

A Briefing on Background

Topics: How manipulating the color and/or saturation of a seemingly unimportant background can emphasize or de-emphasize objects of much more significance..

Column first appeared: April 1999, *Electronic Publishing* magazine.

Source of this file: The author's draft as submitted to the magazine.

Author's comment: Reading this column 15 years later is frustrating. On the one hand the concept is original, and important. On the other, I'm not sure that I did it justice here, although there are definitely some valid points. I hope that someday, somebody else will pick up where this column leaves off.

This archive, to be released over several years, collects the columns that Dan Margulis wrote under the *Makeready* title between 1993 and 2006. In some cases the columns appear as written; in others the archive contains revised versions that appeared in later books.

Makeready in principle could cover anything related to graphic arts production, but it is best known for its contributions to Photoshop technique, particularly in the field of color correction. In its final years, the column was appearing in six different magazines worldwide (two in the United States).

Dan Margulis teaches small-group master classes in color correction. Information is available at <http://www.ledet.com/margulis>, which also has a selection of other articles and chapters from Dan's books, and more than a hundred edited threads from Dan's Applied Color Theory e-mail list.

A Briefing on Background

In product shots, or any other image with a prominent foreground object, take the path of least resistance. Don't force the important thing to come forward—make the background recede, instead.

.....
By Dan Margulis

Sun Tzu said: you may march a thousand miles without growing weary, if you travel where there is no enemy.

The Chinese philosopher of war, who lived around 200 B.C., was not a Photoshop user. His teachings, however, have great applicability to image processing, particularly to the class of images that makes up at least 75 percent of professional practice.

I refer to the class of images that have a certain focus of attention, as opposed to being an overall scenic shot or whatever. The subject can be animal, vegetable, or mineral, and its apotheosis is the product shot, where the success of the image depends on how well it portrays whatever the foreground object is.

In handling such images, there is often a war between the client, who wants to make the foreground object stand out more, and the artist, who jumps through all the wrong kinds of hoops to try to do so.

For example, in picture series ABC, it's obvious what the center of attention is, and likely that the client would want it to become even more prominent. So, those artists who are not disciples of Sun Tzu isolate the cheetah and sharpen or put more color in its face and/or more black in the nose and tail. After several hours of work, the animal does become more pronounced, in the sense that the viewer wonders whether it was cut out and pasted into the background.

If it isn't clear how Sun Tzu's advice helps here, we can turn to Zhao Zhao, a commentator of around 200 A.D. An-

alyzing the Sun Tzu quote, he clarified it as follows: "Go into emptiness, strike voids, bypass what he defends, hit him where he does not expect you."

Get it yet?

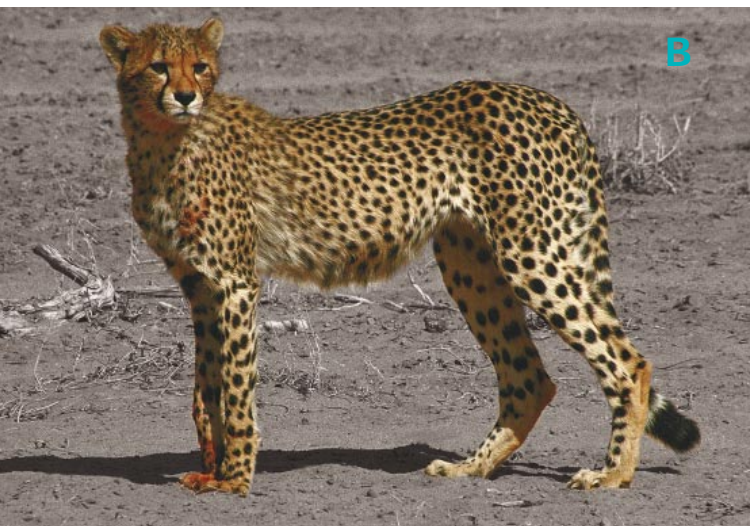
Compare Picture A to Picture B, which is, obviously, a special effect. I've isolated the background and converted it to black and white. Now, the key question: isn't it true that in B, the background is about ten feet further behind the animal than it is in A?

It is, or rather it appears to be, because of an interesting feature of human vision. The grayer an object, the further away it seems to be. The more colorful, the closer. By making the background gray, we push it away. Or, from the client's point of view, we bring the foreground object closer. And that is the theme of this column. When trying to make something pop, forget the thing itself—and attack the background.

Mind you, I'm not advocating Pic-



The grayer an object is, the more it seems to move away from us. In image B, where the background is as gray as it can possibly be, it seems much further away from the animal than in. This suggests a general approach to product shots: desaturate the background somewhat, as in C, and the foreground object will seem to jump forward.



ture B as a final result. I suggest Picture C, which is a Photoshop blend: 80% of A and 20% of B. The cheetah is identical in all three versions. Only the background changes, and in C the change in the background makes the cat stand out a lot more.

Another advantage of attacking where the enemy—in this case, the eventual viewer—does not expect you: any time we make major changes, we introduce artificiality, and if we aren't careful, that artificiality will make the picture look stupid.

Here, however, the viewer is going to be focusing attention on the animal. We therefore stand a chance of getting away with retouching outrages in the background that would be out of the question in the cat.

Clausewitz said: A general who understands his objective and his means and therefore his organization of the war, does neither too little nor too much, and by this proves his genius. His talent is demonstrated not so much by bold strokes of creativity as in a successful final result. It is the exact confirmation of silent suppositions we should admire; it is the soundless harmony of the entire score to which we should listen. These things only make themselves known in the totality of the result.

Agreed. In the ABC images the objective was to make the background more like a black and white image,

but there is a much better way of phrasing this. The word *saturation* refers to the relative purity of a color, as opposed to how much toward gray it is. In Picture A, the background is more saturated than in either of the others. In Picture B, the background has been completely desaturated, that is, it is as far toward gray as it can get.

The means of doing this, at least one of the easiest ways of doing it, is to somehow make a selection of the background, and then use Photoshop's Image: Adjust Hue/Saturation command, moving the center (Saturation) slider to the left until the desired point is reached.

Understanding that the strategy is one of adjusting saturation leads to a different tactic when dealing with images that have more than one object competing for attention.

In the political rally of series DEF, if we work for a newspaper, we want a straight, unadorned shot, like D. But in the advertising biz, it's quite likely that we are working for one of the candidates only, in which case certain

people in the image are important to us and others aren't. If we are trying to make the couple at left stand out, the folks to the right of the picture are so much window dressing. Conversely, if it is the couple at right we're trying to emphasize, the other couple becomes as so many zeroes to the left.

Either way, we'd like to massage the image so as to emphasize the people we're interested in and fade the others into the background. But the tactics of ABC aren't appropriate. There, the background color wasn't particularly relevant to anything. Here, it sets the mood. Blue skies and green trees are happy colors. It wouldn't do to gray up the background so that it looked like the picture was shot on a gloomy and overcast day.

Accordingly, we turn away from Adjust Hue/Saturation, in favor of a different application of the same color concept, Photoshop's sponge tool.

The sponge can be set to either saturate or desaturate whatever it passes over. As with other Photoshop tools, one can set any brush width and pres-



Even if the background as a whole can't be changed, careful use of the sponge tool in the areas around an object can create the illusion of depth. Given original D, version E tries to emphasize the man and woman on the left. Version F tries to focus attention on the man and woman at the right.



sure, although for devious work like this pressures of 20% or less are probably indicated.

In ABC, we saw how a difference in saturation between foreground object and background created the illusion of depth. All we have to do here is repeat that on a smaller scale. We use the sponge to brush extra saturation into the faces and clothing of the people we want to highlight, and reverse its setting to take saturation out of the background immediately surrounding them. With the unimportant persons, we do just the opposite: the faces get desaturated and the background around them gets more color.

In Picture E, the faces of the people at left are grayer, but the foliage behind them is also more colorful. By contrast, not only is President Clinton's face redder than in the original, but the leaves and sky behind him are grayer. That's why he seems so much further to the front than he does in either D or F.

Leonardo da Vinci said: Given different colors of equal purity, the one will seem most prominent which appears near its direct opposite: a pale color against red; a black upon white;...blue near a yellow, green near red: because each color is seen more distinctly when opposed by its contrary, than by something more similar to it.

This is one of the deepest observations about color ever made. Before we discuss it we'd better have an understanding of what this direct opposite stuff is intended to mean.

The technical reason that magenta ink is used is that it absorbs green



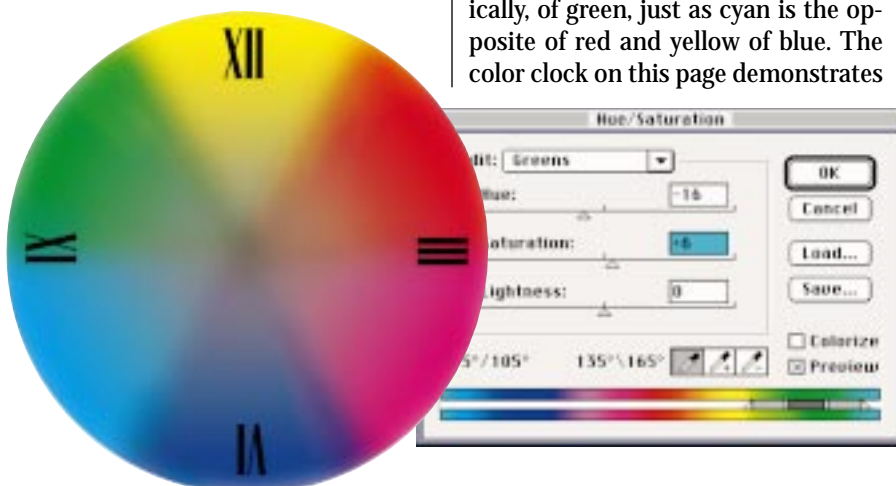
The clock at bottom left is a valuable strategic ally. The further away colors of objects are from one another on the clock, the more pronounced both will seem. Two fantasy beachscapes illustrate: in J, the ocean and trees, though weirdly colored, as far away from the sky on the color clock as in the original G. In H, however, the colors are closer, resulting in a flatter-looking image. This suggests a desirable correction, K: use the Hue/Saturation command shown below to move green objects toward yellow, and thus further away from the blue sky.

light; it is the direct opposite, theoretically, of green, just as cyan is the opposite of red and yellow of blue. The color clock on this page demonstrates

this relationship.

To see the importance of this in real life, go back to the preceding page and cover everything except the right half of Picture F. Notice how, with the woman in red cropped out of the image, the blue jacket of the woman at right doesn't seem so bright?

Red and blue are fairly close to being opposites. A perfect red would have equal amounts of magenta and yellow ink, with cyan being much



MAKEREADY



lower. Or, in RGB, it would be equally small amounts of green and blue light, with red being much higher.

Either way, the red jacket is almost a pure red. The blue jacket isn't a pure blue; it tends toward cyan, or in other words, toward the opposite color.

That brings us to series GHJK, in which Picture G is the original. It illustrates the major weakness of the CMYK colorspace: we can't make very vivid blues. Our client is apt to ask for a bluer sky, but the fact is that it has nearly 100% cyan ink coverage already, so technically we can't oblige this request.

It would be nice if somebody were wearing a red jacket in this picture, but that would be too easy. Instead, we must rely on contrast between sky and water.

First, some measurements are in order. We say the sky is blue, but it actually has a third to a half again as much cyan ink as it does magenta. So, it would fall on the left side of the blue patch in our color wheel, say at 6:30. In the water, the cyan and yellow values are equal, so this color falls in the middle of green, right at 10:00.

To see how much of the apparent snap in this image derives from the three-and-a-half-hour difference between the sky and water, let's consider a couple of imaginary landscapes, Pictures H and J. In these, I did some fooling around in the LAB colorspace, which is ideal for this kind of work because it defines color in terms of opponents, too.

In Picture H, I attacked the B channel, which governs the relationship between yellow and blue. I applied a V-shaped curve that caused everything with a yellow component to take on a blue component instead. The water became a nearly pure cyan, just slightly toward yellow, perhaps 8:15 on our clock.

In Picture J, I inverted the magenta-green A channel. The water now falls at about 3:30 on the color clock, a reddish magenta. That's a little less color variation than in G, but the move made the sky slightly more intense blue as well, so it's probably a wash.

Whether you follow the steps that created these two alien landscapes doesn't matter as much as the result.



Picture H seems flat and lifeless, whereas J is approximately as vivid as the original G.

If you know how to tell time, you know how to make G a better picture. To produce Picture K, I used the Hue/Saturation command, choosing greens and altering their hue. The command allows us to move any color in the direction of either of its immediate neighbors on the color clock. The neighbors of green are yellow and cyan. Naturally, I wanted to move the water toward yellow, as that makes it fall later on the clock, and farther away from the 6:30 sky. Works, right?

lendower, the brilliant Welsh general, boasted: I can call spirits from the vasty deep.

His kinsman, the equally valiant Hotspur, retorted: Why, so can I, or so can any man;/But will they come when you do call for them?

This is an excellent philosophy to keep in mind when planning something wild and irregular, such as completely changing the background color. The raw idea may be a good one, but a little battlefield technique is in order.

Picture L, one of the most widely reproduced photographs in the world, has never been one of my favorites. Whoever decided to have that pink fabric behind the model should be arrested for impersonating a photographer. The whole thing winds up too flat, in the same sense that Picture H was.

Think of the colors of the main interest objects: the woman's hair is on the red side of yellow. Her skin is on the yellow side of red. The hat is on the magenta side of red. The fabric is on the red side of magenta. In terms of the color clock, everything falls between 12:30 and 3:30, except the woman's eyes, which stand out nicely.

There's something to be said for introducing the direct opposite here—but the direct opposite of what? The bottom corners of this spread give an answer. The direct opposite of the reddish yellow of the hair is the cyanish blue of Picture N. The direct opposite of the magentaish red of the hat is the greenish cyan of Picture Q.

MAKEREADY

To me, the woman's blue eyes stand out the most in Picture L, the hair seems blondest in N, and the hat seems loudest and most garish in Q. The best color for the background, therefore, depends on which of these items, if any, you wish to highlight.

But it is one thing to understand the possibilities and another to get the final result right. N and Q have identified the proper spirit, but it's not evident that it has answered their call.

If you want to make the foreground object, the woman and all her accoutrements, stand out, the foolproof method is to desaturate the background, as was done previously in Picture B and on this page in Picture O. To my way of thinking, that's a better way to do it than to send viewers searching for their sunglasses, as N and Q do.

A combined strategy, however, makes a lot of sense, as in M or P, which are toned-down versions of N and Q (again, in all of the images, the model and the things she is wearing are identical).

Does it strike you that the differences in all these versions are rather minor in the overall scheme of things?

If so, I tend to agree. On the other hand, clients in my experience tend to be rather particular about product shots, shots of people, and, for that matter, any kind of image that has a clear center of attention. How much time, how much ammunition, how many proofs, could be saved over the course of a campaign, by such small changes?

I have deliberately framed this column with quotations from four students of the art of war, and one of the war of art. The imbalance in favor of the military mind reflects the prime importance here of both strategy and tactics.

The grand strategic design is that it's usually better to outflank an enemy than charge into its strength. For this reason, while small, sensible moves with the foreground objects are appropriate, the wise general reserves the really big color maneuvers for the background.

There are several tactical ways of doing so. We've worked with four images in this column, but only two of them have required a formal selection or

mask. My apologies for not showing how to construct these selections; they aren't particularly difficult to make, but neither are they as easy as the paintbrush method of series DEF or the Hue/Saturation method of GHJK.

To my way of thinking, however, the artist offered by far the most insight. (The fact that he is Leonardo da Vinci may have something to do with this.) Nothing against strategy and tactics, but we must remember that we are in an artistic setting. This isn't color by the numbers any more. There is far less of a case for matching the art in the background than there is the focus of interest. It's not unheard of to select the background and *blur* it to make the foreground object pop by comparison. If we can do *that*, we certainly can cut ourselves a little slack to change the color.

We also should feel free, in this type of image, to make some sort of tactical—er, artistic—change to background objects, up to and including trashing them altogether and/or introducing new ones. Accept the kinds of changes in series DEF, and you have to start considering even more options. (Want to make that blue dress stand out? Then arrange for one of the people to have blond hair.)

All these techniques boil down to an understanding of where hues fall on the color clock, a deep appreciation of the opposite-color concept articulated by Leonardo, plus a healthy dose of the idea that a lack of saturation produces depth.

Focusing the viewer's attention on the crucial part of the image is the objective. Our client won't care whether the means of arranging this is direct or devious, straightforward or circuitous. Therefore, follow the path of least resistance. Go where the enemy does not expect you, where your tactics are least likely to be detected. Work the background, and watch the foreground jump.

Contributing editor **Dan Margulis** is author of *Professional Photoshop 5*. (John Wiley & Sons). Dan can be reached by e-mail at 76270.1033@compuserve.com, or by fax at 973/763-2835. For information on his small-group color-correction tutorials in Chicago and Atlanta, call Michelle Anderson of PrimeSource at 800/992-4897.

