

Yinghe Zhao

BUF 4700 Critical Argument Paper #2

Dr. Sutton

4/3/23

### **OPTION #2**

In recent years, more and more industrial developments are inseparable from the participation of science, especially the influence of chemistry in its field. Today will focus on the impact of scientific advances and innovations on the beauty industry. In recent years, the beauty industry has grown quickly. As a result, many cosmetics and skin care products, like lipstick and sunscreen, contain chemicals. In the 17th and 18th centuries, scientific advances were involved in the beauty industry, which had a positive influence on some products in the industry, such as cosmetics products, which promoted the continuous improvement and progress in the quality of cosmetics (Phoenix-chem, 2023).

One believes and agrees that the beauty industry would not be as large and influential if scientific advances and innovation had not occurred. One agrees with this argument because scientific innovation has made it easier for people to support, buy, and use products from the beauty industry. Products in the beauty industry are constantly being innovated with the addition of science. Since then, the addition of science and technology has better solved some of the problems that exist in beauty products (safety concerns of cosmetics, such as sensitivity to ingredients) [Cassell, 2020]. Another reason is that most people enjoy trying and exploring new products, which includes one. The involvement of science in the beauty industry may result in a shift in how people think about beauty products. Scientific advances and innovation have had a significant impact on the growth of the beauty industry. Products that use chemistry (chemicals)

seem to be better able to meet or satisfy consumer demand for a certain product because the effect of the product will be more obvious (Cassell, 2020). Hair dye is one example that can demonstrate this point.

However, some people hold different viewpoints. Some people may think that some chemicals found in cosmetics and skin care products are harmful to human skin and health. That is, parabens and phthalates found in cosmetics can interfere with human endocrine function, and parabens may be one of the causes of cancer in humans (Zanolli, 2019). Then, for the reasons stated above, some people will avoid or reduce their use of some beauty products, or they will have doubts about this statement about the scientific advances and innovations that are growing the beauty industry's size and influence. In contrast, one disagrees with the above opinion. Excessive chemicals in the beauty industry may be harmful to human health. The addition of chemistry, on the other hand, will make the product safer to use. Parabens, for example, will give the product a longer shelf life and will also prevent the growth of microorganisms in the product, which will cause some harmful effects on the consumer, such as allergies (Jones & Selinger, 2019). In addition, studies have shown that the chemical content of cosmetics is small, and there is no direct correlation that parabens are one of the reasons that cause people to have cancer (Jones & Selinger, 2019).

Some of the scientific advances that allowed new product development in the industry are: the first is nanotechnology in cosmetics and skin care. Nanotechnology first showed up in cosmetics in 1987, when both Lancome and Dior released products that used nanotechnology (Salvioni, Moreli, Ochoa, Massimo, Fiandra, Palugan, Prospero, and Colombo, 2021). The use of nanotechnology in cosmetics and skin care is a two-edged sword, with both benefits and drawbacks. The advantages are that the stability and texture of the makeup products have

improved, and the nanotechnology penetrates into the skin better than other technologies and materials, such as allowing the product to have a longer-lasting effect on the hair because nanotechnology is most commonly used in haircare products (Enting, 2021). However, the penetration also has a bad impact on human health. It penetrates the skin, which can cause damage to human organs (Hilton, 2018). So, based on this disadvantage, many designers and manufacturers may choose not to use nanotechnology in their beauty products. The second is the use of alpha-hydroxy acids in beauty products. Since the 2000s, alpha-hydroxy acids have been used in beauty products, such as lotions, masks, and sunscreen (Encyclopedia, 2019).

Alpha-hydroxy acids act as cleansing agents for the skin, improving the condition of the skin better, for example, exfoliating (removing the aging skin) [U.S. Food & Drug Administration, 2022]. Alpha-hydroxy acids still have some drawbacks for humans. The disadvantages will harm people's skin, such as sunburn, blisters, and itching on the skin. In order to reduce the occurrence of such incidents as sunburn, experts recommend using sunscreen after using products with alpha-hydroxy acids to reduce the chance of getting sunburned (U.S. Food & Drug Administration, 2022). Protect oneself from the pain of sunburn.

Society, science, technology, and life are also in constant development, are constantly in good development. Even the beauty industry is changing, and some changes cannot happen without the help of science and technology. There are many cutting-edge developments in beauty today; for example, the use of AR (augmented reality) technology allows consumers to try on makeup on their devices; Sephora has this type of technology for consumers (Aranca, 2021). Facial devices, like Neutrogena Mask ID, is another example of cutting-edge developments in the beauty industry. It is a 3D mask that can be printed according to the needs of consumers (Arrington, 2022).

All in all, scientific advances and innovation bring a lot of benefits to both the beauty industry and the consumer. Help the beauty industry gain more popularity. Make the beauty products used by consumers more secure.

## Reference

- Aranca. (2021, July 6). *New Tech in Beauty Industry*. Aranca.com. Retrieved April 2, 2023, from <https://www.aranca.com/knowledge-library/articles/ip-research/new-tech-in-beauty-industry#:~:text=With%20innovations%20in%20skin%20biology,whole%20new%20category%20of%20products>.
- Arrington, K. (2022, November 18). *Beauty & the Geek: How Digital Technology Impacts the Cosmetics Industry*. Authenticjobs.com. Retrieved April 3, 2023, from <https://authenticjobs.com/digital-technology-impact-beauty-industry-ai-vr/#:~:text=The%20impact%20and%20influence%20of,consumer%20intimacy%20with%20younger%20generations>.
- Cassell, T. (2020, April 12). *The Beauty of Science, the Science of Beauty*. Coastsouthwest.com. Retrieved April 1, 2023, from <https://www.coastsouthwest.com/beauty-of-science/#:~:text=Almost%20every%20new%20beauty%20company,their%20demand%20for%20real%20results>.
- Encyclopedia. (2019). *Alpha-hydroxy acids*. Encyclopedia.com. Retrieved April 2, 2023, from <https://www.encyclopedia.com/caregiving/encyclopedias-almanacs-transcripts-and-maps/alpha-hydroxy-acids#:~:text=AHA%20are%20used%20to%20counteract,concentration%20in%20products%20they%20use>.
- Enting, C. (2021, May 4). *Nanoparticles — the Pros and Cons*. Goodmagazine.co.nz. Retrieved April 2, 2023, from <https://goodmagazine.co.nz/nanoparticles-the-pros-and-cons/>
- Hilton, L. (2018, October 29). *Nanotechnology and Cosmeceuticals: The Good, the Bad and the*

Dangerous. Dermatologytimes.com Retrieved April 2, 2023, from

<https://www.dermatologytimes.com/view/nanotechnology-and-cosmeceuticals-good-bad-and-dangerous>

Jones, O., & Selinger, B. (2019, September 19). *The Chemistry of Cosmetics*. Science.org.au.

Retrieved April 1, 2023, from

<https://www.science.org.au/curious/people-medicine/chemistry-cosmetics>

Phoenix-chem. (2023). *The Beauty Industry's Incredible Growth*. Phoenix-chem.com. Retrieved

April 1, 2023, from

<https://phoenix-chem.com/history-and-future-of-cosmetics/>

U.S. Food & Drug Administration (2022, November 22). *Alpha-hydroxy acids*. Fda.gov.

Retrieved April 2, 2023, from

<https://www.fda.gov/cosmetics/cosmetic-ingredients/alpha-hydroxy-acids#:~:text=product%20contains%20AHAs%3F-,Why%20are%20AHAs%20used%20in%20some%20cosmetics%3F,improving%20skin%20condition%20in%20general.>

Salvioni, L., Moreli, L., Ochoa, E., Massimo, L., Fiandra, L., Palugan, L., Prosperi, D., &

Colombo, M. (2021 May 11). *The Emerging Role of Nanotechnology in Skincare*.

Scirncedirect.com Retrieved April 2, 2023, from

<https://www.sciencedirect.com/science/article/pii/S0001868621000786>

Zanolli, L. (2019, May 23). *Pretty Hurts: Are Chemicals in Beauty Products Making Us Ill?*

Theguardian.com. Retrieved April 1, 2023, from

<https://www.theguardian.com/us-news/2019/may/23/are-chemicals-in-beauty-products-making-us-ill>