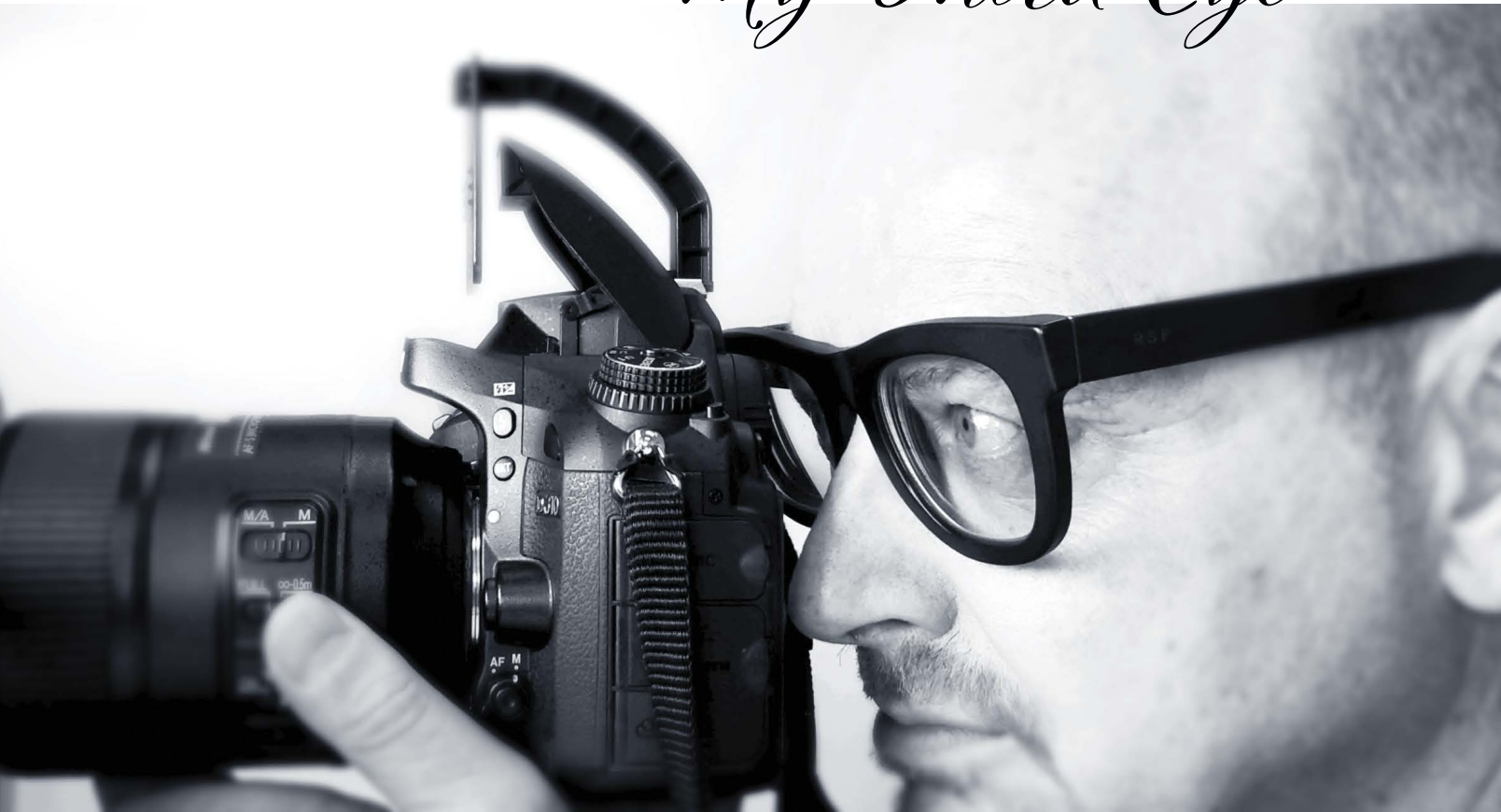


My Camera, *My “Third Eye”*



..... Pascal Magne, DMD, MSc, PhD

Abstract

Photography is an essential tool in esthetic dentistry. In this visual essay, the author emphasizes how the art and science of photography have influenced his career, inspired his work, and given him valuable insights into visual perception and esthetic analysis. The dental camera serves as an objective “third eye” for the operator throughout diagnostics, color matching, laboratory and clinical documentation, as well as fine adjustments during the final delivery of esthetic restorations. However, photography is also a tool to more closely observe nature in dentistry and beyond, as well as to express our deepest emotions for a true artistic experience. It enables us to see beyond what is possible with ordinary vision alone.

Key Words: photography, cameras, light, cross-polarization, fluorescence

“Photography is about ‘painting’ with light.”

Introduction

The fascination with photography can start at an early age; I remember my children's deep desire to grab my camera, look inside this "magic box," and attempt to take a shot when they were just 2 or 3. I was introduced during middle school to film photography and processing with a Canon AE-1 (Fig 1). It was magical to see my images begin to emerge in the darkroom. My brother, master ceramist Michel Magne, and I spent countless hours photographing virtually everything around us. When I began teaching at the University of Geneva School of Dental Medicine in 1989, the chairman, Prof. Urs Belser, required faculty to document their clinical cases with an SLR with a macro lens and macro flash system. My first dental camera was a Nikon with a 105-mm Micro-Nikkor lens and an SB-21B Macro Speedlight. In 1991, I was blessed to collaborate with master ceramist Claude Sieber on a series of cases. My work with Mr. Sieber, as well as later collaborations with Michel and our involvement with the Oral Design Group and Willi Geller, only served to reinforce my passion for my profession and for dental photography.



Figure 1: The author's first SLR camera.

I vividly remember my excitement when each batch of Kodak Ektachrome 100 slide film was sent out for processing—the anticipation and suspense until the slides arrived the next day was like waiting to open presents on Christmas morning (Fig 2). The advent of digital cameras was truly groundbreaking; my first was a Fuji Finepix S1Pro (Figs 3a & 3b). Eventually, I upgraded to the Fuji Finepix S2Pro, which I still use today and believe remains a gold standard for its ability to reproduce natural colors in dentistry.

"Photography is much more than a professional tool; it is also a medium for expression."



Figure 2: Early Ektachrome 100 slides of esthetic cases with Michel Magne.



Figures 3a & 3b: Original Fuji Finepix S1Pro digital images of cases with Michel Magne. (Figure 3a first appeared in the article "Novel Porcelain Laminate Preparation Approach Driven by a Diagnostic Mock-up" by Urs C. Belser and Pascal Magne, *Journal of Esthetic & Restorative Dentistry* ©2004. Reprinted with permission of John Wiley & Sons.)

What was Lost, What was Gained

With the advent of digital cameras, which enable immediate viewing of the captured images, the unique feelings of anticipation and surprise have been lost. However, what we have gained is what I call a "third eye," or, in other words, the ability to immediately access information that will influence our decisions and procedures. Viewing images instantly allows us to provide better treatment planning, more accurate color selection and smile design, and enhance our personal education and clinical teaching. It also enables more effective and efficient communication with patients, which increases their acceptance of and motivation for treatment. The list goes on and on; it is clear that many of the objectives of restorative dentistry are greatly facilitated by using appropriate digital photography equipment.

As the saying goes, "A picture paints a thousand words." Appropriate and effective communication between the clinician, the dental technician, and the patient is particularly significant; I call it the "triad of success," for which dental photography is an absolutely essential tool. Operatory clinicians and laboratory technicians should use the same or compatible equipment, especially in teledentistry, when the operatory and laboratory may be located in different buildings, cities, states, or countries. In this situation, when photographs are taken appropriately (e.g., utilizing the eLAB system), patients can be saved several visits to the lab.

The Crucial Importance of Light

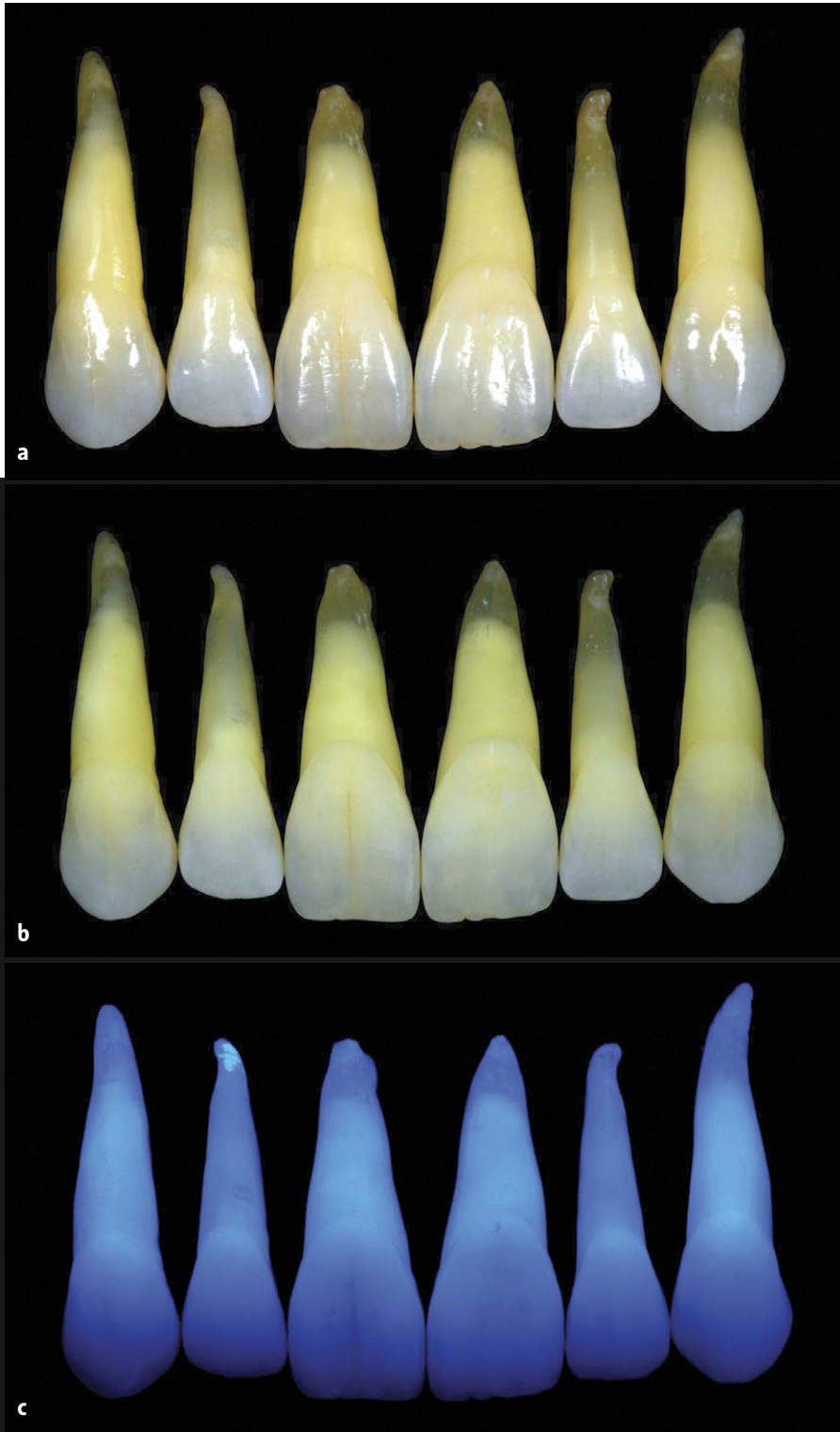
Photography is about “painting” with light (i.e., no light, no image). Therefore, the most essential component is the flash system or light source, which must be carefully chosen or adapted to the type of photos desired. Diffuse shadowless illumination is preferred for portrait and posterior intraoral photography, whereas point lights are recommended for enhancing three-dimensional details in smile and anterior intraoral images. Some flash accessories allow for light diffusion (away from the lens) or focusing (close to the lens) (Figs 4a & 4b). Cross-polarization filters, which minimize specular reflections, and fluorescence, are additional tools that provide unparalleled access to the most minute details of tooth anatomy (Figs 5a-5c).

Mirrorless Cameras

Mirrorless interchangeable lens cameras (MILCs) ushered in a new era of digital photography; I strongly recommend that every dental student and new practitioner invest in this type of extremely lightweight and easy-to-use “third eye” as soon as possible. One of my students, a research fellow, recently purchased the type of equipment shown in Figure 6. She provided me with beautiful images of extracted teeth that she had come across during her research. We imported them into PowerPoint and created an extremely artistic composition (Fig 7).



Figures 4a & 4b: Direct composite resin restorations photographed with flashes. The realistic textures were obtained with structured steps (vertical macro structure and horizontal micro texture), placing the light source and camera at a similar angle to the tooth surface.



Figurexs 5a-5c: Natural teeth under reflective (top), cross-polarized (middle), and fluorescent light. (Images courtesy of Dr. Panaghiotis Bazos, Aegion, Greece)



Figure 6: Lightweight MILC camera system with multiple reflecting devices for anterior (diffusers, sides) and posterior (close-up reflectors, center bottom) dental photography.

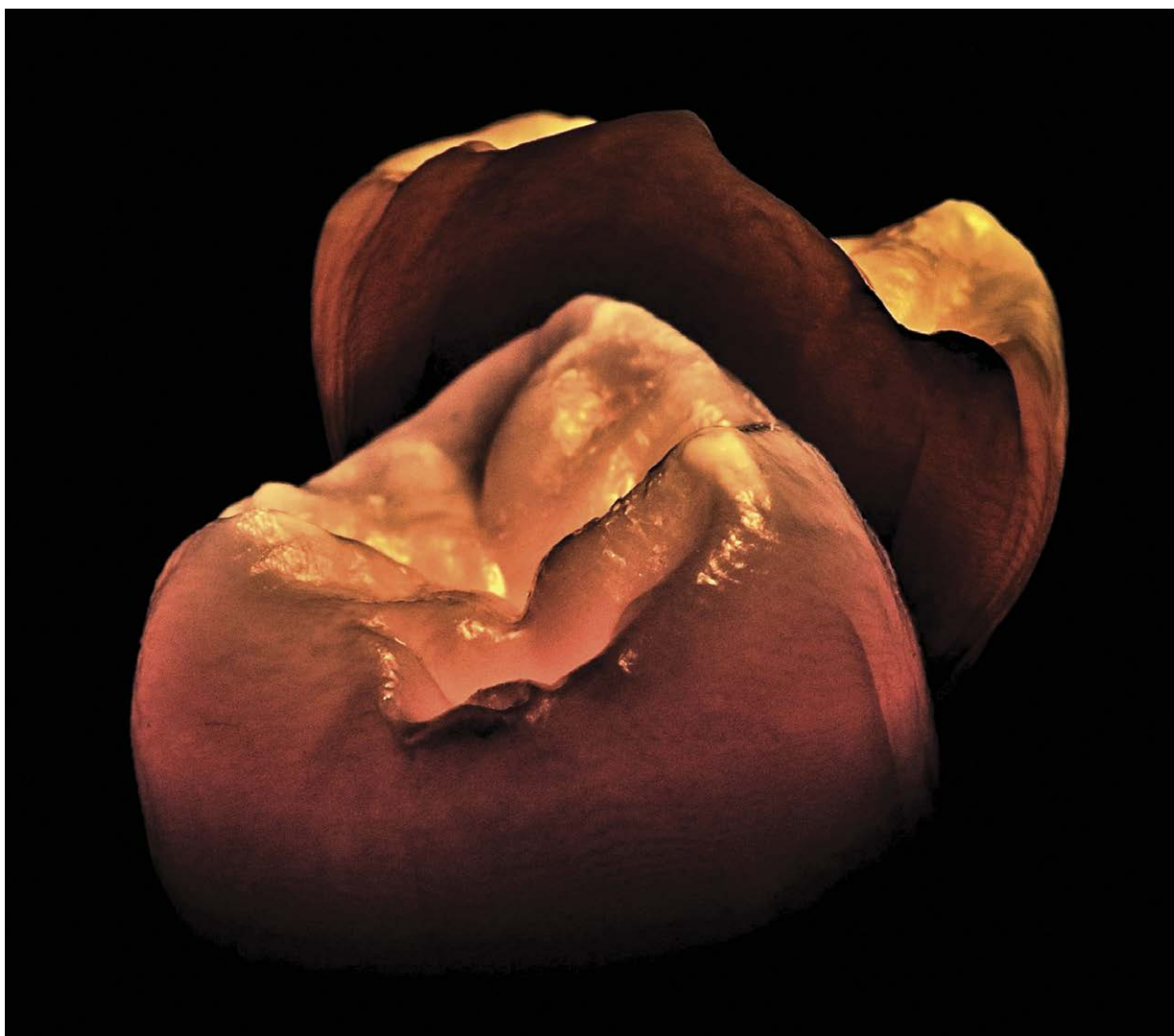


Figure 7: Extracted molars in transillumination, composition obtained in PowerPoint. (Image by Taban Milani, DDS-2023).

Personal Reflections

I believe that all the images in a series are useful because each one reveals something different about the same subject. Photography is much more than a professional tool; it is also a medium for expression. I rejoice to witness my daughter Erine's passion for photography and am proud to feel I helped to inspire it. Like many photographers, she uses it to communicate her emotions. In the photograph in **Figure 8**, which she calls *Split*, Erine shares her feelings about our world's recent pandemic and unprecedented loss of lives, jobs, and businesses. It is a stark, simple image that conveys a powerful message. We indeed live in a split world, full of uncertainties and threats, and she was able to convey this emotion through the eyes of a 16-year-old. I asked Erine for another picture that represents her belief and faith, and she gave me a richly textured image of a flower, which she has titled *Trace of Hope* (**Fig 9**). The same way we look at an image and get an emotion about it, "...there is a spiritual mirror that we can look into that will show us who we are. That mirror is called the word of God." (James 1:22-25).

I hope that you will find this special issue of the *JCD*, which was led by Dr. Newton Fahl, to be of great interest and value and that it will help you enhance not only your skills but also your visual perception. I cannot count the number of times I have been amazed while studying a photograph, thinking to myself, "When I was looking at this subject just with my eyes, I didn't notice this detail, this abnormal contour, this lack of balance in the composition," and so on. Thanks to the camera, my "third eye," the photographs revealed it! As we navigate through the current chaos of our world, I hope that we are all able to discover truth, hope, and beauty—perhaps through the miracles of photography. May God bless you.

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Figure 8: *Split*. (Image by Erine Magne)



Figure 9: *Trace of Hope*. (Image by Erine Magne)