## Ask Frau Dulent (Fragen Sie Frau Dulent):

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## • Physics - Frau Dulent speaks of Color

This is likely to be shattering some concepts: Neither Black nor White are, technically, colors. They are in the first instance pure density, as in absence of color and all colors mixed together, in the second instance.

(I am speaking about spectra – colored light mixed.)



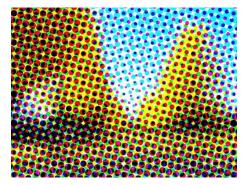


Oh yes, it gets messier; consider the following truths: The color mix you see and perceive as an item's color is in fact the one color that it isn't. What your eyes get to see is the one color mix that an item rejects manifesting as reflection and sends in turn to your eye for perceiving. Fact: Your eyes and perceptive filtering deceive you into a false reality (stick that into your pressure cooker and digest it.) Adding to the fray is your retina, it has to break any image into pixels by way of light sensitive nerve endings (some 120 10^6 rods and some 6 x 10^6 cones) lodged in the back of your eye. As many as there are, they are limiting the resolution of your vision to ~ 576 Megapixels.

"Thou shalt not make images" 726AD – 843AD when Iconoclasm hit the cobble stones – ha, ha! Your brain does this as a matter of course, all the while! But (wait for it): The eye can sense only red, blue and green, so your brain has to interpolate all colors by mixing the three sensorial inputs tainted your own perception. Hey! what can anybody say to that? Add some three dimensional distortion and fading memory to that and the mess becomes irretrievably convoluted. I'd hate to think what a chameleon conjured up in this context. Well, in an effort to protect commerce a church council in Constantinople ruled in 843 against the iconoclasts and pictures and indulgencies flowed freely ever since. Good move given the physiology of which they knew nothing.



Now imagine you are looking at a magazine print or a catalog picture; look again, this time with a magnifying glass – oy! What have we here?



All tiny little dots that you in your brain assemble the image in your head. QED.

Just to keep you on your toes: You must now consider that the dots you are seeing are made of four constituents:

Yellow, Magenta and Cyan, plus a black layer (K) of ink (pigments).



You may say: We have suddenly and without warning switched to pigments – no fair! And you'd be right. But then we are relying on the reflective quality (a spectra mix) of tiny little dots in complementary colors (well, except for the black layer) so as to outsmart your color and perceptive apparatus.

How quickly things become chaotic, or at least complicated.

Bottom line: Don't trust your eyes, they will deceive your deceptors!