

ERA #2

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INTRODUCTION

Energy drinks have always been a grey area when considering the health of an adult. The high levels of caffeine sugar and other stimulants create an extremely unhealthy mix when consumed regularly or in high amounts. This is then amplified when talking about children as they're still biologically developing and are highly affected by large amounts of such substances. The risk is larger as not only is their body not used to these substances, but they also do not have the mass to consume these amounts and have the expected result from the product. This text will discuss how this product is misused by its consumers and how commonly this misuse is.

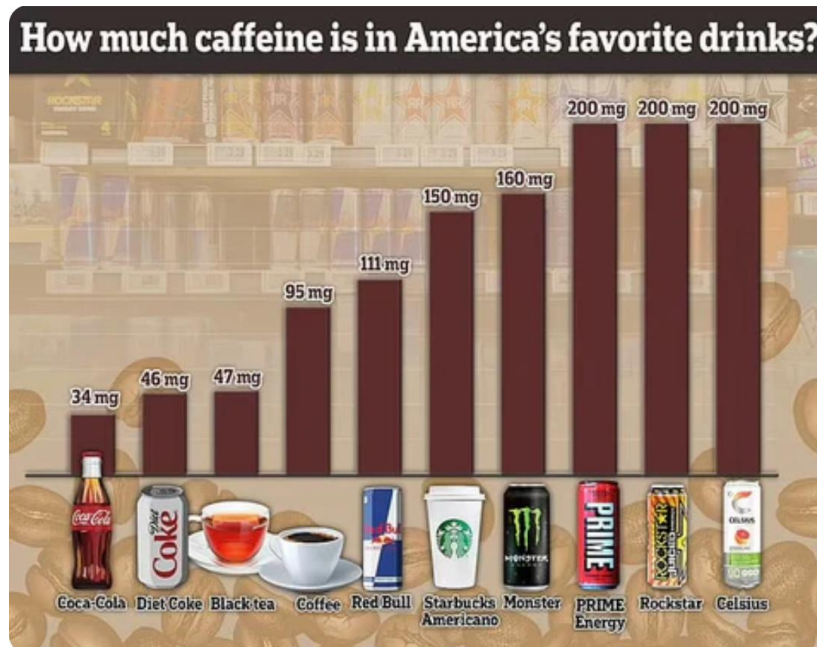
The first extra resource explored was "How Design for Misuse Creates Safer Products" by Leroy Sibanda. This discussed how a product can be designed with human misuse in consideration to create a safer product. This encourages designers to consider more than just a technical solution to their problem and create a solution for edge cases to create a product that considers other aspects such as common misuse.

The second resource explored was "Seven ways to think like a 21st-century economist" by the DEAL team. This was a comparison of the different economic thinking approaches from the 20th century and the transformation towards an improved thinking approach in the 21st century. Improving the way, we approach a problem and change our perspective is one of the most influential changes to creating a sustainable and long-term improved way of thinking.

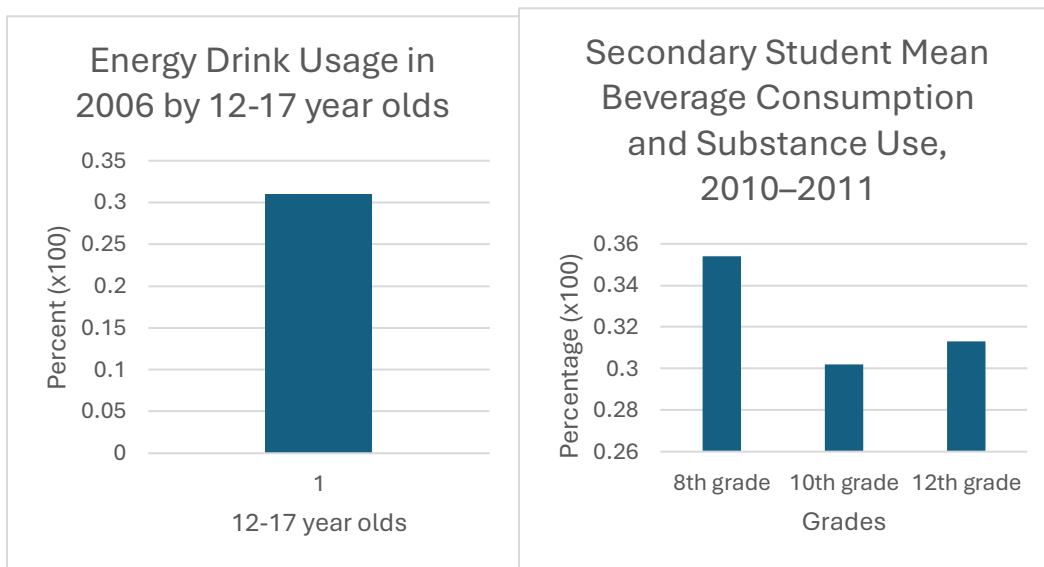
Another resource explored was "Energy drinks, soft drinks, and substance use among US secondary school students" by Yvonne M Terry-McElrath, Patrick M O'Malley and Lloyd D Johnston. This paper included a lot of data discussing the percentage of 8th, 10th and 12th graders which were avid users of energy drinks. The data from this paper was used to create one of the visualization graphs in this assignment.

Finally, the last resource explored was "MAKING WHIPPED CREAM OR GETTING HIGH: PRODUCT MISUSE OR A FAILURE TO WARN?" by Richard J Hunter Jr. and Sandra Solano. This discusses the idea that whipped cream (Whip-it!) is a defective product and who should be responsible for the harm that the misuse can cause to its consumers. This develops the idea that a product should be designed and considered with possible misuse in mind to create a safer product for consumers.

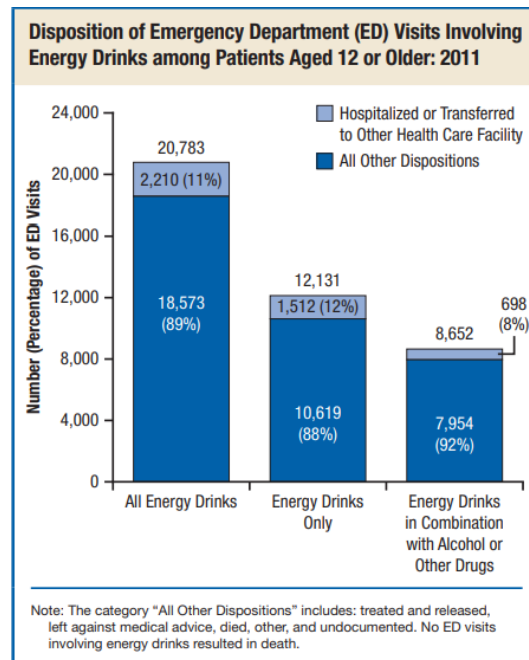
Energy drinks were meant to be used as a temporary boost in energy to combat fatigue. This was done by creating a drink which has an extremely high quantity of caffeine. The following graph shows the comparison of common drinks in America and their caffeine amount:



As we can see, common energy drinks have extremely high amounts of caffeine and can quickly become a concern when misused by using them regularly or in high quantities. This comparison can help people visualize the amount that they're drinking and quantify the values in a way that is easier for people to understand. As discussed in the third resource: "Marketing survey data from 2006 indicated 31% of 12–17 year-olds (28% of 12–14 year olds) were regular ("regular" was not defined) energy drink consumers." This shows how common the use is of the energy drinks and how common they are in young people who are still developing. It also speaks about how "Any energy drinks/shot use was reported by 35% of 8th graders, 30% of 10th graders, and 31% of 12th graders" This data is then put into this graph to compare the two years:



I think this highlights the point that designing a product with misuse in mind is very important as the demographic that you may be targeting could be different than the demographic who uses your product. As the extra resources stated, creating a product with multiple safety barriers in mind should be an important consideration. Energy drinks are an example of a product which was potentially not created with this in mind. The following graph demonstrates how damaging these products are to the group of individuals stated above:



This applies to engineering ethics as it highlights the importance of considering the well being of the public and taking responsibility for their health and safety as is stated in the first rule of APEGA. Without this consideration, the wellbeing of the public can be at risk as demonstrated by the previous graph.

REFERENCES:

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5. “The DAWN Report,” 2014. <https://www.samhsa.gov/data/sites/default/files/spot124-energy-drinks-2014.pdf> ENERGY DRINK HOSPITALIZATIONS GRAPH
6. “How Much Caffeine Is In Coca-Cola Compared to Other Beverages”, Kimecopak September 17th, 2024 <https://www.kimecopak.ca/blogs/cuisine/caffeine-in-coke> CAFFEINE GRAPH