

KEEPING PACE

A Monthly Newsletter Devoted to the Darkroom Arts

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How Do We See Color?

The perception of color.

How many times have you brought your transparency to a local lab to get a print made and were not happy with the result?

Now place yourself in a commercial lab and are making prints for an advertising executive or art director and have a similar experience. The client is not happy with the final result.

Could the trouble be too much or too little contrast? Perhaps the print is too dark or too light?

If you are making the print, and it looks great at your lab and the client comes to your lab to examine the print and is pleased with the print, then you feel exonerated.

But, if the print looks great at your lab but when it is delivered, the print somehow looks different, and the client

squawks, you know some thing is amiss.

The trouble is easy to explain to you, here in print, but impossible to explain to an irate customer. They feel that the excuse is just that, an excuse.

The difference in the viewing light used for viewing the transparency is the first place to find the error.

In the early days of my career in color printing, there was an ongoing conflict between the color lab and most of the clients. The different array of light boxes would astound you.

Some light sources were simply bare bulbs placed behind frosted glass.

The "Bill Way" viewer was a light box that contained 5 incandescent "blue" bulbs and they were controlled by two switches that turned on either three or all five of the bulbs.

Most of the Advertising agencies at one time used this light box.

Then there were homemade devices that were miles off the correct color and intensity.

Some of my customers used the open window to view their transparencies, and fluorescent tubes to view the print.

Kodak's light box was a masterpiece in mediocrity. It consisted of a 100 watt bulb, and a blue sheet of glass over sheet of flashed glass on the front surface. It was a joke. However, many of us bought the contraption.

The list of different homemade light sources were mind boggling.

Here is a sample of what I had to go through in the early days.

I would be called to an Ad agency to pick up a transparency and asked to make

a print to a specific size. I was usually told to "match the transparency." If they held the transparency out to a window, I had to be aware of what was in the background of the window. Many times it consisted of the red bricks of an adjoining building, a grey sky, much sunshine and blue sky, or anything else that may be behind the transparency. Even if the sleeve of the transparency was frosted, the color of the background would predominate the image.

When I had my early beginnings in New York, I was soon made aware of the difficulties this procedure of viewing caused. I even went to far as to have a young **Warren Condit** make a special light box for me. It consisted of three separate groups of red, green and blue light bulbs, intermingled among the entire viewing space of the box with each channel controlled by a separate rheostat. We carried this box to the clients office and placed the transparency on the viewing area, turned it on and played with the dials until the client said, "Stop. That is it." We could adjust the color balance of the light source by adjusting the three light bulbs. It worked to a degree, but it was not the perfect answer.

This box weighed over 70 lbs. and was difficult to lug around to the clients, but we thought that it would help in placing the choice and responsibility of the color balance of the project in the hands of the client. It didn't. Because this was only part of the problem. However, some clients thought that we were concerned enough about the accuracy of our work that word spread around the advertising community and our reputation was enhanced. We really tried to make a difference.

Later on, when we moved to California, one of the largest advertising agencies in the country, Foote Cone and Belding, used our lab to have a Dye Transfer print made. This was our first job in the new lab in California.

We were handed two separate transparencies. The one 8x10 transparency consisted of a bottle of Hunt's Ketchup, (Mexican style) and the other was of a bunch of red hot Jalapeno peppers that we were asked to strip in against the bottle. The strip worked out fine. At our lab, we had a mixture of daylight, incandescent and fluorescent light as our print viewing source. Our light box was a "Bill Way" viewer. We worked on the print with extreme diligence as we wanted to make an

impression on our new client. I personally delivered the print to the office of the head art director. I opened the flap that covered the mounted print and almost died right there on the spot. The red ketchup looked brown, and the entire print looked much too dark. I covered the print almost immediately, but the art director wanted to see the work. I can't print what he said, but I will leave it to your imagination. His office had windows, but they were closed with wooden shutters. The window drapes were dark brown. The overhead lighting consisted of three fluorescent fixtures with large yellowish globes around them. All of the furniture was dark brown, as was the rug. The room looked as if it could be headquarters for a men's club. I knew what was wrong, but I didn't want to try to explain and possibly lose a client. I felt like a complete amateur. I told him I would make it over, and left the agency. We worked most of the night. I made new matrices and tried to simulate the same conditions he had in his office. About three o'clock in the morning we finally produced a print that looked somewhat like what he would see in his office.

The next morning, I delivered the new print but was told that the art director was out and to show the print to his assistant.

The assistant art director had a corner office, painted all white with open windows and with the famous California sunshine streaming in. After looking at the print, he said very loudly, "What in the world is this?"

The print looked terrible in this light.

"I'll be right back." I said, grabbed the print and went back to the lab, picked up the other print and returned to the agency with both prints.

By this time I was really steamed. I was so annoyed at the ignorance of the art directors about the proper color balance and strength of the light for viewing a print, that I decided that I didn't care if I lost the account. I didn't care about anything else, except that I was right and they were wrong.

Now both art directors were in. I handed each of the men his own print in his own office. They were both pleased. I was outraged. I think I must have been heard in another State. I told them that they were unaware of the difficulties they caused me. I invited them out into the second office and showed them the first print.

They both loved it.

I didn't care. I refused to work with anyone that wasn't aware of this problem. I never solicited this group again.

In this case, it wasn't only the light source for the transparency that was the problem, but the viewing of the print and the ignorance of the problem by two individuals that were supposed to be professionals.

During the next month, I compiled a list of the various light sources for viewing both the transparency and the print and had a list of which art director had which light source setting. The list grew to over 60 names of art directors and their own viewing methods.

For instance, the Doyle Dane Bernbach Agency used a similar "Bill Way" viewer, but looked at the print in a room filled with daylight. In 30 years I think I made a print over just once for this group.

Others took a little more time to teach. This was not the way to a clients heart, but I decided to do all that I could to get the proper viewing systems.

Some clients viewed this approach as an excuse for not making a great print in the first place. I was told many times that if a print was good, it would look good anywhere. Not so.

Macbeth to the rescue.

Finally a company that had

the technical skills and knowledge necessary to make the proper light box came on to the market.

Later on, Macbeth built a print viewing booth that was painted a specific grey and used color corrected fluorescent tubes for the overhead lighting. The included transparency viewer was also a Macbeth.

Finally a system that should work, right? Not by a long shot.

Here is another anecdote. Our new lab was in San Francisco and it was quite successful. I had the town in my pocket, or so I thought.

I received a 35mm transparency from McCann Erickson Advertising. They needed a 20x24 Dye Transfer print of a happy couple just learning that their home loan was approved by Bank of America.

This was to be a major billboard image. I was trying to make this particular print a masterpiece. It had all of the imagery needed to make a great print. Sharpness, correct exposure, bright green foliage, California rooftops, smiling faces, red roses, blue skies, clouds, and so on.

The print turned out great. I delivered it personally (which was my custom) and walked confidently into the viewing room. They had the same transparency viewer and the same print viewing booth.

I felt good about this one. However when we placed the print into the viewing booth it looked as if it were almost a full stop too dark when compared to the transparency on the light box. What in the world happened?

What happened is that the fluorescent tubes were almost burned out, and the grey paint of the viewing booth had turned to a different shade.

I didn't want to lose this account so I went back and pulled a lighter version of the print and brightened the colors a bit.

The next morning, I re-delivered the print. A top notch retoucher was there. (All Dye Prints needed retouching to fill specific needs of the art director.) This time they were all happy with the print. But I couldn't control myself and blurted out, "your light system is off a mile."

To prove my point, I asked all of the people in the room to join me as I placed the print on the floor near an open window. No sunlight, but simply a mixture of daylight and whatever lighting was in the room.

It was like magic. They all felt that the first print was great. The retoucher said that he felt great in the way that I performed. I could have lost the account, but early in life I discovered that if I was knowledgeable

about something and the client was not, I had a duty to speak out.

The agency replaced the fluorescent tubes and repainted the booth and called me in for an approval.

They thanked me for pointing out the differences.

Another notch in my gun against improper lighting.

At this time in my life I produced a variable light source and it was named "the magic box" by a happy art director. Why and how did I invent this light source?

It is a simple story of necessity. I was frustrated at the times a print could have been improved by just slight change in color balance.

I received a 35mm transparency of Mack Davis, a country western singer and I was to make a 16x20 Dye Transfer so that after retouching, it could be used to produce a record album cover for CBS Records.

However, the slide was off color. The image looked grey green, probably because of improper processing.

I was asked to improve the color. This was a simple request but also a difficult one. How much color could I add to the image without it looking weird?

Back at my lab, the sidewalk outside my window had once been painted red. It had faded and had turned

pinkish. I looked at the image through the window and against this pink sidewalk. It looked great. When I made the print, I used the color balance of the faded sidewalk as my guide.

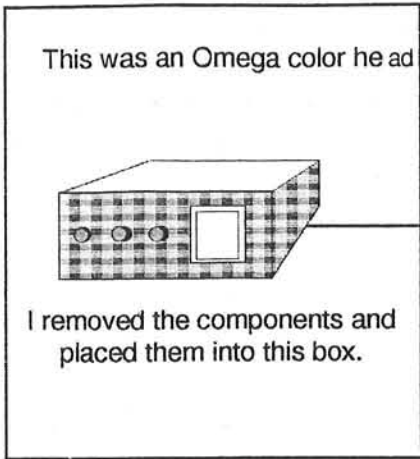
Later on, I decided to add color filters to my Macbeth light box in order to make simple improvements, but as I added too many filters the density also changed and I lost the control I was after.

I thought about a variable light source. Where could I find one?

The answer was so simple. An enlarger color head.

I purchased a small Omega color head and placed it into a box so that I could carry it around with me. Here is how it was used. I simply adjusted the color of the light source until it matched (visually) the color of a Macbeth light source. I recorded the filter positions. Then I placed a transparency on this new light source and if I felt the image needed some adjustment I could make changes by manipulating the dials until I was satisfied with the color balance and density. It worked.

I could determine the difference in filtration required to make a better image and use the new information as a logarithmic mathematical formula correction when making negatives and matrices.



One client was so impressed with this simple device that he called it "The Magic Box." Within a few weeks all of the agencies in Los Angeles knew about it.

Now I was able to manipulate the original transparency with the client looking on, and when he was happy with the new image, I made the print to match the image on the light box as closely as possible.

The amount of time this procedure saved was great.

At one time in San Francisco at the lab "Frog Prince" (where I was a partner with Haunt Rama, one of the finest printers in the country) we went through a two year period where not one set of separation negatives was made over because of miscalculation or damage and we didn't have to make any matrices over either. We had the ultimate in control over every aspect of the print process, including the color whims of an art director.

The latest issue (June /July) of Darkroom and creative Camera magazine has an article by Charles Cramer, one of the finest photographers and color printers in the country. In his article he explains an added feature to use if you are playing with your own version of a "magic box." Pick up a copy and read it. He has added an important feature to my system.

Then one day as I was reading about the color perception problems I discovered that we would all see things differently because of how we felt that particular moment.

I can remember working with a client, and using the variable "magic box" and coming to a conclusion of what the art director wanted. We had the color balance, the contrast and the emotional impact "nailed down."

Then when the print was delivered it was found that the client wasn't sure of his original choice. This happens, but not too often. Maybe his breakfast was the problem? Perhaps he had a fever?

Working by mail or messenger is a great but necessary risk. I once had the pleasure of making a 20x24 Dye Transfer print from a 35mm transparency for Botsford Advertising Agency in San Francisco when I was based

in Los Angeles. The print was for Japan Airlines.

The image was of a flight attendant in a Japanese kimono serving a gentleman seated near a window. The shot was excellent. The warmth of the scene and the light from the window made the girl's face glow and the man's image look ruddy. The impact was fine. I thought this print was so great that I made a sample print for our portfolio.

I shipped the print to the client by special messenger. The next morning I received a call and was told that the print was off a mile. This is in the days when most of the lighting systems were well known and being used by all of the major ad agencies, so I thought.

The print was much too warm, I was told.

I took the next morning's flight to San Francisco and arrived at the agency office about 8:45. The art director was not in yet. However, I was ushered into his office to wait for him and was startled to see the transparency taped to a window facing the northern part of the city. The sky was as blue as it could get. The print was on a desk under a goose-neck lamp. I turned on the lamp. It was a 60 watt household bulb. The difference between the lighting for the transparency (about 9000° K) and the print (2800°K) was as wide as it

could ever get.

When the art director arrived, he said "See how far off it is?"

I said that I didn't realize that he had such an expensive light box, took the original print and transparency and went back to L.A. and made the print over using his exact lighting system. He was happy.

Then I sent him a Macbeth light box as a gift. He was so insulted that he never used me again. This was a major mistake. I should have used more tact.

Remember what I have been saying about the creative aspects of the print maker? I believe it now, even more strongly than I did before.

However a difficult situation has occurred.

The O.J. Simpson tragedy has had its problems with a magazine cover.

Apparently, the original image mug shot was photographed on color negative by the Police dept. and a reasonable straight type C print image was given to the press and various magazines. One magazine decided to do some creative imagery.

After working with a workstation system, they made O.J. look quite sinister. Whether or not this was intentional, the artists took liberties that did not need any manipulation.

If we are making a print for a commercial purpose, as I have done for over 50 years, changing the image was expected in order to sell an idea. But this deliberate art work was not necessary. The fact that I could make a print darker or lighter and make complete changes in the feel and quality of a print was not a whim or anything like that. The client was anxious to make a statement with his product.

I remember making a Carbro print of a Cadillac car for a world famous photographic artist, Charles Kerlee, a protege of Ed Steichen. He wanted the car to look longer than normal, but not to make it look like a stretch limousine. When we made the print, we stripped in a small repeated section of the car and made it appear longer. The retoucher was an integral part of the print process. Was this false advertising? Probably, but not as much of a problem.

I made many prints for Phillip Halsman and sometimes he requested that I use a fourth printer (black) in order to make an image look more somber. The final results were great.

Some of the many strip-in's that I have made were to simulate food on one hand and the background on the other hand, and have both images in perfect sharpness.

This is an advertising illusion.

In my early days we would paint different dyes on food in order to make it look more appetizing. Retouching was also an important part of the Dye Transfer business. Some of the tricks employed by retouchers took many years to learn. Simple feats of bleaching that we take for granted now took many years to develop. Retouchers, like some color printers, took their secrets to the grave with them.

I have never denied anyone information about the processes that I was engaged in.

Truth in advertising was a big issue in the 1950's. Most photographers involved with agencies were used to doctoring the product that they were shooting, and if necessary, retouching the product after it was printed. I remember working for Pagano Studios in New York, and one day we needed to shoot a picture of a street vendor with a pushcart full of various foods and fruits. The normal thing to do was after the shooting session was over, was that we would distribute the food to the studio staff (about 90 of us) and we would get rid of it quickly.

However, many times, the photographer would add dyes to the watermelon or other colors to the cold cuts, and sometimes chemicals

such as glycerin to make a certain area glossy. Sometimes sprays would be used to kill a high gloss. When this occurred, we knew enough not to eat the food.

Getting back to honesty in photography.

If a transparency is shot of any product or person, and the exposure is correct, the color of the light source is correct, and the lighting is smooth and even, it would still be able to make the subject look different than we would see it normally. The only way to have complete honesty on photography is to place a grey scale somewhere in the scene and make sure that it is matched when the image is reproduced.

However, even at this point some changes can be made that can still produce a correct grey scale while adjusting all of the colors in the shot.

How? By masking.

This color changing, which is usually called "color enhancement," was done on a regular basis when I was in business. In order to make a product or a flesh tone more acceptable, we resorted to masking tricks.

Simple things like making the highlights in a picture much brighter can be accomplished by highlight masking. I did it all the time.

So did my competitors.

A dull image could be brightened by making the highlight areas snap a bit more. What would happen to a portrait if this same approach was used? The expression could easily be altered.

If you were fortunate enough to work with Phillip Halsman, as I was, you would find yourself making changes with every image that was brought in. Why? Because it was a certain poetic license that was used to improve the outcome.

Every top notch portrait photographic artist, including Karsh, used every darkroom trick possible to make his images more appealing.

On the other hand, if a color negative is exposed and a simple print is made, that should end it. However, every color negative must be printed, and the skill of the printer or the person at the controls of a digital system can easily alter any image.

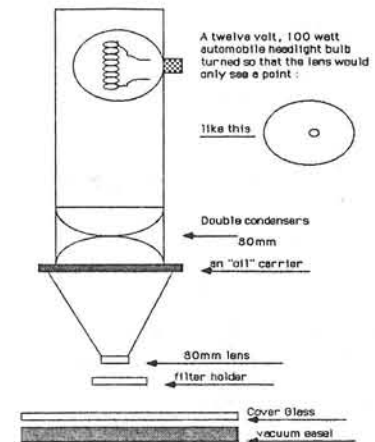
Sharpness.

How critical is it?

The latest scanning and digital systems are extremely sharp. Every detail that was captured by the camera can also be captured by the scanner and the rest of the process.

My experience in the late 1940's was with Evan and Peterson Labs in New York. At this time in history, point light sources were not used in a conventional lab.

However, Ed Evans decided to investigate the possibilities and he built a simple "enlarger" that was capable of producing 8x10 separation negatives using a home made "point source." The accompanying drawing describes it pretty accurately.



Some of the accounts I worked on were of ladies lingerie and silk stockings. The prints we made were fine and we thought that they were sharp enough. But when we made prints from separation negatives that were produced with this new kind of light source, the image became much sharper. The original transparencies were 2 1/2 and the weave of the stockings was visible. The Dye Transfer process has been criticized for not producing a "sharp" image. Well, from my viewpoint, these new images were very sharp. Sometimes, too sharp. In my mind, the image must have a certain amount of dimension, regardless of the

picture content, unless you are photographing wall paper. The contrast must be able to convey what you are trying to "say" with your image. The color balance and the correct exposure must be within the correct boundaries and the sharpness should be comfortable, not extreme.

If you are producing a portrait of an older woman, a softer image would be advisable. On the other hand, if the picture is of an old cowhand with wrinkles and a stubble of beard, I would expect to see a much sharper image. This is a kind of poetic license that I have talked about.

The great photographer, Josef Karsh, uses panchromatic film when shooting delicate and smooth skinned women because the film is sensitive to red and will allow the skin to be exposed in such a way as to produce an alabaster look in the final print.

He uses orthochromatic film when shooting men for the opposite reason. He wants the ruddy flesh tones to appear. The fact that orthochromatic film is not sensitive to reds makes the warm flesh tones print deeper and richer.

There are many ways to skin a cat.

Now for some news about the Dye Transfer saga. Dr. Patterson has informed me that Kodak has finally

agreed to divulge some of the secrets concerning the chemistry of the gelatin. As a result we lost about a month in research. But we have the formula and things are doing well.

The dyes have been figured out and are soon to be available.

Dr. Patterson assured me that in a few months an announcement concerning the Dye Transfer process will be forthcoming.

All I can say is to "sit tight." The next issue of "View Camera" has an article describing the ongoing struggle and it's solution.

Dr. Patterson also assured me that making Pan Matrix film will be a simple thing to do. This will be a consideration once they master the production of the conventional matrix film.

Photo District News is going to run my article on the restoration of a faded transparency of Marilyn Monroe that was shot in the late 1940's.

They will be comparing the results of what I did (which took a full day) with what they had done in about one hour.

I am glad that the article is finally going to be printed.

I did the work over 4 years ago but most magazines refused to run the story because of the fact that Marilyn is nude.

In the meantime, **EverColor** has introduced a new kind of service to their customers. Using the same screened separation negatives, they can produce prints on Fuji paper that look fantastic. For the clients that want to get involved in the digitized systems, here is an opportunity to have very great prints made that will last for 50 years. The price is also right.

Call them at 916-93⁹-9300 and ask for Dave or Bill. Some of my friends in the Dye Transfer business have been having problems, not just because of the lack of materials, but because the field is going towards electronics and away from "hands on."

In the next issue (**Sept. Oct.**) of **Darkroom and Creative Camera** magazine, I will be running an ad about some of my wares. Also, in the same issue, a review of my Cibachrome book and the accompanying video will be printed. I hope they say nice things about me and my efforts.

In the meantime, Keep your creative juices alive.

Thanks,

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