Chemophobia and the Relation to Names

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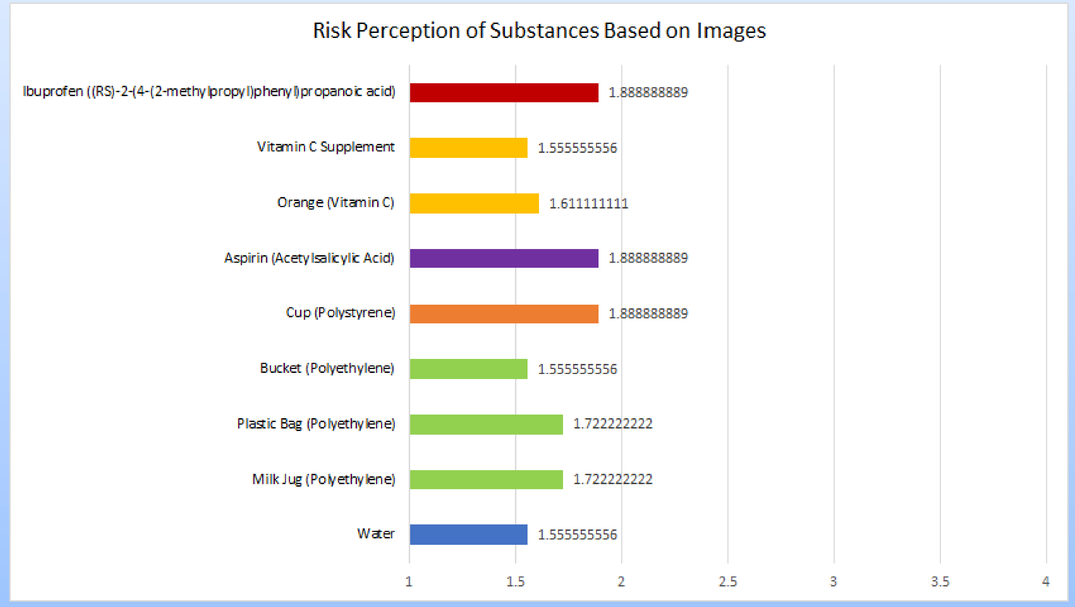
Introduction

Chemophobia is a recently growing cultural phenomena where people are afraid of chemicals in their lives, whether “chemicals” are in their food, their medicines, vaccinations, and other products. People also go to great lengths to “purify” their environment of chemicals, trying in vain to live a chemical-free life. This has led to a change in marketing language; companies offer “ingredients you can pronounce” and organic products that are said to be produced without chemicals An increasing amount of people have a concern about the risk associated with chemicals in their everyday life. This fear is thought to be the source of growth in homeopathic remedies and other “natural” healing methods. Chemistry professionals find the fear of chemical substances to be a bit strange as the laws of Chemistry dictate that all observable matter is made up of chemicals. Chemistry has many systems of naming and understanding chemicals which can exclude people from understanding the risk or lack thereof attributed to materials that are common in daily life. This effect could be accentuated by educational background of both the individual and family. If people were to know more about what is and is not safe, perhaps scientific literacy as a whole could improve. My research investigates if there is a dissonance in people’s perception of substances versus their names.

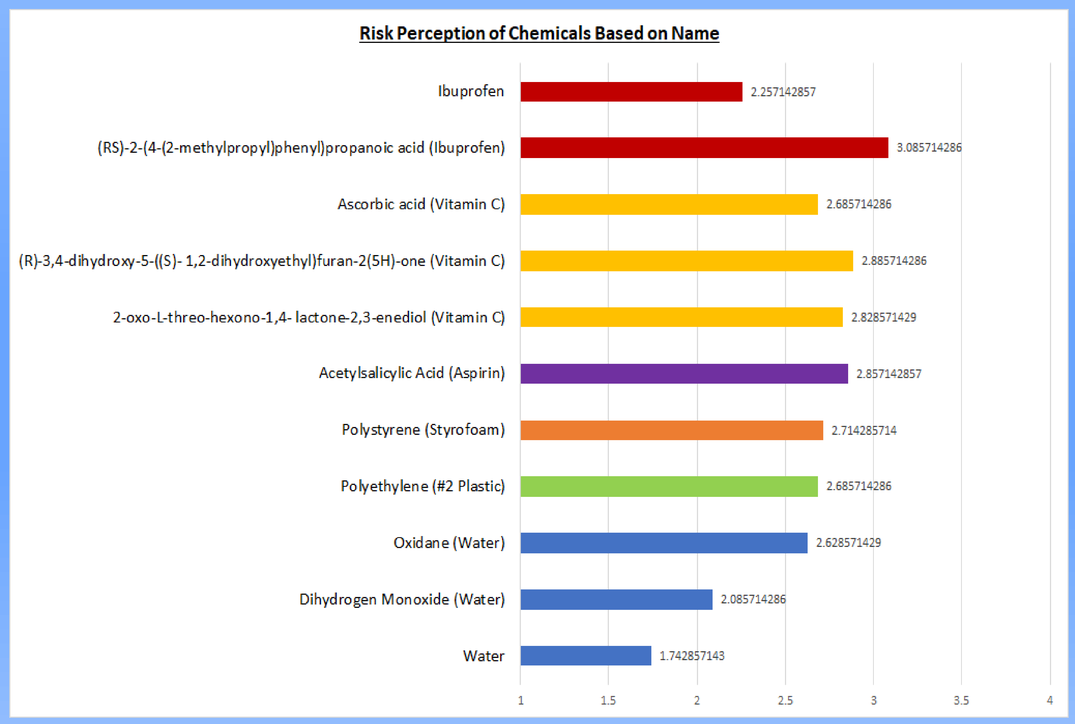
Research Process and Methods

I chose to distribute two surveys Honors students at Tyler Junior College, asking their majors and demographic information. One the first I presented them with the name of a substance and requested that they strongly agree, agree, disagree, or strongly disagree to the statement “Contact with this substance could be hazardous to your health.” with slight variations for clarity purposes. On the second I asked the same question, but gave images of everyday objects. I also interviewed one professor each from three departments: Biology, Chemistry, and English on the effects of language in science. The sample was a convenience sample; given the opportunity I would have gathered A-numbers from all currently enrolled students and randomly selected a group to survey. If I had more time, I also would have interviewed an equal amount of randomly selected professors from both the Humanities and the Natural Sciences. The collected data was analyzed to find if there is a correlation between the complexity of the name and its perceived risk, as well as the difference between the perceived risk of the name of a substance and everyday objects containing the substance. This was then coded as a 1 to 4 scale, with 1 being least dangerous and 4 being highly dangerous. In the analysis, the results were aggregated and averaged to give the mean perceived risk.



Research Question

“Would students associate the complex names of relatively harmless substances found in everyday life with being hazardous?”



Conclusions

After analyzing the data, there is a clear difference in the risk people see in the names of the substances versus what people see in everyday life. In the cases where the substance was the same but the name was more complex, the more complex name was always rated as being more dangerous than the simpler or common name. It was also worth noting that the overall average of the group of images was lower than the average for the names by 0.877. This confirmed my hypothesis that students would associate risk with complex chemical names more than simple names and objects containing those substances. This suggests we should find ways to familiarize non-scientists with chemicals, so that people can have a less negative connotation when thinking of chemicals as well as not be fooled by marketing language.

Conclusions

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