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Technological Bodies

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Technological Bodies

How are we changing ourselves for others?

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I. Introduction

The human body: a vessel of health, of life, of expression. Our bodies house systems of complex behaviors, chemical reactions, and intricate biology beyond human comprehension. Internal and external bodily systems allow us to not only survive, but also allow us to perceive the world in our own unique ways. We are stimulated by various external forces; by nature, by modern technological advancements, by other's physical forms. Modern society is full of increasingly unattainable societal expectations and rapidly changing technological advances that impact the ways we view and change ourselves, both physically and mentally. As the world continues to advance in terms of technology, marketing, and advertising, our physical perceptions of the world and one another have changed dramatically. As body image trends change over time, we see a relationship between body dissatisfaction, self-worth, diet, and body modification. Body modification, physically editing the body, can affect other's perceptions of us in context to beauty, societal role, and cultural background. Exploring the role of body image and modification in modern society brings to light the complications and hardships people face while experiencing challenges with body dysmorphia, fatphobia, and extreme societal expectations placed upon us by social media, advertising, and marketing.

II. History of Body Modification

Human bodies are not only a product of nature, but also of culture. They are a vessel of self-expression. Reshaping the human body through body modification has been present in cultures all over the world for thousands of years. This is due to a multitude of reasons including: conforming to specific ideals of beauty, marking social status, or to convey information about one's personal qualities and accomplishments ("Body Modification & Body Image," 2020). For

example, the practice of foot binding in China was exceptionally popular during the Song and Qing dynasties, and was practiced up until the early 20th century. It was performed to convey and enforce female chastity and morality as well as transforming a woman into a fetish, establishing sexual boundaries and expressing social relations (Fan, 2005). Foot binding is an extremely painful and potentially debilitating form of body modification that is an example of physical sacrifice in order to display a social role and convey personal information and status.

Victorian corseting is another example of popularized body modification that conveyed social status and beauty expectations. As a practice, corsetry dates back to the Middle Ages. The corset, in western culture dating back to the 1600s, was a symbol of social ranking and elegance, as well as female sexual empowerment (Erkal, 2017). Corseting is still practiced today and has been made more popular by modern body expectations of having a small waist and wide hips as seen in mass media. The practice of corseting can damage the body, for it compresses abdominal organs leading to poor digestion, atrophies back muscles, and even deforms the ribcage over time (Isaac, 2019). Although these case studies are drastic forms of body modification, there are many practices that are not harmful or extreme. Body modification, throughout history, is not inherently negative. Expressing internal perspectives by external means can be emotionally beneficial for the recipient.

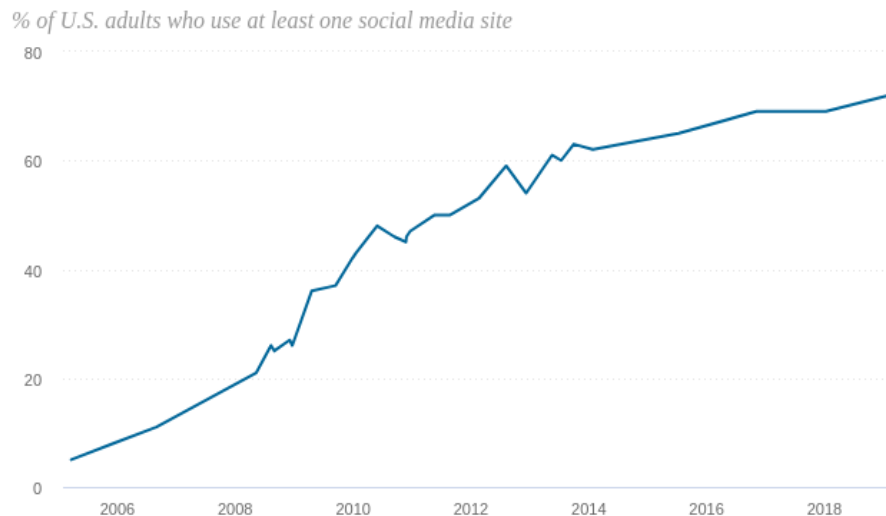
“I wanted to be happy with the skin I was in, so I made myself what I am. It’s very spiritual to have that power. I also have strong beliefs in the significance of modification throughout human history. I feel that it is a part of what makes us human to modify ourselves. I like the feeling of having that connection to the rest of the world, past and present. It’s very grounding to know that while we may be going off the deep end as a culture, I can still have a small link to the people who lived with the land instead of against it.”

- Anonymous (Thomas, 2012)

III. A Modern Age: Social Media and Body Image

With billions of dollars being spent on advertising and marketing in the United States, we are constantly bombarded with media influencing the way we should act, look, and live. In western modern society, such as the United States, technology is a primary platform in which we are heavily exposed to advertising, marketing, and influencing of new trends. As of February of 2019, Pew Research Center recorded that an estimated 72% of US adults use social media, in comparison to 2005, where only a mere 5% had social media. An estimated average of 58.2% of US adults use social media daily. This data includes sites such as Facebook, Snapchat, Instagram, Twitter, and YouTube. This consistent exposure of technological advertising has a great impact in the way we interpret messages about ourselves, body image, and self-worth (Ekern, 2019).

Social media use



Source: Surveys conducted 2005-2019.

Figure 1. Percentage of US adults who use at least one social media site (Pew Research Center, 2020).

Mainstream media is saturated with unrealistic body expectations. Social media users are consistently exposed to impractical body expectations, diet culture, and weight loss messages. A study by Hogue and Mills (2019) investigated the effects of social media usage with 118 undergraduate female participants on young adult women's body image. Participants were split into two groups, where they completed a visual analog scale measurement of body image. One group browsed images on a social media site of an attractive female, and the other saw images of a family member. Using t-tests with the data collected, researchers found that the group engaged in the viewing of the attractive female experienced more negative results on the analog scale measurement of body image. These findings show that comparisons arising from social media promote more negative body image concerns in young women.

Editing apps and filters on social media pictures have made it increasingly difficult to distinguish which images are genuine or falsified. A picture of a person with a socially "ideal" figure may have heavily edited their photograph in order to portray themselves in a specific manner. Filtering, or editing the overall picture by enhancing photographic settings such as brightness, contrast, or aperture, has become exceptionally common on social media and advertisements. Filters are a part of a digital ecosystem that intensify and enhance objectification towards the self and others (Cambre and Lavrence, 2020).

Body dysmorphic disorder, BDD, is an extremely common mental illness, affecting approximately one in 50 Americans (Ramphul and Mejias, 2018). This illness involves obsessive behaviors and skewed perceptions on one's physical form. Ramphul and Mejias (2018) coined the term "Snpachat Dysmorphia," which is a type of BDD directly related to social media

applications (specifically Instagram and Snapchat) that have an immense impact on the body image of users. These researchers studied the role of “Snapchat Dysmorphia” in relationship to plastic surgery. Ramphul and Mejias (2018) interviewed Dr. Yagoda, a plastic surgeon, who reported that many of his clients described their desired looks similar to social media filters that give users the ability to change various aspects of their bodies including the size of their eyes, lips, and nose. Taking part in social media that is consistently saturated in falsehood can greatly impact one’s body image, therefore impacting self-esteem and body satisfaction.

IV. Perceptions of Physical Attractiveness

Though it is not typically positive or beneficial to judge others based on physical attractiveness alone, most people do, whether they admit it or not. Langlois et al. (2000) conducted a meta-analysis of more than 900 effect sizes that support the theory that people are treated differently based on perceived physical attractiveness. Their results demonstrated that attractive children and adults were judged more positively in comparison to unattractive children and adults, even by people who knew them. These judgements can affect perceptions, behavior, and thought processes.

A series of studies done by Kenrick and Gutierrez (1980) tested the effect of media on the rated physical attractiveness of others. The first study gathered 81 undergraduate male participants from Montana State University to watch a film with stereotypically highly attractive female leads (*Charlie’s Angels*), and then rate a picture of a yearbook photograph of an unfamiliar woman on a scale of one through seven, four being the rating of average physical attractiveness. Results showed that men who viewed the film rated the stimulus photograph lower on the physical attractiveness scale. The results were deemed to be statistically significant,

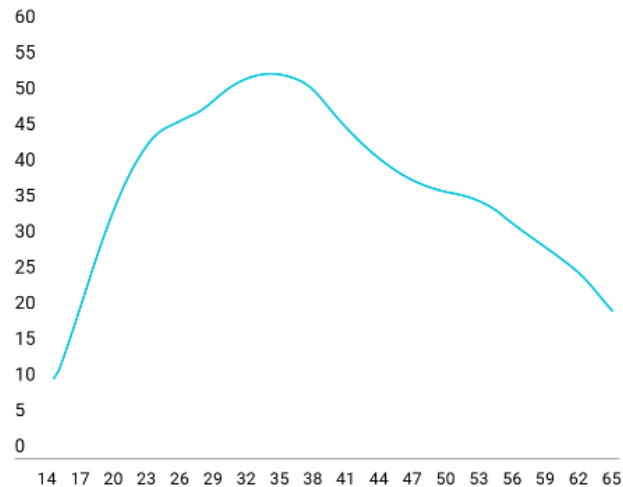
and were attributed to the intense exposure to stimulating media prior to the rating of the yearbook photo of the unfamiliar, non-celebrity woman. In a second study by Kenrick and Gutierrez (1980), 98 undergraduate students (49 females and 49 males) were exposed to pictures of random women and then asked to rate them on an objective attractiveness test. While taking the test, subjects were encouraged to discuss their opinions of the women. This addition to the study allowed researchers to analyze the importance of communication while judging others based on physical attractiveness. Results showed that collaborating between one another resulted in more similar ratings on the test. Conforming to similar ideologies and judgements of perceived attractiveness was shown to influence personal views. The results from these studies support the idea that exposure to media prior to judging others results in harsher criticism of other's objective physical attractiveness.

V. Common Modes of Personal Expression Through Body Modification

Tattooing has existed for centuries, across cultures around the globe. Tattooing is a way to externally display internal perspectives and decorate the body in an artistic, permanent way. A survey of 500 United States citizens age 18-50 years old revealed that 24% had tattoos and 21% of the total respondents reported that they desired obtaining one (Roggenkamp, Nicholls, & Pierre, 2017). 65% of respondents said that they obtained their first tattoo by the age of 24. Tattooing was once considered a cultural taboo in the United States, but now has evolved into a mainstream phenomenon and has become increasingly popular among young adults. A 2016 poll estimated that the popularity of tattoos has increased 20% since 2012 (Zimlich 2017).

Tattoos by Age

% Who have a tattoo, by age (Rolling average)



The results shown are based on a survey of 9,054 internet-connected respondents from Argentina, Australia, Brazil, Canada, Germany, Denmark, Spain, France, the UK, Greece, Israel, Italy, Mexico, Russia, Sweden, Turkey, the USA, and South Africa conducted by Dalia Research in April 2018.

Figure 2. Tattoos by age. Results were collected from a survey of 9,054 participants from 18 countries (Holmes, 2018).

People in the modern age seek out tattooing as a form of self-expression and personal symbolism. Not all tattoos are done for personal expression; they can also portray creative interest and artistic abilities by both the tattoo artist and the person receiving the tattoo. A poll revealed that few respondents with tattoos regretted them, for they make them feel “rebellious, strong, attractive, or spiritual” (Zimlich, 2017).

Piercings are another common form of body modification that is extremely prevalent in today’s society. The practice of ear piercing dates back to nearly 5,000 years ago. Ear piercing was used mainly as a ritualistic practice until the 1960’s, when piercing became more popular

amongst the general population (DeSoto, 2019). Personally, nearly every woman I have met has their ears pierced, often done in their childhood.

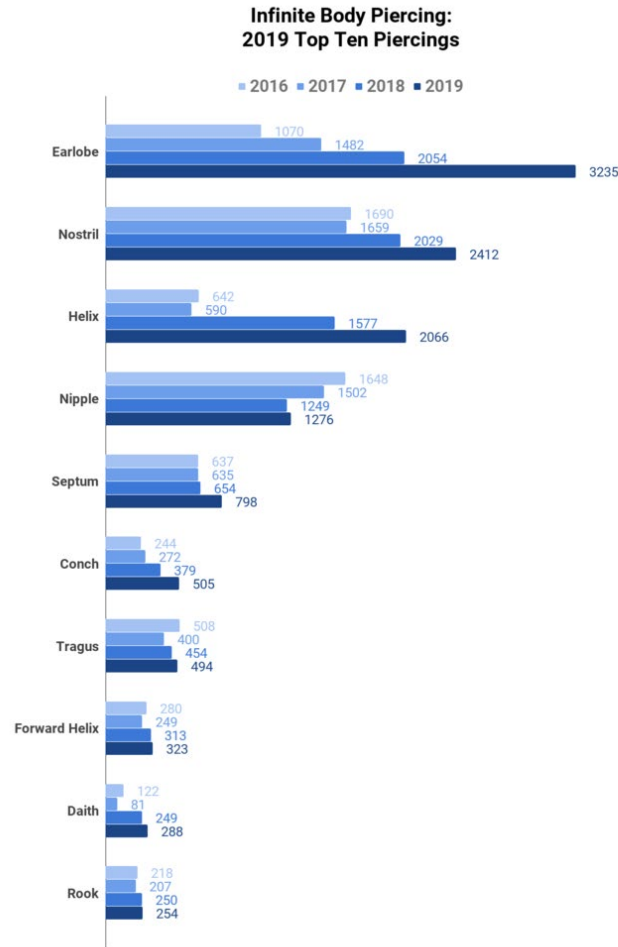


Figure 3. Top ten types of body piercing by a large tattoo parlor chain, Infinite Piercings (Rae, 2020).

Body piercings (piercings other than the earlobe) have also become more common. A study by Laumann (2006) done on 253 women and 247 men between the ages of 18 and 50 revealed that 14% of respondents had body piercings, most of them women. Body piercings are a way to symbolize many things including: sexualizing the body, conveying social status, or to express one self’s personal style and aesthetic. Being able to change our physical appearance

allows us a sense of creative expression and authority over our body. Thomas (2012) conducted a series of interview regarding body modification, specifically piercings and tattoos. The results highlighted the reasoning and personal significance behind body modification.

“Body modification enables me to express the person that I truly am. I feel it is a form of art and flesh is my medium. I wouldn’t say that body modification makes me who I am, but if for some reason I take out my jewelry . . . I feel uncomfortable, I feel naked and I feel as if a crucial part of me is missing.”

- Anonymous (Thomas, 2012)

VI. The Rise of Cosmetic Surgery

In recent years, the plastic surgery industry has grown dramatically. According to the 2019 Plastic Surgery Statistics Report from the American Society of Plastic Surgeons, an estimated 16.7 billion dollars was spent on cosmetic procedures in the United States in 2019 alone. There are many kinds of cosmetic procedures, including everything from invasive surgeries to minimally invasive outpatient procedures. The most common invasive surgical procedure is breast augmentation, which has shown a 41% increase between the years of 2000 to 2019. For minimally invasive cosmetic procedures, the most popular is Botox (Botulinum Toxin Type A) injections, which have shown a staggering 878% increase between the years of 2000 and 2019 (American Society of Plastic Surgeons, 2019).

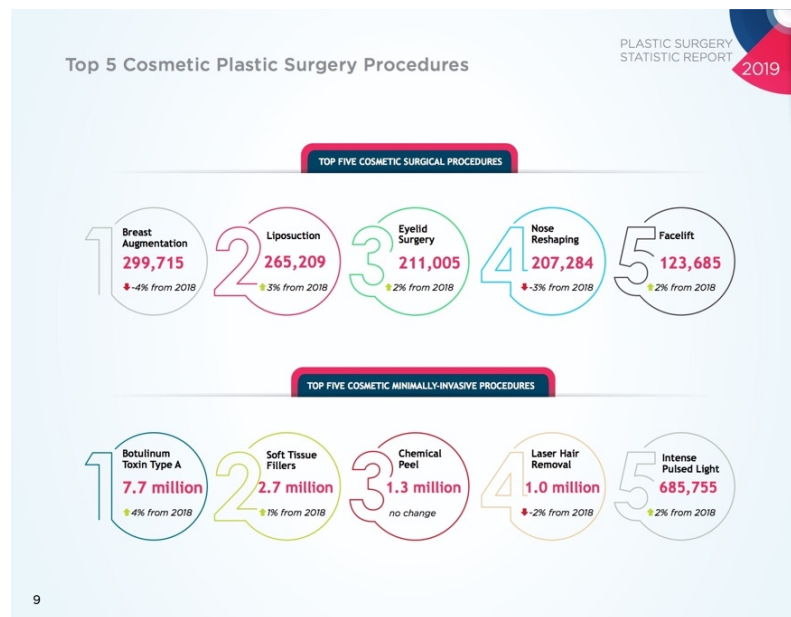


Figure 4. American Society of Plastic Surgeons top five surgical procedures in 2019.

The access to cosmetic surgery is ever-increasing. Not only is it more readily available, but it has become popularized by increasingly unattainable body expectations presented by mass media. Mass media often suggests that females must have thin bodies and pretty faces. While these standards are presented, body dissatisfaction has become ever more common amongst the general population, especially in young women who are exposed to filtered images of what women are expected to look like. A questionnaire of 204 British participants showed that women who rated their life satisfaction, self-rated physical attractiveness, and self-esteem as low, had high media exposure, and little religious beliefs were more likely to get cosmetic surgery (Furnham and Levitas, 2012). Through a regression analysis, researchers found that the most major predictors to seeking out cosmetic surgery are low self-esteem and level of religiousness. Results show that personal ratings of physical attractiveness had a significant effect on the probability of undergoing cosmetic surgical procedures (Furnham and Levitas, 2012).

VII. Disordered Eating and Body Dissatisfaction

Equating self-worth to body image is a growing issue that is not often discussed in casual conversation. Though we do not consciously realize it, we are constantly comparing and mentally attempting to appear and act in a certain way to meet societal expectations. Self-identity and expression has become ingrained in expectations from the external environment. Consumer culture has caused people to place public appearance above overall health. Nutrition has become secondary to diet culture in attempt to meet societal norms and appear to be the most “put-together” and aesthetically aware (Adams, 2007). Dieting to lose or gain weight is a type of body modification we see in everyday society. Diet plays an important role in how we define ourselves. We may even unconsciously choose foods based on our personal experiences and social interactions (Laughlin, 1997).

Mass media is saturated in diet culture. A study by Anderson and DiDomenico (2006) showed that magazines targeting women contained 10.5 times more diet promotions than men’s magazines. Diet promotions are also extremely common on social media and television. There are constantly new types and techniques of dieting that are promoted by the media. These trendy new diets are often referred to as “fad diets.” Some examples of popular fad diets in the last few years include: the keto diet, paleo diet, Weight Watchers, and calorie counter apps. The most technologically based, fad calorie counter apps, are a recent development that allow users to monitor exact caloric intake. Though these apps may be useful (for some) for weight loss or gain, the consistent hyper-awareness of food consumption could lead to obsessive behaviors and disordered eating.

Mass media, including magazines, television, and advertising, have created a social context that can lead to disordered eating, especially in women (Spettigue and Henderson, 2004). Many studies conducted regarding the topic of body image and mass media demonstrate a direct

relationship between media exposure and eating pathology with negative effects (Spettigue and Henderson, 2004). A study by Aparicio-Martinez et al. (2019) showed a significant relationship between disordered eating and body image, use of social media, and desired physique. In addition, their study also showed that body dissatisfaction and the desire to obtain a “thin-ideal” appearance was universal among college women. This “thin-ideal” appearance is widespread in social media, which promotes unhealthy behavior such as disordered eating and increased body dissatisfaction.

Disordered eating is common, especially among young women. Harris et al. (2018) found that 16% of disordered eating is binge eating, 20% purging compensatory behavior, and 61% non-purging behaviors such as skipping meals and restricting food intake. These behaviors have been linked to depression, obesity, and alcohol misuse (Harris et al., 2018). Eating disorders typically develop in late teens or early twenties. This age group is also the most common group to use social media. As of 2015, 89% of US teenagers (age 13-17) and 86% of US young adults (age 18-29) use social media (Harris et al., 2018). Among social media websites, Twitter has become exceedingly popular. It is a popular site to seek out health and dieting information, often tagged with the hashtags “#thinspo” or “fitspo,” meaning inspiring thinness and/or fitness to viewers. Harris et al. (2018) analyzed 1,035 tweets, finding that 67.2% of tagged #thinspo or #fitspo posts were relevant to body image, fitness, or eating disorders. #Thinspo tagged tweets were often posted by individuals and focused on thinness and disordered eating behaviors.

The modern internalized ideology that being slender is the ultimate goal has been increasingly popularized since the 1950’s, when diet culture began to take over advertising and marketing goals. Research shows that media contributes to the development of eating disorders, including anorexia nervosa (Spettigue and Henderson, 2004). People suffering from eating

disorders have the highest mortality rate in comparison to any other mental illness (Jantz, 2018). For example, individuals with severe anorexia nervosa – who have not undergone professional treatment – have nearly a 20% mortality rate due to malnutrition leading to physiological damage (“Eating Disorder Statistics,” 2020). Modifying the body in this way is extremely dangerous, for eating disorders often become chronic and are extremely challenging to recover from.

An article by Nealie Tan Ngo (2019) discusses not only the impact of negative body image on young adults in the United States, but also her personal story that inspired her writing. She writes about how when she was only 10 years old, she visited a mall with her mother. When they walked past a display window filled with prom dresses, her mother said to her: “You’re too fat to wear that.” Ngo tells us that incident, she became obsessed with dieting, with her physical health on the back burner. All she wanted was to be slim like the other girls in her class so she could finally wear that dress. She wanted to prove her mother wrong, that she was “skinny enough, good enough, and worthy enough to fit into that dress” (Ngo, 2019). Young women, even children, are being affected by the societal expectation to be thin. An Australian survey from 2017 of 24,055 young people between the ages of 15 and 19 found that 87.9% of adolescent girls were concerned about their bodies (Bullot et al., 2017).

“Losing weight is easier than changing society.”

- Jennifer Dolan, 2018

Clearly, body modification in response to body dissatisfaction and dysmorphia is extremely dangerous to the health of the individual. A study by Bonioli et al. (2019) researched the connection between adolescent body dissatisfaction and the onset of “risky” health behaviors.

They conducted a study on 2634 females and 1684 males to analyze this relationship. Results showed that females with increased body dissatisfaction were more likely to develop risky health habits including disordered eating, smoking, and drug use. These researchers deemed body dissatisfaction a public health crisis from their results.

VIII. Advocacy

Consistently exposing yourself to extreme societal expectations can be risky for those who already struggle with body image issues. Awareness of social media usage is important to help gauge exposure and the potential negative effects it may have. Understanding how social media and other forms of mass media may affect your body image can be helpful in the prevention of body dysmorphia and physical comparisons to others online. Even if you do not struggle with body image issues or social media comparisons, getting educated on the potential negative effects of social media and technology can help your comprehension of what others are going through when they struggle with these hardships. Teaching youth about nutrition, positive self-image, and the effects of social media would greatly benefit our school systems.

So many young people, especially young women, struggle with body dissatisfaction, depression, and anxiety in silence. Knowing that you are not alone in this hardship is very important. One of the best ways to help others struggling with low self-worth, body dissatisfaction, body dysmorphia, or an eating disorder is to be there for them and show support. Awareness is crucial, for technology will continue to affect how we change ourselves for others.

IX. Hotlines and Resources

Eating disorder and body image help:

- NEDA Helpline – 1-800-931-2237
- ANAD Helpline – 630-557-1330
- <https://www.nationaleatingdisorders.org/learn/help/caregivers> -- Information and advice on how to help others struggling with an eating disorder

Mental illness and suicide prevention:

- National Suicide Prevention Lifeline – 800-273-8255

Social media:

- <https://www.helpguide.org/articles/mental-health/social-media-and-mental-health.htm> --
A quick guide of the positive and negative effects of social media

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