Improving Visual Accessibility in Digital Media Continued

In the first part of [Improving Visual Accessibility](https://pitt.sharepoint.com/sites/dsas/dean/it/techhelp/IT%20Weekly/2-19-2021.pdf), we discussed using appropriate text size, contrast, and multiple meaning cues to aid low-visibility users in accessing digital media. This week, we’ll discuss techniques for making your documents more accessible to users affected by color blindness.

[Color-blind Awareness](https://webaim.org/articles/visual/colorblind) – An oft overlooked issue in digital media generation is color blindness. There are several types and, of course, varying levels of color blindness. The impact of ignoring this standard can vary from inconsequential to complete failure. It depends on the color choices of the author, the reader’s type of color blindness, and the importance of the use of color to convey meaning.

Let’s take a simple example. Here are two cute puppies, one sitting against a red wall, the other against a white wall:

Two puppies, one against a red wall, the other against a white wall.


Original picture of puppies

Here is that same picture, but through the lens of someone with Red-Blindness/Protanopia.

Two puppies, one sitting against a dark wall, the other against a light wall.


Red-blind color lens of the puppy picture

If you are not red-blind, then you can see that the red wall now appears to be a dark grey shade. If you are red-blind, then please note that the wall that appears dark grey in the two photos above is a deep shade of red in the original. Whether this difference is inconsequential or catastrophic depends on what the author needs from this image. If the author just wants to show the audience an example of two cute puppies – i.e. – the image is purely decorative, then there is no harm; viewers can still reasonably discern that the image contains puppies. If, however, the author needs the viewer to in some way judge the puppies in relation to their backgrounds, that could be problematic to a red-blind audience member depending on how the author asks for input and/or how the viewer provides input.

Author: Do you want the puppy in front of the red wall or the khaki wall?

Viewer: I want the puppy in front of the grey wall.

It may be that you absolutely must use an image that may not be as usable to those who are color blind. In the example above, if you needed to use that particular image, you could use other identifiers to distinguish between the puppies. You could include text that indicates location and gender in the caption or alt-text (“Left: female, right: male”). The key to this standard is to make sure that colors aren’t the only method of conveying information, not that everything needs to be solely black and white.

It is important to note that sometimes, in meeting one accessibility standard, we may unintentionally violate another. In last week’s accessibility piece, the section on contrast used the example of lime green text on a dark red background:

**This is some green text on a red background.**

While the example meets the criteria for contrasting colors – i.e. – a light color with enough of a contrast ratio becomes readable on a dark background – it fails this standard.

Here’s what that same text looks like to someone who is green-blind:

Light green text on a dark red background with a red-blind lens


Be aware of your use of color in digital media. To see how your documents stack up, try the [COBLIS Color Blindness Simulator](https://www.color-blindness.com/coblis-color-blindness-simulator/).