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**BUF 4700: Beauty Culture, Commerce & Innovation (Contemp. Issues)**

**Critical Argument Paper #2**

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Science, particularly chemistry and biology, has had a significant impact on the beauty industry. In addition, some could contend that the beauty industry wouldn't be as significant and important lacking scientific advancements and development. New advancements in the beauty industry have been made possible by some scientific breakthroughs. The beauty business which includes makeup, hair care and skin care was able to efficiently assist customers in finding the products they were looking for due to a variety of these scientific developments. These technological developments were made in the makeup and skin care businesses in the recent years.

Chemistry is the most crucial component of cosmetic science because all cosmetics contain chemicals. Even the makeup and skincare products that are labelled as "natural" cosmetics include chemicals as well. The analysis of chemicals and their interactions is what this is about. A cosmetic scientist creates formulas for aesthetic and hygienic items as their line of work. Cosmetic chemists operate in manufacturers where they oversee the production operations as well as laboratories where products are created. A cosmetic scientist, begins the process by familiarizing themselves with the various cosmetic raw resources and their functions. Additionally, a cosmetic scientist must understand how to combine the components into a secure and efficient formula (Romanowski, 2022).

In addition to chemistry, biology is researched and utilized in the beauty industry.  Knowing the fundamentals of the biology of skin, nails, and hair is useful because cosmetics are applied on biological surfaces. Cosmetic chemists gain knowledge about hair development, the make-up of hair fibers, and the manner in which self hygiene items can harm and heal it. Cosmetic chemists must comprehend the development of the skin and the composition of its many components. Knowing some of the biochemistry involved in producing skin is also beneficial because some specialized area and natural resources are theorized to engage with biochemical systems to enhance the appearance and texture of skin. Cosmetics have the possibility to harbor harmful germs, thus chemists must take the initiative to screen to prevent contamination. This makes it crucial to understand how bacteria, fungus, and other organisms that can contaminate cosmetics proliferate. The distribution of functional components is made more tolerable with the aid of aesthetic elements. Liquids, thickeners for cosmetics, stabilizers, scents, pH regulators, solvents, additives, visual enhancers, anti-oxidants, anti-irritants, and delivery methods are a few examples of these substances (Romanowski, 2022).

Since the late 2010’s, there have been many celebrities who decided to launch their own beauty brands according to their own skin problems. For example, Selena Gomez worked with cosmetic scientists in order to create a beauty line called “Rare Beauty” in 2020 that was formulated in a specific way that was targeted towards those with dry skin. Selena Gomez herself sufferes from extremely dry skin due to her lupus illness. Rare beauty has liquid foundation, concealers, blush, contour, lipsticks, eyeshadow palettes and much more. Many customers have reviewed her makeup and stated how dewy the products made their skin feel and appear. Her beauty products left customers skin feeling hydrated and radiant instead of feeling dry and dull. Her target audience for her beauty brand are not suited for those with oily skin combination as this heavily oil-based makeup products will make their skin produce more sebum and lead to more acne (Capon, 2022). On the Rare Beauty website, the products are described as a revolutionary long-lasting foundation with “buildable medium coverage” and the “weightlessness of a serum for breathable, layerable wear.” (Beauty, 2022).

Throughout the years, many people have complained how the beauty industry lacks inclusion because they don’t offer that many ranges of dark skin makeup products to choose from. The beauty industry was limited in the various different types of darker shades of foundation, concealer, and contour. In Rihanna's opinion, the makeup that was available for those with dark skin was sometimes too red or too black. She aimed to develop improved foundations for dark skin because the colors didn't work as they should have. That soon became a successful reality when Rihanna Fenty launched her own makeup brand called “Fenty Beauty” in 2017. Customers that purchased the products from makeup company wholeheartedly embraced it with excitement and commended it for being inclusive by providing 40 various foundation, concealer, highlighter, blush and contour tones. It's all about managing color and light, according to Rihanna, and traditional lighting techniques focused on light skin didn't perform as well for dark complexion. She understood that a novel strategy was required. She continued by saying that her cosmetic chemists had observed a violet region in darker skin tones that had previously gone overlooked. Ultramarine blue, which goes deeper but isn't necessarily blacker, is what her team ultimately used to create more ranges of darker shades of makeup products (Bain, 2017).

Another example of how science plays a significant role in the creation of beauty products is the color changing lip products such as lipsticks and lipgloss. Contrary to popular belief, color change is only a function of acidity which is also referred to as pH balance, and has nothing to do with one's mood.  There are lipsticks and lipglosses that have colors that function somewhat like litmus paper.  The lip products colors are feeble, transparent acids. Lips, on the other hand, have a pH that is greater than the lipstick or lipgloss, which stimulates a chemical process that changes the acids into a brightly colored compound. The pH of the skin, which is influenced by physiological elements such as hormone variations and physical activity will determine the precise shade of lipstick or lipgloss. The resulting lipstick or lipgloss tint is also slightly influenced by the color of one's own natural lips (Davies, 2020).

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