| Name(s) | Project Number |
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| **Matthew R. Kelly** | |
| | 22173 |

| Project Title |
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| **Do Realistic Backgrounds Affect the Strength of the Ponzo Illusion?** |

**Abstract**

**Objectives/Goals**
This experiment tested whether or not having realistic background showing depth increases the strength of the Ponzo illusion. The Ponzo illusion is a famous method to show how we perceive depth by using the size of things. The hypothesis was that background that increased the depth that the person thought they saw, such as railroad tracks, would increase the strength of the illusion's effect, while backgronds that suggest no depth will weaken the effect of the illusion.

**Methods/Materials**
One hundred subjects of various ages received test packets containing five stimuli presented in random order. Three showed the Ponzo illusion with realistic backgrounds, and two stimuli presented the illusion with a plain background. The subjects were asked to draw a line near the bottom of the page that they perceived to be the same length as the reference line at the top of the illusion. Then the difference of the two lines was recorded measured to the closest tenth of a centimeter.

**Results**
After all the data were recorded, and put into pomputerized data sheets, the hypothesis was proved to be correct. In two of the three stimuli presenting a realistic background the effect was considerably stronger than the stimuli showing a plain background.

**Conclusions/Discussion**
This information proves that the Ponzo illusion is based on size constancy, the way we perceive illusions by using size and depth cues. This affects both airplane pilots and railroad engineers in particular when they see this illuison while flying or while driving trains along the railroad tracks.

| Summary Statement |
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| This project tests whether or not realistic backgrounds affect the strength of the Ponzo illusion. |

| Help Received |
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| Dr. Harvey Smallman helped with background material. Dr. David Kobus allowed me to come into his college psychology classes to use his students as subjects. My dad helped me understand my data and my mom helped me arrange my poster board. |