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# The Relationship between Photo Retouching and Color Grading

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## ABSTRACT

This paper deals with photo retouching and color grading. It proposes a simplified workflow for both of them. It also points the commonalities and the differences, and further explore the relationship between the two, including a phenomenological point of view as well as an aesthetic point of view. It also discusses the implications of that relationship in pedagogy.

## KEYWORDS

Photography Retouching Workflow, Color Grading Workflow, Color Aesthetics, Phenomenology of the Creative Process, Pedagogy.

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## 1. Introduction

The aim of this paper is to explore the relationship between photo retouching and color grading. The idea of this paper came to life when I started to reflect on my practice as both a photo retoucher and a color grader, and trying to understand if I approached both in the same way, or if I had different modus operandi for each of them.

I am particularly interested in two aspects: (i) why do we make the decisions we make in a creative process, here in retouching a photo or in grading a film, and (ii) what are the aesthetic implications of this relationship between photo retouching and color grading.

I am speaking from the point of view of a scholar dedicated to photography and film philosophy and aesthetics, but also from the point of view of a long-term practitioner as both a photo retoucher and a color grader. The work presented here is therefore the result of a constant dialog between practice and theory.

There are many publications about the aesthetics of photography (see for instance Costello, 2018) and the aesthetics of film (my favorites are Alekan, 2001, and Storaro, 2011; see also for instance Jarvie, 2015). There are a few publications about photo retouching (most of them are mostly guides about how to use the softwares) and color grading (see for instance the excellent Haine, 2019), but they are mostly technical. And this is mostly through online tutorials that ones learns to use photo retouching or color grading softwares. There are very few publications specifically about the aesthetics of photo retouching and the aesthetics of color grading, and these topics are sometimes vaguely touched upon in books about photography aesthetics and film aesthetics, or in books about photo retouching and color grading. But in my knowledge, no one has ever explored the relationship between the two. The main aim of this paper is to touch upon this relationship.

As far as color is concerned, there are a few excellent books about the theory of color (see for instance Mollica, 2012, or Bleicher, 2012).

The outline of the paper is as follows: the first part deals with photo retouching, and tries to answer the question of why we do it in the first place. Then, a simplified workflow for photo retouching is proposed, and a discussion about aesthetic considerations follows.

A second part then deals with color grading, and proposes a simplified workflow for it, as well as a discussion about aesthetic considerations concerning it.

A third part compares the two approaches, points the commonalities as well as the differences, and also shows how the two approaches can feed each other.

And finally a conclusion wraps-up the paper.

## 2. Photography Retouching and Color

Most professional photographers nowadays use softwares from the adobe suite. One particular program, Lightroom, has been developed with the photographer workflow in mind, and offers various ways to save a lot of time in the process. Even though the topic I discuss here is not related to the use of a particular software, part of how I do things might be.

There are also numerous plug-ins that exist today, whose job is to allow a professional photographer to save time. I am very fond of Color Efex Pro (and Silver Efex Pro for Black&White photography) [1].

### 2.1. *Why do we retouch a photograph*

Let us first go back to the time before the digital revolution. You did not have that many options to control the final look of an image. You had to carefully think at the moment of taking it (see for instance the visualization technique developed by Ansel Adams in Adams, 1995). And then, the rest of it was a matter of how you developed your film, and then how you printed the chosen picture. This was all chemical, and particularly for color photography, you would generally rely on a strong collaboration with a lab. Occasionally, some photographers would do their own developing and printing jobs, particularly in Black&White photography, but that was not the norm.

Today, retouching a photo is something a photographer can do on their own much more easily. All they need is to open the raw digital file inside a software, and then push buttons and see the corresponding result. This process is non-destructive. It has become entirely part of the creative process. Because there are so many possibilities now, you end up playing with the possibilities and expanding your horizons.

So why do we retouch a photograph? We do it to improve the look of the photograph, in terms of contrast, colors, framing, final look, etc. But we also do it to try new things, to play with the possibilities of the tools we use. Photo retouching is therefore an investigative process.

### 2.2. *What is the color component of photo retouching*

In this whole process, not everything is directly related to color, though most of it has an impact on how color is perceived. For instance, changing the exposure of a picture impacts the perception of color saturation: making a picture darker tends to make us perceive it as more saturated.

The first steps of a retouching workflow often deals with brightness and contrast. And then we start playing with color. We can do several things at this point. We can check the setting of the white balance, and if we are using raw files, we can choose a different white balance even after the picture has been taken. We can also tell the software where our real whites are and let the software change the settings accordingly. This whole process, called “removing a color cast”, consists in compensating for some technical limitations of the camera we used, or the circumstances of the picture.

There is then the possibility of wanting our picture to look a bit different colorwise. For instance, if you took the picture of a sunset, and you noticed that your camera tended to bring the whole scene a bit more towards yellow than pink or orange, you can then add a tint of pink or orange to make the picture look closer to what you remember or what you intended.

### 2.3. A possible workflow for photography retouching

Let me now propose a simplified workflow for photo retouching. First of all, as mentioned earlier, I mostly use Lightroom to do my work on pictures. With Lightroom, you can import images, sort them, define all sorts of metadata, retouch them, and then export them. I will deal here only with the part of the workflow that deals with retouching pictures.

I also want to point out a very important principle in art making. There are no immutable laws. Even when you have a workflow in place, occasionally you will choose to deviate from it. Besides, this workflow is also meant to be rethought, and hopefully improved with time.

#### Photo Retouching Simplified Workflow:

- **test the auto setting:** it consists in using a button that provides automatic settings for the given picture, based on some values that the software extracts from the image. Sometimes, the resulting retouching is close enough and I continue from there, and sometimes the original picture is closer to what I want and I then start with the original picture.
- **adjust the exposure:** it is possible at this stage to modify the white balance inside the software, but I rarely do it. It is because I have usually set the white balance up before taking the picture, and therefore rarely need to change it later. But this is a possibility that is worth mentioning. Personally, I often tend to lower the exposure a bit. I have found that, most of the time, the auto button tends to set an exposure that is a bit too bright for my taste. But occasionally, I will do the opposite, increase the exposure slightly. There are no rules. It is mostly a matter of experience and taste.

- **adjust the contrast:** I tend to prefer more contrasted pictures, because that makes them more pictorial, more graphical, which is usually closer to my personal taste in term of images. For those first steps, auto, exposure, and contrast, I usually use my eyes only. Then, I rely mostly on the histogram, which is a diagram showing the repartition of the values of all the pixels of an image from black to white, and a bit on my eyes.
- **adjust the highlights and the shadows:** the idea behind those two steps is to occupy the whole range of brightness from black to white, in order to have the best possible distribution of pixels. This is not always the best option, but more often than not, it brings the image closer to a pleasing image.
- **adjust the texture, the clarity, the dehazing, and the sharpening:** these four sliders have to do with the granularity of the picture, and how it looks in terms of details. I barely change them, but often just a bit, to increase the crispiness of the picture.
- **adjust the vibrancy and the saturation:** we finally get to the color aspect of retouching pictures. I usually utilize two sliders to do it, the vibrancy slider and the saturation slider. In most cases, I increase both a bit and that gives me a richness in terms of color that I like. Occasionally, I will desaturate slightly, but only for very particular photos.
- **use the color efex pro plug-in:** I will then open the picture in color efex pro, and will play with some of the possibilities of this plug-in to enhance the picture. It is important to notice that part of the settings that I use prior to opening the color efex pro plug-in are decided with the use of the plug-in in mind. From experience, I know how to prepare an image before running the plug-in. If I was not planning on using the plug-in at all, I would make different choices. Once in the plug-in, I have many options. Some of them have to do with some creative techniques effecting contrast, other effecting color, and so on. Some of the looks are also mimicking some vintage looks.

### 2.4. Aesthetics considerations for photography retouching

I often wonder why I make the choices I make, or why photographers in general make the choices they make, in particular regarding color. One way to answer that question is by saying that a photographer remembers the scene he took a picture of, and consciously or subconsciously tries to match the picture and the memory of that scene.

A perfect example of that is when taking a picture of a sunset. The captured picture will always deviate from what

was really in front of our eyes. And the temptation would be to correct the picture later, to make it as close as possible to what we remember.

But that would be forgetting that a picture is only a representation of reality. The truth is much more complex. When I retouch a picture colorwise, I try find the color treatment that would serve that particular picture best, that would enhance the power of evocation of that picture.

Concretely, there is a part of habit in the process. We tend to do things the way we are used to doing them. But how did we come up with this way of doing? This process is usually incremental. We first learn to do it through practice, on the one hand, and from learning, on the other hand. We can learn from someone, from a book, from an online course or tutorial. All these activities build up our artistic sensitivity, which is also ever evolving.

Then, once we have a basic workflow, we keep experimenting, and we keep learning from courses, books, tutorials. That process will constantly open perspectives,

suggest other ways to do it, sometimes better ways, sometimes not. But as we gain knowledge about the process, be it in practice or by learning, we expand our horizons and the possibilities.

At the same time, we develop a way to adapt to a particular photo our own way of doing things, our own style. Maybe we try to match aesthetics we love, from photographers we admire. Maybe we are also trying to match other media, like painting or film.

In the end, there is something subtle guiding us in this quest for beauty, for the most aesthetically satisfying picture. It has to do with what motivated us to take the picture in the first place, what we want to express through that picture, something that has to do with some universal truth, but seen through the prism of our own experience and our own peculiarities.

Figure 1 is an example of a photograph before retouching (left) and after retouching (right).



*Fig. 1. The image on the left is the raw picture, as taken with the camera. The image on the right is a possible version of the picture after retouching it. This picture is part of the series "Calanques".*

### **3. Color Grading and Color**

Let us move on to color grading. I got involved in it quite naturally. Because I had done a lot of photo retouching. Because I was making films. And because it made sense to me to do my own color grading on my film projects. And then I started doing it for other people.

#### **3.1. Why do we grade films**

There is a slightly different reason why we grade films, compared to photo retouching. In color grading, there is an important motivation which is to save shots. There are situations when the images recorded by the cinematographer present some technical problems (low

light, important color cast, etc.). One of the goals of color grading is then to save the shot, that is, to bring it to a place where it can be used in the film without disrupting the flow of the storytelling.

The rest of the job pretty much resembles that of a photo retoucher, with one big difference: we are now working on moving images, that is, we are not just retouching one still image, or a series of a few images, but 24 or 25 or 30 images per seconds, from the beginning of a clip to the end of a clip, clip after clip, from the beginning of the film to the end of the film. This work is comparatively huge in terms of involvement and time, and there are also considerations about the unity of a shot, of a sequence, of a film.

### **3.2. What is the color component of color grading**

As with photo retouching, the whole process of color grading does not have to do with color, although it can be argued that everything a color grader does impact color perception. But there are mostly two operations that directly have to do with color.

The first one consists in removing a color cast, that is, identifying what is supposed to be white and trying to bring those particular pixels back to white. It can also be done by using some particular scopes, called parade, which display the repartition of luminosity for each of the three sensors (red, green blue), and often allows to detect discrepancies between them, thus indicating a possible color cast.

The second one concerns finding the look of a clip, a sequence, or an entire film. This often includes considerations on whether the mood of that particular clip, sequence, or film should be colder or warmer.

### **3.3. A possible workflow for color grading**

Let me now propose a simplified workflow for color grading. The software I am using is Davinci Resolve, which has imposed itself as the professional tool for color grading. It was first developed only as a color grading tool. Now, Davinci Resolve is an entire post-production suite. The workflow I propose here is not specific to Davinci Resolve though.

Also, as I stated previously for photo retouching, a workflow is a guideline. But there is no law preventing to occasionally deviate from that workflow. And a workflow is also here to be continuously improved.

#### Color Grading Simplified Workflow:

- **brightness / contrast / highlights / shadows:** for color grading, I prefer using curves, which is a tool I rarely use for photo retouching. The reason why I like curves in color grading is that it allows me to do several operations

all at once, while using at the same time my eyes and the scopes. With some experience, it takes only a few seconds to correct the brightness / contrast / highlights / shadows of a clip all at once. To use the curves tool, I usually set up a point close to white and then move it until I get the expected result. And then I set a point close to black and do the same thing.

- **removing a color cast:** I use again the curves tool to do it, but this time, I use it color by color (red, green, blue). I will mostly use the scopes as a guideline, but I also keep an eye on the image itself.
- **secondary correction:** the first two steps are called primary correction, meaning they are applied to the whole image. A secondary correction is a correction that is only applied to a part of the image, for instance a face. It requires the use of a mask, and then tracking of the mask across the whole clip. This is used only when necessary as it is very time consuming to set it up and adjust it. This is due to the fact that you often have to check the mask frame by frame, and adjust it when it deviates from where it is supposed to be set up, which often happens when the object that is tracked, for instance a face, is moving fast in the shot. It is often used to lighten or darken an area of an image, to make it more or less present. It is also used to adjust a color, for instance a skin color.
- **adjusting between clips and sequences:** this step consists in adjusting consecutive clips and/or sequences in order to smoothen the experience of the viewer. Sometimes, the opposite effect is sought after: increase the transition effect between one clip and another, or between one sequence and another.
- **working on the look of a clip / sequence / film:** the last step consists in working on the look of a clip, sequence, or film. This usually requires applying some additional effects on the images, often through the use of LUTs (Lookup Tables) which are preset tables allowing to apply entire looks and/or filters to clips. Color is often an important component of the look of a film. This is mostly due to the correlation between color and mood.

The last two steps can be inverted. It is sometimes possible to start working on looks before doing all the clips or sequences matching.

### **3.4. Aesthetics considerations for color grading**

Again, the question that comes to mind is: why do we, as color graders, make the choices we make? The answer here is not much different from the one I gave for photo retouching. Habit is part of it, improving a process too, and matching a particular aesthetic we like.



But there is a big difference here. Photography is usually a one-person medium. Film is a collaborative medium and the color grader is not the only person making decisions on the color grading process. The director is also involved, quite often too the director of photography, and sometimes other people too (some producers, some studio executives). It makes the process more complex, and

requires the color grader to be able to argue their choices, and also to be flexible enough to integrate the vision of other people, even when that vision contradicts their own.

Figure 2 is an example of a frame before color grading (left) and after color grading (right).



*Fig. 2. The image on the left is the frame as it was captured by the camera. The image on the right is the frame after it has been color corrected. This frame was extracted from the music video "Emmanuelle".*

#### **4. A Dialog between Photography Retouching and Color Grading**

Let us now investigate on the relationship between photo retouching and color grading. This is rarely done because it is not so common to find people who do both. I happen to do both, and I have consistently and often written accounts of my work as both. This led me to think that a good color grader has to be a good photo retoucher (the opposite is not necessarily needed). It is due to the fact that the building blocks of working on the look of a film is to work on the look of images.

Writing consistently on my work as both a photo retoucher and a color grader also led me to see a dialog between the two, pointing the similarities as well as the differences, and developing an understanding about the tight relationship between the two, and how they could mutually influence each other. This, of course, also has important implications from a pedagogical point of view.

##### **4.1. Similarities between photography retouching and color grading**

As you probably noticed, there are similarities in the workflows I presented for photo retouching and color grading. In both cases, we deal with the same first three steps: correcting brightness and contrast, correcting color, and applying a look.

Another similarity has to do with the kinds of tools we find in the softwares that we use to do these jobs. Even though color grading has a few additional tools, the tools we use for the first three steps are very similar. There are sliders, curves, and scopes (mostly a histogram for photo retouching).

Finally, aesthetic considerations about what makes an image beautiful and/or meaningful and/or impactful are also very similar.

##### **4.2. Differences between photography retouching and color grading**

Let us now investigate about the major differences between the two. The first major difference has to do with the nature of the medium. Because a film is a rapid succession of still images, there are important additional considerations to take into account when color grading.

First, at the very basic level, we color grade a clip and not a still image. It means we have to select the referent image carefully, if we want the correction to translate in a satisfying way to the other frames of the clip.

It also requires to test the correction we made on the referent image across the whole clip, by watching it entirely to see if there is anything else to adjust. This is particularly difficult when the nature of the material is changing

drastically across the clip, as is the case for a long sequence shot.

In that particular case, it is often possible to have dynamic settings of some color grading parameters, that is, to have some parameters that can vary during the shot according to what happens in the shot.

We also mentioned earlier what is called a secondary correction. Of course, it is not uncommon to correct only part of a photograph when we retouch it. But with film, we are also concerned with tracking, that is, with the fact that this secondary correction has to be applied along a clip and not just to a still image, and to the right area of the image, frame after frame.

There is also the question of clips matching, which does not exist in photo retouching, except when we work with serial photography. When matching clips, it is not just the aesthetics of a still image that we are after, but also the aesthetics of an entire sequence. And that requires different analytical skills and aesthetic knowledge. This is equally true when matching the sequences of a film to give its visual unity to a film.

#### **4.3. *The relationship between photography retouching and color grading***

I would like to expand the previous discussion about similarities and differences between photo retouching and color grading by exploring the relationship between the two a bit further.

Because the nature of the medium is not the same (still images versus moving images) and because the nature of the work is different (solitary work versus collaborative work), it is not uncommon to make some discoveries in one medium and then translating that discovery (when possible) to the other one. Some of my work as a photo retoucher has deeply influenced some of my work as a color grader, and vice versa.

Because the workflow is not entirely the same, and because the tools are not entirely the same, discoveries concerning aesthetics and also the use of tools and the workflow can happen indifferently in one medium or the other. This is also why a photographer can be influenced by a filmmaker and a filmmaker can be influenced by a photographer.

But this relationship goes much deeper. And this is something that is harder to explain since it is mostly phenomenological, that is, based on a lived experience [2]. It is a bit as if those two things were only one thing for me and, as I work on a photo, I mobilize knowledge from both the photo and the film worlds, and from both my experiences as a photo retoucher and a color grader. It is the same when I work on a film as a color grader. This is

also the reason why I keep learning about photography to feed my film work, and why I keep learning about film to feed my photo work.

#### **4.4. *Pedagogical implications of the relationship between photography retouching and color grading***

There are important implications of that relationship between photo retouching and color grading in the area of pedagogy.

I always have students of color grading work on photo retouching first, and I encourage them to keep doing so all over their career. First, because the problem of photo retouching is a simpler one than the problem of color grading, and a building block for it. But also because the questions you ask yourself as a photo retoucher, consciously or unconsciously, can inform to great lengths the questions you ask yourself as a color grader.

I also suggest to students of photography who are particularly interested and fluent in photo retouching to look into color grading as a career, or at least as a strong interest of theirs. This is due to the fact that working as a color grader can inform back on your process as a photo retoucher, and make you a better photo retoucher.

In those two cases, I am not only talking about the tools, and how you can discover various uses of them when going back and forth between photo retouching and color grading. I am also speaking about aesthetics, and the various parameters and aspects that contribute to all the decisions we make while photo retouching or color grading.

Those operations are very complex, and it takes a lot of times to refine the artistry. Any input that can help refine it is always welcome. And working in photo retouching can definitely help refine the artistry of color grading. And the same is true the other way around.

## **5. Conclusion**

In this paper, I have dealt with photo retouching and color grading. I have questioned why we were doing it in the first place. I have then offered a simplified workflow for both.

I have also discussed the commonalities and the differences between the two, exploring the tight relationship they had with each other. I have also explored some implications of that relationship in pedagogy.

The next steps of this research would be to expand even further on the relationship between the two, as well as to develop further the implications for practice and pedagogy. In particular, it could be really interesting to give some more detailed accounts of a phenomenology of photo retouching



and color grading, and see where the creative processes in both activities intersect and diverge.

## 6. Conflict of interest declaration

The author declares that nothing affected their objectivity or independence and original work. Therefore, no conflict of interest exists.

## 7. Funding source declaration

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## 8. Short biography of the author

**Ivan Magrin-Chagnolleau** is an artist philosopher who has been involved in art making as well as academic research and teaching for most of his life. He is affiliated with the CNRS in France, and currently works with the PRISM Laboratory in Marseille, a joint-lab between CNRS and Aix-Marseille University investigating on the relationships between art and science. He is also affiliated with Chapman University in California. His interests include: the creative process and its phenomenological dimension, art and philosophy, aesthetics, artificial intelligence and creativity, art and spirituality.

## Notes

[1] I owe the discovery of that plug-in to Rick Sammon (2016).

[2] For the readers who are interested in learning more about phenomenology, you can read for instance Husserl, 1985, Husserl, 1992, or Merleau-Ponty, 1976.

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