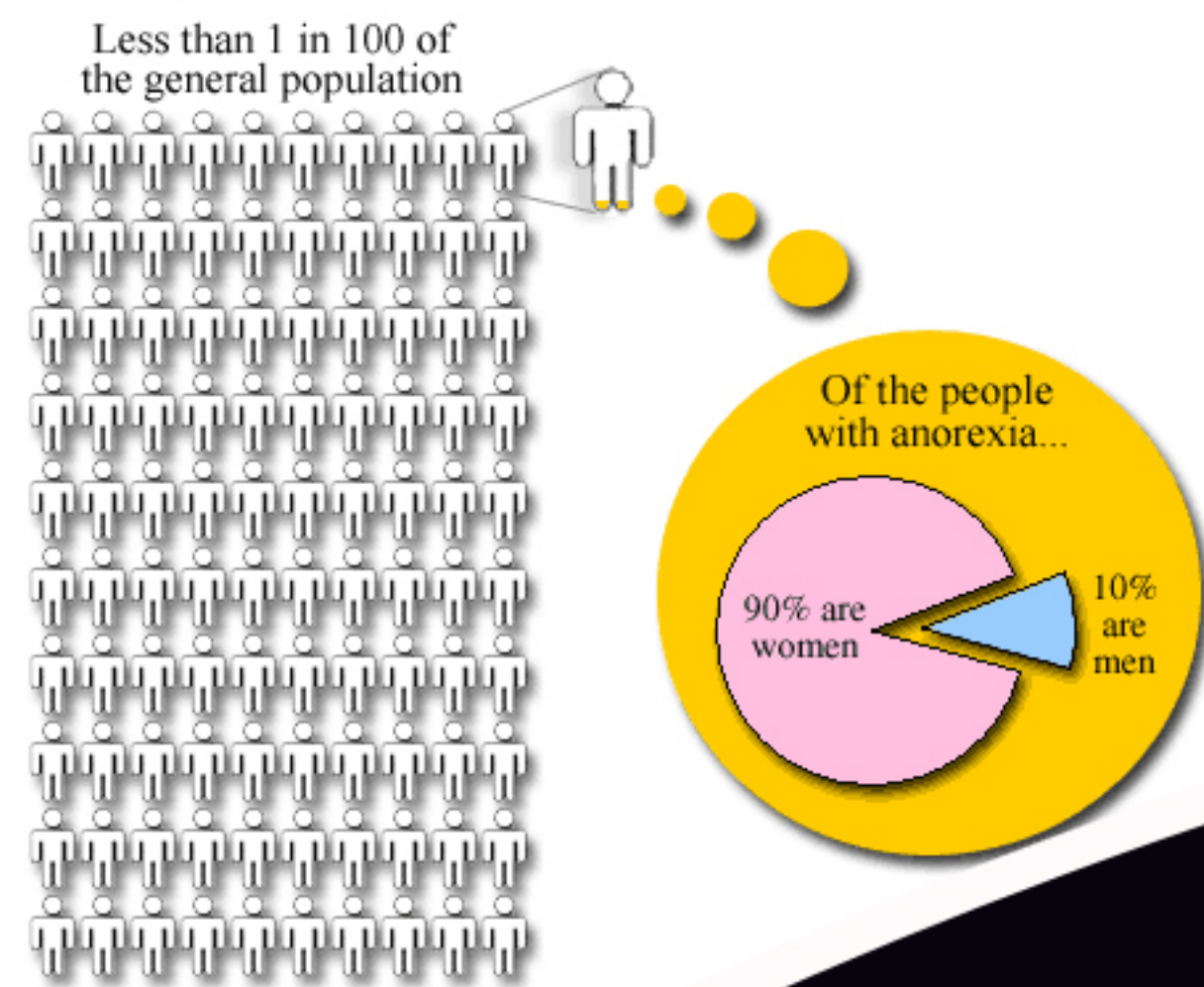


Digital Enhancement of the Female Figure: Harmful Fallacy of Perfection or Fair Marketing Tool?

Background

What happens when women of society see highly enhanced images of women and perceive them as real-life beauties? Reuters Health, a world-wide leader in medical news, stated in an article about eating disorders, "...advertisers heavily market weight-reduction programs and present anorexic young models as the paradigm of sexual desirability.... One study reported that teenage boys and girls who made strong efforts to look like celebrities of the same sex were more likely to be constant dieters." [4]. Although anorexia affects only about one out of one-hundred people, it is a growing disease that's nine times more likely to affect women. Additionally, the United States holds the largest annual mortality rate of anorexics (218 per year in January 2004) than any other country, and has been rising. It is followed by Japan (186), then Germany, then Brazil and Canada [5]. It is possible that digital enhancement technology helps promote this disease.



Before Retouching [2]

The picture to the right has been digitally enhanced such that the model has undergone so-called digital rhinoplasty and hair implants. Also, her face has been reconstructed to look thinner. Her eyes and teeth appear to be whiter; her skin tone is lighter and brighter; and her hair has richer color and contrast in the enhanced photo.



After Retouching [2]

Issue

Supermodel Tyra Banks commented on E! 101 Best Kept Hollywood Secrets that while modeling for Victoria's Secret, a popular lingerie store, her buttocks and thighs looked like someone had squeezed it and it had stayed, "but no one would know that." No one would know that because Hollywood's Best Kept Secret Number 66 is that actresses, actors, and models have their photos digitally retouched [6].

While airbrushing photos has been a photographer's tool for years, software programs such as ADesign, MakeUp Pilot™, AKVIS Stamp, and Adobe Photoshop have raised photo retouching to a new level. While manual airbrushing was commonly used to overlay wrinkles or other skin discolorations; now, software programs actually change a model's face and body structure, overall skin tone, eye color, muscle tone, lack of bone protrusion, and any other attributes seen as flaws.

Combined with women in Hollywood's efforts to be waif-like to fit the fashions, this software produces images of women who have unnatural eye sockets; tan porcelain skin; perfectly symmetrical faces; and elongated, thin bodies; and enlarged breasts. Yet, these images are published in advertisements to portray real Hollywood stars, not cartoon images, to society. This study will examine the use of photo enhancement software and the possible effects it has on society, including phenomena such as Western culture's sales of diet products, Kodak's new slimming camera [7], and the trendy Korean ulzangs who alter web cam photos of themselves.

Experiments Concerning Women and Advertising

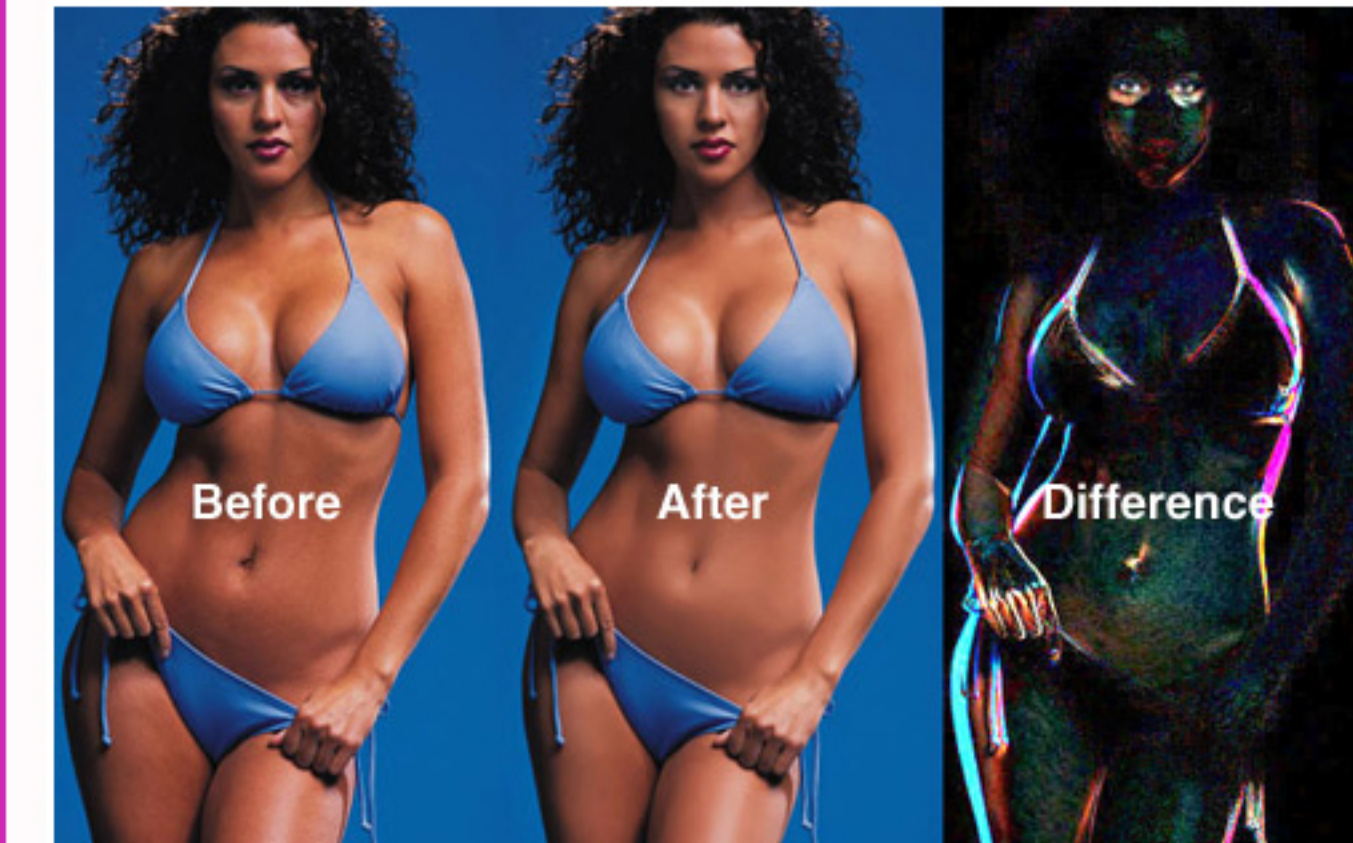
Body dissatisfaction can be defined as one's unhappiness with her appearance or one's distorted view of her appearance; and, it is more frequently diagnosed in women than in men [8]. As body dissatisfaction can culminate into dangerous eating disorders and other behaviors, there have been many studies in the past that attempt to answer how women in become unhappy with their body. Although the actual body enhancing software was not directly addressed, a study at Kenyon College found that an extensive meta-analysis "supports the sociocultural perspective that mass media such as fashion magazines and television products promote, if not establish, a standard of slender beauty that leads many females to feel badly about their weight and shape." [8]. This conclusion stemmed out of the compilation of several studies where women were surveyed about their self perception while viewing pictures of models.

Similarly, a study at the University of Toronto "examined the changes in women's mood states resulting from their viewing pictures in fashion magazines of women who represent the thin ideal." [9]. This study surveyed 118 female college students (mean age of 21) about their own body image. After one week, half of the women, the control group, were shown slides of images that contained no women. The other half were shown images of fashion models from current magazines. Both groups then filled out the survey again. The study found that "women were more depressed ($R^2 = 0.745, p < .05$) and more angry ($R^2 = 0.73, p < .01$) following exposure to slides of female fashion models." [9]. Therefore, the study concluded that the ideal female, as advertised in fashion models today, has a negative effect on women's moods, and probably does aid in causing body dissatisfaction.

While neither of these analyses directly address photo enhancement technologies as an independent variable, their findings suggest that photo enhancement technologies help produce idealistic images of women that negatively affect their mood and self perception. Still, this statement could be further supported by testing women's self perception and mood as in the previous studies while assigning photo enhancement to be the independent variable. That is, one could display several raw photos of models to a control group of females and ask them questions regarding their self perception and mood. Then, one could display the same photos, but enhanced, to a test group of females and ask them the same questions. Considering a large enough sample size, if the test group of females show more body dissatisfaction and negative moods, the study could conclude that photo enhancement software is a technology that has made an impact on the physiology of women in society. (Note: Although this study has not been conducted, a suggested survey for further work is appended to the report supplementing this poster.)



Vogue cover [11]



Before, after, and the changes made during the image enhancement [12]

When making a moral judgement on whether photo enhancement is ethical, one should subject the topic to ethical frameworks to gain a broad outlook. The frameworks that will be analyzed are the following:

1. *Kantianism*, which employs the categorical imperative (no man should be used as a "means to an end" and all actions should be universally sound).
2. *Utilitarianism*, a form of consequentialism that aligns an action with good if it benefits someone (act utilitarianism) or society (rule utilitarianism)
3. *Subjective Relativism*, which allows an individual to be right if he is doing what he considers right.
4. *Social Contract Theory*, "where morality is the result of an implicit agreement among rational beings who understand that there is a tension between self-interest and the common good," [15].

Ethics

In a 2004 Computing and Philosophy Conference, Canberra paper, Aaron Quinn distinguishes between original photo manipulation, while taking a picture, and secondary photo manipulation, changing elements of the photo for the photographer's gain. "The former type of manipulation can be a matter of routine colour correction - changing colour in an image to correct unintended technical flaws - the pejorative form - changes reality for the sake of news and sensationalism or aesthetics." [16]. Quinn goes on to mention journalistic values by Fred Mann, which involve establishing fairness, credibility, accuracy, and news judgement in the photographs. Whether or not these will be applicable to photographic advertisements will be evaluated within ethical frameworks in the supplementary paper.



(Left) Picture CBS released of Katie Couric soon after the broadcasted show she was on here. (Right) The same picture of Couric, obviously edited, released four months later in a magazine owned by CBS [13].

Conclusion

It is difficult to absolutely answer whether digital enhancement of the female figure is a harmful fallacy of perfection or fair marketing tool. Because previous studies reveal that women are adversely affected by images of the thin ideal woman, it can be reasonably conjectured that digital enhancement of the female figure is a harmful fallacy of perfection to all women. Yet, because marketers are not quite photorealistic, their images are not held to the same truthful standards; thus, digital enhancement could be considered to be a fair marketing tool. Expanding upon these viewpoints in ethical frameworks, the supplementary paper concludes that further research should be conducted to determine whether society as a whole benefits from this technology. This research should digital enhancement as the only independent variable to answer the following questions: Do women have negative effects on their mood and their self image when viewing digitally enhanced photos? By how much are women more persuaded to buy a product when it is endorsed using women who have been digitally enhanced? And, does society value the right to market a product with digital enhancement more or less than the possible effect it may have on women? An evaluation of the answers to these questions will determine whether society deems digital enhancement of the female figure as ethical. Finally, this analysis would lend to what kind of policy, if any, should be placed on digital enhancement of the female figure.



Before/After Retouching [1]

Sources

- [1] Nyphoto.com [2] <http://nasonart.com/retouch/retouch3-4/A3M1619.html> [3] AGRAS, W.S. (2001). The eating disorders. In DC Dale, DD Federman, eds., Scientific American Medicine, vol. 3, chap. 13, pp. 1-7. New York: Scientific American. [4] A.D.A.M. INC. 2002. Eating disorders: anorexia and bulimia. Reuters Health. <http://www.reutershealth.com/wellconnected/doc49.html> [5] NATIONMASTER.COM. 2004. Eating disorders by country. Mortality Statistics. http://www.nationmaster.com/graph/mor_eat_dis-mortality-eating-disorders. [6] E! ENTERTAINMENT TELEVISION, INC. 2007. E! 101 best kept hollywood secrets. E! Entertainment Television. [7] LOMBARDI, CANDICE. 2006. Digital cameras focus on revised reality. CNET News.com. http://news.com.com/Digital+cameras+focus+on+revised+reality/2100-1041_3-6110277.html. [8] 7. GROESZ, L.M., LEVINE, M.P., AND MURNEN, S.K. 2001. The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. International Journal of Eating Disorders, 31, 1, 1-16. [9] PINHAS, L., TONER, B. ALI, A., GARFINKEL, P., AND N. STUCKLESS. 1999. The effects of the ideal of female beauty on mood and body satisfaction. International Journal of Eating Disorders, 25, 2, 223-226. [11] <http://www.waldklaus.at/media/3276/41681.jpg>. [12] <http://detouch.org/images/detouch.jpg>. [13] <http://www.mediaabistro.com/tvnewser/original/couricaug29.jpg>. [14] ADOBE SYSTEMS INCORPORATED. 2007. Adobe photoshop CS3: create powerful images with the professional standard. Features. http://www.images.adobe.com/www.adobe.com/products/photoshop/photoshop/pdfs/photoshop_overview.pdf. [15] QUINN, A. 2003. Accepting manipulation or manipulating what's acceptable?. In Selected Papers From Conference on Computers and Philosophy - Volume 37 J. Weckert and Y. Al-Saggaf, Eds. ACM International Conference Proceeding Series, vol. 101. Australian Computer Society, Darlinghurst, Australia, 59-64.

Digital Enhancement Programs

There are many programs that marketers can use to enhance photos. A few such programs include: Adobe® Photoshop®, Corel Paint Shop, ADesign, and AKVIS Stamp. The pictures on the right are screen shots of photo editing within a free trial of MakeUp Pilot™. One can see that there are significant differences in the photos, including skin tone evenness, clarity of complexion, size and color of lips, whiteness of teeth and eyes, number of lines on face, and size of body frame. It is important to note that these photos are not professionally enhanced, which projects how much more believable a professional artists' photo manipulation can be. In addition, MakeUp Pilot® is a very simple program with blurring and color burning capabilities. With more intricate tools, an artist can fully alter the appearance of a model, as seen in the photo of the hair model above, where the photo enhancement has provided digital rhinoplasty and hair extensions.

The most intricate and popular photo editing program for professional photo editors is Adobe® Photoshop® CS3. This software package is equipped with Smart Filters, which are "non-destructive" in that they allow the artist to "visualize changes without offering pixel data." It also contains a Quick Selection tool that allows one to briskly outline the edges that he wants to enhance, and the software will then guess what the artist is intending to define and allow him to choose from many functions such as blur or sharpen to create the effect that he wants. CS3 also offers "enhanced 32-bit high dynamic range (HDR) support," which allows one to work on 32-bit (very large) photos with the fullest available photo contrast. CS3 supports this high quality image processing via new algorithms [14].



Screen shot of a photograph of my friend Sarah (Right) and me (Left) before digital enhancement.



Screen shot of the same photo, enhanced using a program called MakeUp Pilot(R). A trial version of this software can be found at: <http://www.colorpilot.com/makeup.html>.