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Period **5**  
**English 1010**

### Annotated Bibliography

Ásgeirsson, Árni Gunnar, Maria Nordfang, and Thomas Alrik Sørensen. "Components Of Attention In Grapheme-Color Synesthesia: A Modeling Approach." *Plos ONE* 10.8 (2015): 1-19. *Academic Search Premier*. Web. 5 Dec. 2016.

While there is information about color grapheme, there isn't much about the process. These three scientists put their heads together and devise a scientific experiment to decipher this process a little better. They set up their test using congruent and incongruent letters testing the patients short term memory. In the study, the results suggest that there is a perceptual processing advantage for congruent letters. They found that incongruent letters had a slower perception. This process of attempting to understand the memory effect that this disability creates allowed the group to get a glimpse of a better understanding of the brain.

Barlow, Emma. "Grapheme - Color Synesthesia." Personal interview. 4 Dec. 2016.  
Used

to Study Grapheme

It is one thing to hear about a disorder, but to experience it first hand is another. Emma has had Grapheme Synesthesia since she can remember. As it personally affects her life, Emma struggles as a result of her Grapheme in many ways that others take lightly. Emma has trouble with directions, and everything in her life is a rainbow of confusion.

Barlow, Tiffany. "Grapheme - Color Synesthesia." Personal interview. 4 Dec. 2016.  
Used

to Study Grapheme

It is one thing to hear about a disorder, but to experience it first hand is another. Tiffany has had Grapheme Synesthesia since she was fifteen. As it personally affects her life, Tiffany not only struggles with color and the interpretation that her brain associates with letters, names, and words, but she also has an auditory

aspects that effects her driving and daily activities. Tiffany has trouble with directions, and everything in her life is a rainbow of confusion.

Brang, David, and V. S. Ramachandran. "Survival Of The Synesthesia Gene: Why Do People Hear Colors And Taste Words?." *Plos Biology* 9.11 (2011): 1-6.

*Academic*

*Search Premier*. Web. 8 Dec. 2016.

Brang and Ramachandran, like other scientists attempting to unlock unknown information regarding synesthesia compiled information about the common questions that arise. In this article they break down the best knowledge of what is already known about grapheme. They also study the hereditary aspect of why it appears that the gene could be hereditary, but why they cannot prove it. They also studied the long term memory effects that are a result of synesthesia.

Carriere, Jonathan S. A., et al. "Grapheme-Color Synesthesia Influences Overt Visual Attention." *Journal Of Cognitive Neuroscience* 21.2 (2009): 246-258. *Psychology and Behavioral Sciences Collection*. Web. 8 Dec. 2016.

In this article, Carriere goes into depth about the optical aspect of grapheme synesthesia. The scientists goal was to discover the two following ideas to determine if synesthesia influences eye movement and to observe the spatial shifts of fixating objects. They did these optical tests with two people one male and one female around the same age, with a similar education, at the same school. Of course you cannot determine that any two people will have the exact same form of a disease or the same way you cannot have two people go through the same experiences with the same growth and understanding, but they did their best to get two patients with similar characteristics and qualities.

Jäncke, Lutz, et al. "The Neuroanatomy Of Grapheme–Color Synesthesia." *European Journal Of Neuroscience* 29.6 (2009): 1287-1293. *Academic Search Premier*. Web. 8 Dec. 2016.

This is an analysis of two other studies done of the name correlation of grapheme synesthesia. In this reflection, they state that the analysis of the color names came German roots. While colors are always colors, it was important to mention which language the colors were spoken in and written down in due to the different frequencies. For example, red has a different frequency than rouge does. Although they are both the same color, the frequency changes with

vocalized frequencies. This study, tested frequency and the affects that it has on the synesthetes when tested. It also illustrated a nonarbitrary relationship between the synesthetes and color space.

Kay, Collette L., et al. "Colour Fluctuations In Grapheme-Colour Synaesthesia: The Effect Of Clinical And Non-Clinical Mood Changes." *British Journal Of Psychology* 106.3 (2015): 487-504. *Psychology and Behavioral Sciences Collection*. Web. 6 Dec. 2016.

This article studied two experiments and created a third based on the knowledge provided in the previous two articles. Their study looked at the influence that mood had on color in synesthesia patients. This study found that being in a depressed state definitely impacted the color schemes. The luminosity decreased and the colors appeared dull after the negative mood took a toll. They also looked at the affect that synesthetes had when they were discovered to have anxiety in addition to grapheme.

Rothen, Nicolas, and Beat Meier. "Grapheme-Colour Synaesthesia Yields An Ordinary Rather Than Extraordinary Memory Advantage: Evidence From A Group Study." *Memory* 18.3 (2010): 258-264. *Psychology and Behavioral Sciences Collection*. Web. 5 Dec. 2016.

The purpose of this experiment was to look at the memory aspects of grapheme synesthetes. Using a standard memory test, Wechsler Memory Scale, they conducted an experiment to test if memory abilities were enhanced with synesthesia. While some patients experienced great memorizing abilities, they do not have enough information to dictate that it was a direct result of synesthesia. However, there was evidence enough to suggest that this may be a result of synesthesia, but not enough to claim direct cause.

Simner, Julia, and Jamie Ward. "Synaesthesia, Color Terms, And Color Space: Color Claims Came From Color Names In Beeli, Esslen, And Jäncke (2007)." *Psychological Science (0956-7976)* 19.4 (2008): 412-414. *Psychology and Behavioral Sciences Collection*. Web. 8 Dec. 2016.

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Volberg, Gregor, et al. "Short- And Long-Range Neural Synchrony In Grapheme--Color Synesthesia." *Journal Of Cognitive Neuroscience* 25.7 (2013): 1148-1162. *Academic Search Premier*. Web. 5 Dec. 2016.

Many disagree as to whether the color sensations in synesthesia arise from increased short-range connectivity between the grapheme and color processing brain structures or from decreased effectiveness of inhibitory long-range connections feeding back into visual cortex. This study addressed the issue by examining frequency activity. To test this further they used short frequencies and long frequencies. Because the effects were both found in long-range synchrony and later within the visual processing stream, the results support the idea that reduced inhibition is an important factor for the emergence of synesthetic colors.

Weaver, Donald F., and Cassandra L. A. Hawco. "Geminate Consonant Grapheme-Colour Synaesthesia (Ideesthesia)." *BMC Neurology* 15.1 (2015): 1-4. *Academic Search Premier*. Web. 6 Dec. 2016.

This article is about a study done with someone who has a simple form of grapheme. In this study, Weaver & Hawco develop the effects of altering components of grapheme to see if it will result in a similar or different result as the usual grapheme symptoms. To test this, they select a patient with the least amount of variables to react to. This way the study stays pretty under control. The patient selected only saw colors with the double letters "ll". In this test, they altered the font, words, and color. They also discuss the concept of ideesthesia.

Weiss, Peter H., Andreas Kalckert, and Gereon R. Fink. "Priming Letters By Colors: Evidence For The Bidirectionality Of Grapheme-Color Synesthesia." *Journal Of Cognitive Neuroscience* 21.10 (2009): 2019-2026. *Psychology and Behavioral Sciences Collection*. Web. 8 Dec. 2016.

Until recently, it was assumed that synesthesia occurs strictly unidirectional. Although the perception of a letter induces a color percept in letter color synesthetes, they typically do not report that colors trigger the percept of a letter.

Using a word fragment completion paradigm in 10 letter-color synesthetes, they show that colors can implicitly influence lexical. Data suggests that it strongly supports the mechanisms of cross-modality interactions in the human brain.