

Thesis Project Portfolio

Liquor-Based Canned Cocktail Production:

Fizzy with the Rizzy

(Technical Report)

The Underbelly of Ballet:

The Exploitative Empire of American Ballet Companies

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science

University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring, 2023

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Executive Summary

Overview

The two projects evaluated in this portfolio are a technical project designing a process for liquor-based canned cocktail production and a network analysis of gendered hierarchies in American ballet companies. The motivation for the technical project is to produce a premium canned cocktail that has improved taste from malt-based hard seltzers, is lower in calorie, and convenient for consuming at home or for entertaining. In evaluating the actors involved in contributing to the gendered hierarchies present in American ballet companies that exploit female dancers, the complex nature of individual actors and their relation to other actors in the network are clearly elucidated. The network analysis provides insight into how to evaluate exploitation as a result of hierarchical structure, which correlates to the food production industry, that is prone to exploitation of workers, and the field of engineering, that is a largely male-dominated field for similar reasons that contribute to the gender asymmetry in American ballet companies.

Technical Project Summary

The canned alcoholic beverage market, including hard seltzers and canned cocktails, is a growing industry largely popularized during the pandemic which enhanced attraction to convenient and fruity cocktail drinks when drinking in bars was largely limited. This technical project encompasses the design of a production process for canned cocktails which includes a distilled liquor base to improve upon the taste of malt based alcoholic seltzer drinks. The design includes fermentation, distillation, carbonation, flavoring, canning, economic viability, and societal considerations. The fermentation process involves sugarcane juice and molasses based very-high gravity fermentation with a high flocculating yeast to withstand osmotic pressure from

the high concentration media. The resulting ethanol is distilled to 80 vol% proof and diluted with deionized water to 8% ABV specification in our product. The resulting liquor base is mixed with carbonated water, natural flavorings (strawberry, lemon-lime, or cranberry), and Stevia as a low-calorie sweetener. The beverages are then canned in 12 oz cans and packaged in cases of 12 with four cans of each flavor. Our economic analysis discerned a gross profit of approximately \$4 million per year and an internal rate of return of 28.3% for our plant location in Raleigh, NC. Like any alcoholic beverage sold on the market, societal concerns mainly involve health related and societal consequences of alcohol consumption including alcoholism, underage drinking, and alcohol poisoning. Despite potential adverse effects of our product on society and individual health, our product will be clearly advertised for of age consumers and warned of potential harm to health and the profitability of our product and likely success due to canned cocktail popularity suggests the viability of our design in the industry.

STS Project Summary

Despite perfect and ideal connotations of ballet, there exist hierarchical and gendered structures in American ballet companies that have persisted since its initial formation. In the 19th century, dancers in the Paris Opera Ballet were sold to wealthy benefactors for sex. Many of the largest American ballet companies today have male artistic directors and choreographers, domineering over a largely female dance company. Misogyny still exists in the idealized pre-pubescent, overly thin ballet body that appeals to the male fantasy of deflowering a virgin, and in the infantilization and discipline of female company dancers. This research paper evaluates the role of the perception of female dancers and capitalism on the establishment of these power structures using actor network theory. Network analysis methodology is used to evaluate journal articles and research studies that identify and codify the role of gender in American ballet

companies as well as the impact of the culture of capitalist exploitation. Many fields including engineering, business, and medicine, exhibit similar power structures, implicit and explicit, that disparage women and other minority groups in American society. This study illuminates the factors that contribute to longstanding systems of power on the basis of sex and provides insight into how they might be dismantled in these other contexts.

Concluding Reflection

In working on these projects simultaneously, I have reflected upon the development of hierarchical power and its impact on society. Hierarchical structures develop naturally in many fields, including in ballet and engineering, but are they formed because of precedented efficiency derived from bureaucratic organization or as a result of natural human tendency to rank and be identified within a group in relation to others. Exploitation seems to be a natural and inevitable result of hierarchical relationships and its consequences vary depending on contexts. Certain groups are predisposed to exploitation or subgrouping as a result of societal habit and culture and the accompanying justifications created to continue those asymmetrical relationships. Is it possible for society to be restructured or reformed to reduce or eliminate exploitation, or is our natural inclination to shifting of power that always results in a losing group? Perhaps it is the knowledge of ourselves relative to others that drives us to continue living with purpose, and is thus the reason for failures of egalitarian societies and the success of capitalist countries.