How to select colors?

What we will or will not see on a diagram or a chart depends to a very large extent on which colors are used. How to pick the right ones, then?

First of all, remember these three principles:

[Garish colors are wrong]

If the purpose of the diagram is to highlight the content, you should make sure that no part of the diagram is irritating and making reception difficult.

And the most irritating thing are bright, garish colors.

Imagine that you have to work for several hours over maps or diagrams that use that kind of coloring.

Bright colors which attract attention to advertising banners, distract our other thoughts.

But in the case of a good diagram, distraction is the last thing you want. On a good diagram, colors invite the viewer to study it further rather than forcing them to avert their eyes.

[it is impossible to tell apart 100 different colors]

There is no reason to create diagrams which test the viewer’s ability to tell apart different colors.

If a specific color plays an important role on the diagram and we want the viewer to interpret it correctly, we should try to limit the coloring scheme to no more than seven to nine colors. That will let the viewers read the information without wondering constantly what shade they are looking at.

[Color blind]

When designing a diagram for mass-market consumption, you should also take into consideration that not everyone sees colors the same way.

About 5% of the population, mainly men, has a problem telling colors apart.

Most often this involves the ability to distinguish between red and green.

Color Oracle Program can be used to simulate how the diagram will be seen by a person who has this vision deficiency.

A person affected by daltonism will look at a diagram that is predominantly green and red this way. So they won’t be able to distinguish the visuals which are obvious to others.

[ColorBrewer]

So how to pick the right colors?

It is best to use tested coloring schemes selected by professionals. The best known is a collection developed by professor Cynthia Brewer. We can select and test one of many sets of colors at <http://colorbrewer2.org/>.

Some will be more suitable to illustrate quantitative values, others for qualitative ones. We can select the number of colors on each scale and decide if we are interested in schemes visible for people who are color-vision impaired, or those which equally readable on a printout and on a computer screen.

Above all, however, in order to select the right colors you should ask yourself a question as to what type of information you want to illustrate using these colors. Is their main job to highlight or hide something or arrange the data by category? It will be easier to pick the right colors if you know why you are using them.