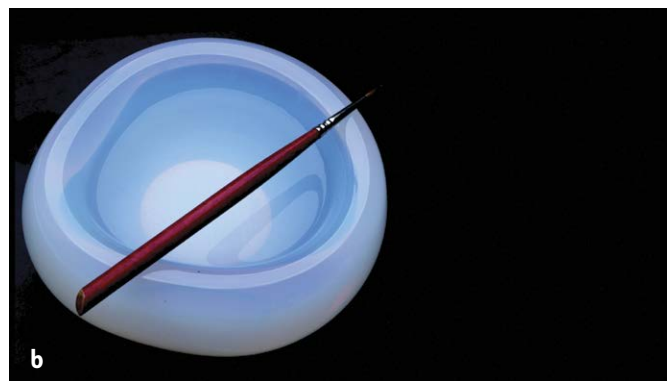
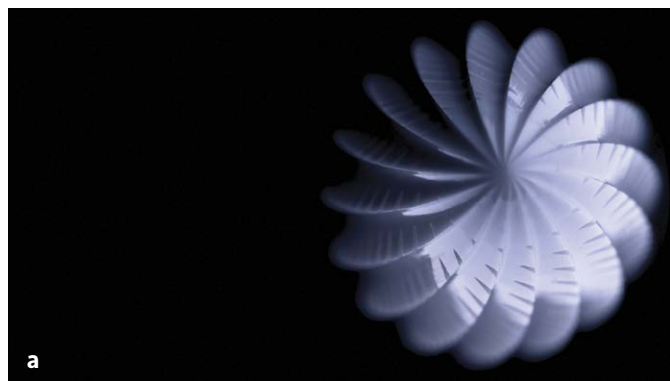
Rule of Odds and symmetry: Another compositional style that impels the eyes to move around the frame is known as the Rule of Odds. Even-numbered items are easier for the brain to recognize and process, which ultimately leads to a less dynamic image layout. Utilizing an odd number of items within the photograph, therefore, helps to create movement and drama, while at the same time creating a more interesting and esthetic image¹⁴ (Fig 5). Once we appreciate and accept that these guidelines do not represent obstinate formulas, we are presented with an excellent excuse to break the previously mentioned Rule of Thirds, which is to create symmetry. Throughout the natural world, symmetry is ubiquitous, and therefore it is not at all surprising that the human visual system has evolved to have an exquisite sensitivity to and predilection for it (Figs 6a & 6b).^{15,16}



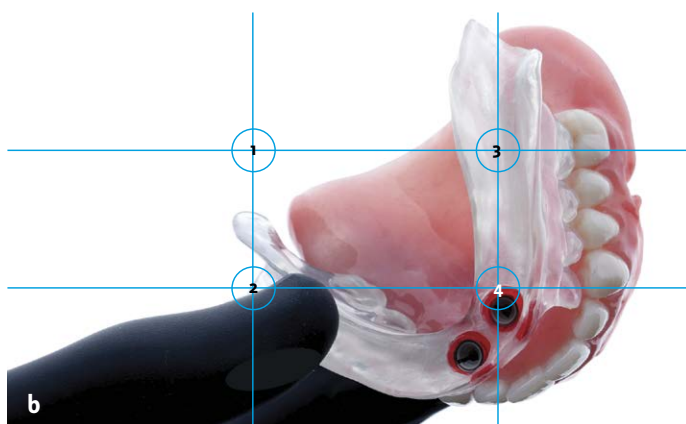
Figure 1: Visually appealing aspect ratios.



Figures 2a & 2b: Diagonal shadows create parallel leading lines that direct the viewer's attention from left to right across the image.



Figures 3a & 3b: A single subject isolated on an inky-black background creates a dramatic and minimalist aesthetic.



Figures 4a & 4b: Demonstration of the Rule of Thirds utilizing a simplified photographic composition and a monochrome white background, with the focus of the main subject placed at one of four intersected points to create visual interest.

Figure 5: The Rule of Odds creates interest by impelling the viewer's mind to actively search for comprehension among the uneven number of items present.



Figures 6a & 6b: Humans have evolved to search for and recognize symmetry within the natural world.

Ambiance

Light: Composition, albeit important, is meaningless without the essential element in all of dental photography—light. The essential elements to making photographs are not, as many believe, the camera or the lenses (Figs 7a & 7b). Without light, after all, there can be no photographs. The word *photography* is derived from the Greek words *photos* (light) and *graphos* (writing or drawing), which literally means “writing with light.” The manner in which this light is directed on three-dimensional objects within the oral cavity, or at the laboratory bench, largely dictates the overall esthetic and emotional atmosphere that the photograph conveys.¹⁷

Black and white and color: Evoking emotions even more visceral than pictures of teeth, portraits of the human face tend to be a very popular form of photography because they allow us to easily identify and relate to the subject.¹⁸ When capturing headshots, a pure white background produces a clean, ethereal, and calming effect (Fig 8). One of the most emotionally driven lighting techniques the clinician can employ, however, is the intense, side-lighting effect created with a single overhead light source for moody, darker patient portraits (Figs 9-10b). Dark lighting creates shadows, can conceal information from the viewer, and adds depth and intrigue to the final image. Aside from portrait photography, many high-end product shots and advertisements use the high-contrast juxtaposition of bright and dark regions of the image to create a sense of refinement and sophistication (Figs 11 & 12).¹⁹

Color in the environment has a deep impact on our mood and behavior²⁰; it is widely believed to be the visual experience most important to human beings.²¹ Dental photographers, however, often use monochromatic, or black and white imagery to create a separate aesthetic and an additional range of emotional content.²² Black and white photography involves a simple change in the visual presentation of a stimulus so that instead of composing with color, the clinician is forced to compose with a variety of tones and contrasts. An impactful point of focus can be made with the careful placement of a subtle pop of color in an otherwise monochromatic background (Fig 13). The utilization of black and white photography in dentistry allows the artist to emphasize features such as contours and boundary information, which is particularly useful when the photographer wants to highlight the global form or shape of an object (Figs 14 & 15).²³



Figures 7a & 7b: Proper lighting produces excellent photos taken with (a) a professional-quality lens, and (b) lower-end lens, demonstrating that high-end equipment is not always necessary to produce high-quality images.



Figure 8: A pure white background creates an ethereal feeling and a calming effect on the viewer. (Model: Marina Gray, Bar Harbor, ME)



Figure 9: A side-lighting effect creates a dark and moody image with the use of shadows.



Figures 10a & 10b: (a) Side-lighting adds depth and intrigue to patient portraits. (b) A single overhead parabolic octabox is used to create the side-lighting effect.



Figure 11: High-end product photographs commonly utilize dark light to create a sense of sophistication.

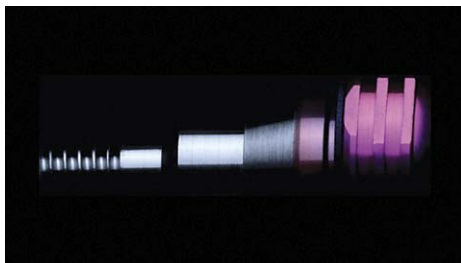


Figure 12: High-contrast areas of juxtaposed bright and dark areas add refinement to an image.



Figure 13: An area of color on an otherwise monochrome background creates strong visual interest and emotion.



Figure 14: Black and white images convey global form and shape.



Figure 15: Black and white images allow the photographer to artistically emphasize contours and boundary information.



While determining if an image has high or low emotional and esthetic value is important, it is perhaps more imperative to ascertain which attributes contribute to this value and why. ”



Figure 16: Texture adds depth and highlights tactile sensory inputs.

Texture: Another way to influence the emotional register of the viewer is to make photographs that appeal to multiple sensory inputs. Creating unique depth and dimension to each object by highlighting their texture arouses the corporeal awareness of touch and promotes a haptic dimension of visibility for the surface of the object: is it coarse, smooth, glossy, matte, cool, or warm (Figs 16-18)?²⁴

Depth of field: As already described, a minimalistic photographic composition often is preferred to pictures that have multiple subjects to distract the viewer's attention. As a final guideline, photographers may use a larger aperture setting and/or macro lenses to create a shallow depth of field. This technique further augments the streamlined aesthetic by holding a single point of focus near the center of the object, while the background blurs out of focus yet remains cohesive enough to provide context for the image as a whole (Figs 19 & 20).

Summary

Dental photography, like any profession-related skill, requires a particular set of techniques, aptitudes, and guidelines to produce emotionally driven photographs that leave a rich and strong memory with the viewer. While determining if an image has high or low emotional and esthetic value is important, it is perhaps more imperative to ascertain which attributes contribute to this value and why. Providing objective guidelines to the subjective human-centric proclivities surrounding these photographs is a challenging task, but, ultimately, the choices the clinician makes concerning composition, lighting, and subject matter say as much about the individual creating the photo as it does about the patients and products being photographed.



Figure 17: Texture arouses the sense of touch, allowing the viewer to imagine whether the subject is cool, smooth, or glossy.



Figure 18: Texture triggers the viewer's emotions and promotes a haptic dimension of visibility.



Figure 19: The use of a larger aperture creates a shallow depth of field with a specific focal point on the subject.

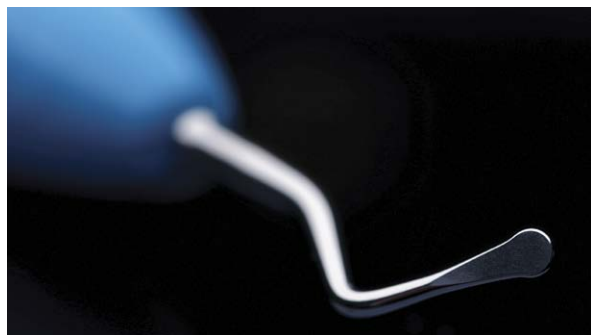


Figure 20: A blurred background creates a minimalistic aesthetic while providing enough context to remain cohesive.

References

- Freeman M. The complete guide to light and lighting in digital photography. New York: Lark Books; 2006.
- Fernandez KV, Rosen, DL. The effectiveness of information and color in the Yellow Pages advertising. *J Advertising*. 2000 Summer;29(2):61-73.
- Itten J. Design and form: the basic course and the Bauhaus and later. Revised ed. Hoboken (NJ) Wiley; 1975.
- London B, Stone J, Upton, J. Photography. London: Pearson; 2017.
- Deng Y, Loy CC, Tang, X. Image aesthetic assessment: an experimental survey. *IEEE Signal Processing Magazine*. 2017 Jul;34(4):80-106.
- Krages B. Photography: the art of composition. New York: Allworth Press; 2005.
- Datta R, Joshi D, Li J, Wang JZ. Studying aesthetics in photographic images using a computational approach. In: Leonardis A, Bischof H, Pinz A, editors. *Computer Vision-ECCV 2006. Proceedings of the 9th European Conference on Computer Vision*; 2006 May 7-13; Graz, Austria. Berlin Heidelberg: Springer-Verlag; 2006. p. 288-301.
- Kühn S, Gallinat J. The neural correlates of subjective pleasantness. *Neuroimage*. 2012 May 15;61(1):289-94.
- Chatterjee A. Prospects for a cognitive neuroscience of visual aesthetics. *Bulletin of Psychology and the Arts*. 2003;4(2):55-60.
- Greenlee MW, Tse PU. Functional neuroanatomy of the human visual system: a review of functional MRI studies. In: Lorenz B, Borruat FX, editors. *Pediatric ophthalmology, neuro-ophthalmology, genetics. Essentials in ophthalmology*. Berlin Heidelberg: Springer-Verlag; 2008.
- Cavanagh P. The artist as neuroscientist. *Nature*. 2005 Mar 16;434:301-7.
- Marchesotti L, Murray N, Perronnin F. Discovering beautiful attributes for aesthetic image analysis. *Int J Computer Vision*. 2015 Jul;113(3):246-66.
- Kaléine S, Cheam C, Izard V, Gentaz E. Adults and 5-year-old children draw rectangles and triangles around a prototype but not in the golden ratio. *Br J Psychol*. 2013 Aug;104(3):400-12.
- Van Tonder GJ, Lyons MJ. Visual perception in Japanese rock garden design. *Axiomathes*. 2005;15(3):353-71.
- Rentschler I, Jüttner M, Unzicker A, Landis T. Innate and learned components of human visual preference. *Curr Biol*. 1999 Jul;9(13):665-71.
- Wynn T. Archaeology and cognitive evolution. *Behav Brain Sci*. 2002 Jun;25(3):389-402.
- Galvane Q, Lino C, Christie M, Cozot R. Directing the photography: combining cinematic rules, indirect light controls and lighting-by-example. *Pacific Graphics 2018*. 2018 Oct 24;37(7):45-53.
- Okeit H, Blochwitz D. Neuro-aesthetics and the iconography in photography. *Psych J*. 2020 Aug;9(4):444-57.
- Block B. The visual story. Creating the visual structure of film, TV, and digital media. 2nd ed. Burlington (MA): Focal Press; Elsevier; 2008.
- Babin BJ, Hardesty DM, Suter TA. Color and shopping intentions: the intervening effect of price fairness and perceived affect. *J Bus Research*. 2003 Jul;56(7):541-51.
- Adams FM, Osgood CE. A cross-cultural study of the affective meaning of color. *J Cross Cultural Psy*. 1973 Jun 1;4(2):135-56.
- Zettl H. Sight, sound, motion: applied media aesthetics. 7th ed. Boston: Wadsworth Pub.; 2013.
- Greenleaf EA. Does everything look worse in black and white? The role of monochrome images in consumer behavior. In: Krishna A. *Sensory marketing: research on the sensuality of products*. New York: Routledge, 2009. p. 241-58.
- Jutz G. Striking textures, sensuous surfaces in photography and film. *Open Arts J*. 2019 Summer;7:11-25. **jCD**



Dr. Cone owns a private practice clinic limited to prosthetic dentistry and is co-founder of Depth of Field Dental Photography in Portland, Maine.



Ms. Cone is vice president of Nuance Dental Specialists, co-founder of Depth of Field Dental Photography, and a strategic consultant and partner with Ascendancy Health, all in Portland, Maine.