

## Article 7 – Color Systems

Today I want to talk about color wheels and color systems. Edith Anderson Feisner, in her books *Colour* and *Colour Studies* has some of the best information on color systems. Most of today's information comes from her books.

There are 3 types of color systems:

- **Subtractive systems** represent the **process of mixing colors together** – as in the Pigment wheel and the Process (Ives) wheel. In a subtractive system you are absorbing light. The more color added the less light reflected. All of the colors mixed together make black. You will recognize the difference between the two. The Pigment wheel uses red blue and yellow as the primaries. This is the one you were probably using in high school art classes. The Process wheel uses Cyan, Magenta and Yellow as the primaries. If you have any of Joen Wolfrom's materials then you use the Ives Wheel, a Process wheel.
- **Additive systems** represent the process of **mixing colored light**. The more light added the lighter the color. The primaries are red, green and blue. Mixing all of the colors together makes white. This is the system that is used in theater lighting and on your TV screen.
- The **Partitive system** is based on **colors relationships to each other**. This is system a new concept to me but in studying this, I believe that it might actually be the most applicable to quilting and fiber art. The first color system in this classification was created by DaVinci but the one used today is the Munsell system.

The Primary and Process wheels are subtractive systems. The Munsell wheel is Partitive and the Light and Visual wheels are Additive. Feisner makes the point that just one system or wheel may not satisfy all needs. Joen Wolfrom says that the Process wheel is the right wheel for textile artists because it is the wheel used by manufacturers that print fabrics. Feisner says that painters and dyers use the Subtractive wheels (Primary and Process) to create colors (paints, inks and dyes) but that they use a Partitive wheel to create color reactions in the design. She contends that all art media use Partitive color in the media but that the materials used can be either additive or subtractive. She also says that specifically the Munsell partitive wheel is used in fabric manufacturing and interior design.

That makes sense to me! I've never been able to reconcile that putting fabrics next to each other is the same as mixing dye colors. I've also found that in the dyeing and fabric painting that I have done that I really need the primaries from both the Process (yellow, cyan, magenta) and Primary wheels (red, yellow, blue) to mix the target colors that I want.

The Munsell wheel is a ten to twenty step wheel with 5 primaries: yellow, red, green, blue and purple. Looking at the wheel it appears to be a merger of the Process and Primary wheels and that makes sense to me too. Munsell also built a color tree that represents value (lightness or darkness) and relative purity of the colors, something not really addressed in the Pigment and Process systems. He developed a code for each color on the tree. His color system was the one adopted by the US Bureau of Standards as the acceptable language of color.

I'm not going to talk much about the Additive systems but I do think it's important to understand them. After all, once you photograph your work you need to be able to accurately edit those photos for publication. You have to know to change the red and green colors to alter the yellow image. But that's a photo editing class and a topic for later. Just understand that color works very differently when dealing with additive systems and your fabric or dyeing color wheel isn't going to help at all there.

Since I am approaching this study more as a user of materials that are already colored, I determined that the Munsell system is the best for my purposes. I knew that there was a student's guide to the Munsell system out there somewhere so I began a search for it. What a surprise to discover that the

author, Jim Long, resides right here in Richmond, VA at that time. He is the retired Chair of the Film and Photography Department at Virginia Commonwealth University. I found his email address to ask where to find his book (Amazon.com). That led to a few email exchanges. I eventually had to explain why this random person was so interested in color theory - a topic that he says most artists aren't interested in at all! I told him about my background and the root of my interest (proclamations about there being only one right color system) and my conclusion that there are several that are right for different uses but that for fiber artists I felt that the Munsell system was most appropriate. Here's what he had to say on that:

"Color theory can get a bit sticky because there are several systems. Regarding color wheels it is important to recognize that there are different types. The Munsell color wheel is based on human perception, NOT paint mixing. Artist color wheels generally are based on paint mixing, although pigments of the same color but different chemical composition will mix differently. "

In my mind, that validated my own research and that's why I primarily use the Munsell color system when I am making quilts. I use the Process and Pigment systems primarily in my dye studio.

Next time we will talk more specifically about the Munsell system.