

After 'the dress' and 'Yanny or Laurel' going viral, I started thinking.

<https://metro.co.uk/2017/04/07/has-the-blue-or-white-dress-debate-finally-been-solved-6560599/>
<https://www.youtube.com/watch?v=yDiXQI7grPQ>

If we see different colors on a dress, if we hear different names in the same sound, how can we learn how to play and blend our sounds together in an orchestra or band? My colleagues could perceive completely different sounds and textures? Can we still play together? In a group where we need to interpret what we hear and then respond by adapting our own sound within the structure and in the moment. Should we be able to focus on the same musical aspects, or not? Is this even possible?

*First 'the dress' explained:

Neuroscientists Bevil Conway and Jay Neitz believe that the differences in opinions are a result of how the human brain perceives color, and chromatic adaptation. Conway believes that it has a connection to how the brain processes the various hues of a daylight sky: "your visual system is looking at this thing, and you're trying to discount the chromatic bias of the daylight axis. ... people either discount the blue side, in which case they end up seeing white and gold, or discount the gold side, in which case they end up with blue and black."

More research on 'the dress':

The *Journal of Vision*, a scientific journal about vision research, announced in March 2015 that a special issue about the dress would be published with the title *A Dress Rehearsal for Vision Science*. Scientific work is ongoing. The first large-scale scientific study on the dress was published in *Current Biology* three months after the image went viral. The study, which involved 1,400 respondents, found that 57% saw the dress as blue and black; 30% saw it as white and gold; 10% saw it as blue and brown; and 10% could switch between any of the color combinations. A small number saw it as blue and gold. Women and older people disproportionately saw the dress as white and gold. The researchers further found that if the dress was shown in artificial yellow-colored lighting almost all respondents saw the dress as black and blue, while they saw it as white and gold if the simulated lighting had a blue bias. Another study in the *Journal of Vision*, by Pascal Wallisch, found that people who were early risers were more likely to think the dress was lit by natural light, perceiving it as white and gold, and that "night owls" saw the dress as blue and black.

A study carried out by Schlaffke et al. reported that individuals who saw the dress as white and gold showed increased activity in the frontal and parietal regions of the brain. These areas are thought to be critical in higher cognition activities.

So our brain decides what colors we see interpreting the light in an image. I can see white and gold, the person next to me can see blue and black. Some people can even switch from one color combination to the other.

*Second 'Yanny or Laurel' explained:

This is a mixed recording of both words that have similar acoustic features. Yanny is played on a higher frequency, Laurel on lower one. Younger people are more likely to hear the higher frequency, older people the lower. The brain unconsciously chooses which frequencies to pay attention to, making us hear what we do. In this case some people hear Yanny and others hear Laurel.

So our brain decides what we hear by focusing on the frequencies that it perceives as most important in order to understand what is being said. Different people hear different names.

Coming back to my first question. If we see different colors on a dress, if we hear different names in the same sound, how can we learn to play together or blend our different sounds in an orchestra

or band?

What should our focus be when playing together? While playing we must be attentive to: a rhythmic structure in a certain tempo, melody, harmony, balance and dynamics.

We must also react to visual cues, by section leaders and the conductor. Personally I believe that my brain switches very quickly between the different focal points. I then make decisions as to how I need to adjust my sound, articulation, pitch or dynamic in order to fit into the combined sound of the ensemble.

To fit in the rhythmic structure I need to be able to feel the pulse and hear the smallest subdivision. When playing syncopated rhythms I need to know the combined pattern of the parts. My prepared sound image for my passage needs to fit into the tempo and rhythm of the ensemble.

To fit into the melody I need to have a shared interpretation and sound image of the same phrase with my colleagues. We can have a unison passage or one of us can take over the melody and pass it on. Our melodic intonation should be connected and should fit the harmony.

Melodic and harmonic intonation is based on a tuning system. It can be equal temperament, Pythagorean tuning or mean tone temperament in western classical music. Intonation with a woodwind group is particularly challenging because of the various timbres and overtone series involved.

There is also balance. When chords are balanced, their structure is clear making it is easy to hear open octaves and fifths. This makes adding a chord tone or a melodic line far easier. A good rule of thumb is play long notes softly so as not to cover the melody or the rhythmic pulse.

And last but not least are the visual cues given by the conductor, section leaders and colleagues within different groups. Some people are seated directly in front of the conductor, others see him or her from the side. We can all interpret what we see in many different ways. Sometimes a conductor can give special attention to a group of musicians, but his/her movements will be interpreted by all groups. Our leaders can hear different pieces of the musical structure and react to them in different ways, leading and taking their sections with them.

Every single musician in the group is working to bring a piece of music to life by listening, interpreting, feeling, building sound images, playing, knowing, fitting, matching and passing it on. Each player making important decisions that are influenced by his or her set of focal points. It seems like a complex process and it is!

When something doesn't work right away it may be because two musicians are not hearing the same information, or their focus is on another aspect of the musical structure, or they are interpreting the movements of the conductor differently. Through focal points we can improve our collective interpretation. The wealth of information that we gather as we play can be the key to effective collaboration.

In the end seeing different colors in a dress or hearing different syllables in a name can make them more interesting.

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*https://en.wikipedia.org/wiki/The_dress

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