

Compare newton and goethe's theory described in a particular video

[Science](#), [Chemistry](#)



Introduction The interaction between light, darkness and colors poses a major debate. A majority of people associate color with light and argue that when light disappears, the color also become invisible. A contrary school of thought suggests that both light and darkness are responsible for the manifestation of colors.

For instance, shadows are grey in their real context but appear greenish blue to the eyes. The difference in appearance is as a result of the fact that the eyes try to counter the strong orange-red light from the sun. A cone exposed to two opposite sources of light can be used to illustrate this phenomenon. When the cone is illuminated by white light on either sides, a grey shadow appears on either sides. When a green filter is used to cover one of the light sources, the set up displays a magenta shade. The magenta shade is a visionary creation of the eyes as green's complimentary color.

Goethe's Theory

Goethe spent 40 years formulating his theory of colors. His studies took color as part of the human vision into account. Therefore, Goethe studied the human eye in detail and based his theory on man as an observer. The eye will always strive to bring about unity and totality in the way we perceive colors. The eyes create harmony by initiating complementary colors. For example, Red is the complementary color for cyan. Goethe studied the quality and characteristics of colors and the conditions under which specific colors came into existence.

In his theory, Goethe reiterates that light and darkness are co-factors in the formation of colors. He encoded his research on colors on a color-wheel. The complimentary and harmonic color pairs are placed on opposite sides of the

wheel. The harmonic colors form a basis for the interaction between a seeing man and the world of colors, that is, when the world shows us a particular color, our vision responds by perceiving a complementary color. The theory is insistent on the fact that the perception of color must take into account the qualities of color in dark conditions and in light as well.

Newton's Theory

In his experiments, Newton constructed a triangular prism to advance his theory of the refraction of light. In the experiment, he directs a beam of sunlight to pass through the prism upon which refraction occurs. The refraction results into a spectrum which is a series of seven colors commonly associated with the rainbow. From the observations he made during the illustration, Newton concluded that the seven colors are components of white light. Therefore, Newton's theory associates the perception of color with light and excludes the role that darkness plays in the display of colors.

Comparison between Goethe's and Newton's Theories

Goethe tried out the concepts used by Newton. He expected to see the spectrum on a white wall but all he saw was the wall. He further observed the windows from which the light was coming from. Goethe observed colors along the boundary between the blazing bars and the window pens. Goethe's observation conflicted the conclusions made by Newton. From the observation of the window pens, Goethe concludes that the colors rose from the boundary between light and darkness. The observation confirms his argument that both darkness and light are responsible for the manifestation of colors.

According to Newton, the manifestation of color is solely about light in

exclusion of darkness. His perception is supported by the fact that Natural Sciences refer to darkness as the absence of light. However, when Goethe observed that there were no colors in the sections of the window that were composed of light. The colors only existed around the darker shades of the window pens. Therefore, he disputes the exclusion of darkness in the context of color formation. The two theories only concur on the fact that light is necessary for the formation of colors and differ when the aspect of darkness is incorporated into the argument.

Conclusion

From the perspectives of both Newton and Goethe, light is an important aspect of colors. The two theories show different form of colors. Goethe's experiments on shadow display physiological colors. Chemical colors are associated with trees and flowers. Newton brings up the aspect of prismatic colors through his refraction experiments. The point of contradiction is on the inclusion of darkness by Goethe as a necessity for the display of colors. Goethe's argument is well established with viable illustrations that show how light and darkness interact and how colors emerge from the interaction.

Work Cited

Brown, Joseph. Light Darkness & Colours - Goethes Theory. You tube Video Clip. March 20, 2014. Web. May 27, 2015. Accessed from https://www.youtube.com/watch?v=pitz56_8CJg