Effects of Photo Retouching on the Perceived Attractiveness of Female Models

Matt Gordon

The Ohio State University

Abstract

Western culture tends to present media from a "male gaze," a viewpoint that displays women as objects to be judged on their beauty. Advertisements to men and women present the same image: one that men want to have, and one that women want to be in order to be desired by men. Photo retouching has long been considered a large part of creating the image of the ideal woman. This study looks at how large of an effect photo retouching has on increasing models' physical attractiveness. A survey administered to 106 men and 167 women shows no significant change in the perceived attractiveness, healthiness, weight or age of models in unedited and edited images. Furthermore, the survey reveals some interesting differences in how men and women perceive the attractiveness of models.

Effects of Photo Retouching on the Perceived Attractiveness of Female Models

In recent years photo retouching of models has come under heavy fire. Many people are concerned that the editing of models' photos makes their bodies unrealistic. In 2004 a study demonstrated that exposure to thin images of models increases women's body dissatisfaction (Hawkins, Richards, Granley & Stein, 2004). In 2011 the American Medical Association adopted a new policy against retouching photographs "in a manner that could promote unrealistic expectations of appropriate body image" (American Medical Association, 2011). In 2012 a report published on Brandeis University's website discussed the ethics of the photo editing business (Magee, 2012). Western media places a high value on women being attractive, but our society is concerned that this obsession is unhealthy.

The trend of the industry hasn't come without a counterculture push, though. A quick Google search for "Photoshopped models" reveals celebrity image alterations and fashion companies' edits. Dove, maker of beauty products, began their Campaign for Real Beauty in 2004 to "challenge beauty stereotypes" (Dove, 2013). Earlier this year, Dove Canada started (virtual) guerilla warfare against photo editing by creating a fake Photoshop program that reverts all photos back to their original form when applied (Dove Canada, 2013).

This study looks to find out whether or not the retouching of female models' photos significantly enhances their perceived attractiveness. The initial hypothesis suggests that photo retouching will have a significant impact on the perceived attractiveness of models, making them appear more attractive than in reality. I also wish to explore if there are any differences between different demographics in determining attractiveness. If Photoshopping images significantly increases the attractiveness of models, it carries positive and negative implications. For advertisers, it certainly seems useful to continue editing photos if we see a positive impact on the

way photos are viewed. Furthermore, any differences we find in the way people of different demographics view edited photos can help advertisers match their art directive to their target audience. However, if models are perceived as more attractive after Photoshopping, it will also confirm that media images are creating unrealistic expectations of women in our society. This could broaden the debate about the ethics of the practice.

Research Questions

Q1: Will models in edited images appear more attractive and healthy, and will they appear to be younger and weigh less than their counterparts in unedited images?

Q2: Will people be able to tell the difference between an unedited and an edited photo without comparing them?

Q3: Will there be any differences in the way participants of different demographics perceive models' attractiveness, etc., in unedited and edited photos?

Background

In order to understand why photo retouching may or may not make models appear more attractive, we need to examine what is attractive and then look at what changes are made for commercial photo retouching jobs.

The first step in understanding if and why models may be more attractive after the photo editing process is to understand what is attractive. Research in the area has found that attractiveness is a complex concept defined by many factors. These factors can work independently of each other to enhance a person's appearance, but they are all interrelated.

Unfortunately, the body of literature surrounding female physical attractiveness is based solely around men's perceptions of women. This has been referred to as the "male gaze"

("FAQ," 2007). The idea of the male gaze is that women are objects to be viewed in media. Advertisements have particularly followed this idea. Ads targeted at men often sell the women in them more than the product itself, and even ads targeted at women market the women in them as objects of men's desires. In fact, a large reason this study only focuses on female models lies in the relative shortage of available images of male models (unedited ones, in particular).

The base of knowledge on the subject is not lacking, though. Previous research has examined many aspects of female physical attractiveness from a male standpoint. We can divide the research into two categories: facial attractiveness and body attractiveness.

Facial Attractiveness

Four types of physical attributes have been shown to enhance perceived facial attractiveness. First, certain physical feature sizes are considered more attractive (Baudouin & Tiberghien, 2004; Cunningham, 1986; Perrett, May & Yoshikawa, 1994; Perrett, et al., 1998). In Baudouin's and Tiberghien's 2004 study and Cunngham's 1986 study, men viewed images of women and rated them on their perceived attractiveness. The researchers then measured distances between certain facial landmarks on the images of the women and ran regression tests to determine which feature measurements best explained the variations in perceived attractiveness. For example, the distance between the furthest points of each nostril was measured as "nose width." Cunningham defines three types of physical features that are considered attractive: expressive (features that demonstrate emotions in normal nonverbal communication), mature (features that are seen in post-pubescent women), and neonate (features that can be seen in children and babies) (1986).

Expressive features that men find attractive are a wider smile, dilated pupils, higher eyebrows (Baudouin & Tiberghien, 2004; Cunningham, 1986), and thinner eyebrows (Baudouin & Tiberghien, 2004).

Mature features men find attractive are more prominent cheekbones, narrower cheeks, and a thicker upper lip (Baudouin & Tiberghien, 2004; Cunningham, 1986; Perrett, May & Yoshikawa, 1994; Perrett, et al., 1998). These features are linked to increased exposure to estrogen as girls develop through puberty. Perrett, et al., found that men and women were rated more attractive when the secondary sex characteristics linked to the dominant hormone of their sex were exaggerated (1994; 1998).

Neonate features that men find attractive are higher and wider eyes, a smaller chin, and a smaller nose (Baudouin & Tiberghien, 2004; Cunningham, 1986).

While all three of these categories of physical features independently influence perceived attractiveness (Baudouin & Tiberghien, 2004; Cunningham, 1986; Cunningham, Roberts, Barbee & Druen, 1995), expressive and mature features were only statistically significant predictors of whether or not a male would want to hire a certain female for a job (Cunningham, 1986). Neonate features were the only true predictor of sexual preference among men (Cunningham, 1986).

Averageness of facial features is the second physical attribute that contributes to attractiveness (Baudouin & Tiberghien, 2004; Langlois & Roggman, 1990; Perrett, May & Yoshikawa, 1990). An "average feature" is one in which the dimensions of that feature are closer to a mean measurement amongst all women (Langlois, Roggman & Musselman, 1994). Langlois, Roggman and Musselman took 32 images of female faces and had men rate them on their attractiveness. Then, using computer codes, they combined some or all of the faces into

"composite faces" and had men rate the computer-generated images on their attractiveness (1990). Composite faces are rated more attractive than the average rating of multiple single faces (Langlois & Roggman, 1990; Perrett, May & Yoshikawa, 1994).

Facial symmetry is the third physical attribute that contributes to attractiveness (Baudouin & Tiberghien, 2004; Thornhill & Gangestad, 1994). A study by Thornhill and Gangestad measured various attributes of 122 undergraduates. The undergraduates were measured for the same attribute on both their left and right sides. Any difference in measurements was compiled into a fluctuating asymmetry index. Students were then asked about their lifetime sexual experience. Students who had more sexual partners tended to have lower levels of asymmetry (Thornhill & Gangestad, 1994). As Baudouin and Tiberghien suggest, symmetry may be a special case of facial averageness, thus related to the second attribute (2004).

The fourth attribute that contributes to attractiveness is the skin (Fink, Grammer & Thornhill, 2001; Fink, Grammer & Matts, 2006). In 2001 Fink, Grammer and Thornhill altered images of women's faces using photo editing software to display different skin tones and textures. 54 men were then asked to rate each image on the woman's attractiveness. In all cases homogenous skin texture was rated more attractive than skin with visible blemishes (Fink, Grammer & Thornhill, 2001; Fink, Grammer & Matts, 2006). Findings on preference for skin tone have been inconclusive. Some studies suggest men prefer paler skin (Cunningham, Roberts, Barbee & Druen, 1995; Van den Berghe & Frost, 1986, as cited in Fink, Grammer & Thornhill, 2001) while others suggest a preference for slightly darker tones (Fink, Grammer & Thornhill, 2001).

Many people believe that beauty lies in the eyes of the beholder. However, these attributes are measured attractive in different races and by men of different races (Cunningham,

1986; Cunningham, Roberts, Barbee & Druen, 1995; Perrett, May & Yoshikawa, 1994; Perrett, et al., 1998). This suggests that the majority of information on attractiveness is biologically programmed rather than socially programmed. The only major difference we see is in skin coloration (Cunningham, Roberts, Barbee & Druen, 1995; Van den Berghe & Frost, 1986, as cited in Fink, Grammer & Thornhill, 2001), but homogenous skin texture is consistently a determining factor (Fink, Grammer & Thornhill, 2001; Fink, Grammer & Matts, 2006).

Baudouin and Tiberghien suggest that while these four factors all contribute to perceptions of female facial attractiveness, they do not carry the same weight (2004). A factor analysis reveals that averageness best accounts for female attractiveness, but the four factors can influence each other (such as the case of symmetry and averageness) (Baudouin & Tiberghien, 2004).

Bodily Attractiveness

In terms of bodily attributes, results tend to show that culture influences what traits are perceived as attractive. In 2005 Wilson, Tripp and Boland showed men different computer-generated images of women with different waist-to-hip ratios and overall body fat, also known as a body mass index (BMI). Participants tended to rate thinner modes as more attractive than heavier ones, and this had a greater effect on determining attractiveness than maintaining a 70 percent waist-to-hip ratio (which will be discussed later) (Wilson, Tripp & Boland, 2005). In general, less overall body fat is preferred (Singh & Young, 1995; Wilson, Tripp & Boland, 2005; Winkler & Rhodes, 2005) because it signals youthfulness, but the actual amount can change based on a person's social setting (Cunningham, Roberts, Barbee & Druen, 1995; Nelson & Morrison, 2005; Singh & Young, 1995; Swami & Tovée, 2006; Winkler & Rhodes, 2005). Western societies/Caucasian participants tend to prefer lower BMIs than non-Western/non-white

participants (Cunningham, Roberts, Barbee & Druen, 1995; Nelson & Morrison, 2005; Singh & Young, 1995; Winkler & Rhodes, 2005).

This pattern follows the resource scarcity model of attractiveness (Nelson & Morrison, 2005). The resource scarcity model states that people are more attractive if they display they have access to resources necessary for their own and their offspring's survival. For example, a person with slightly more body fat displays they have access to enough food to take care of themselves. Therefore they are perceived as being healthier and able to survive and reproduce. In cultures with lower socio-economic status, slightly heavier women tend to be considered more attractive. In affluent cultures, the logic is slightly backwards. Since everyone has access to resources to survive, people who can maintain a healthy life at a less healthy BMI must be healthier than people who maintain a healthy life at a normal BMI. The same evolutionary psychology plays a role in judgments of male attractiveness based on testosterone exposure (Perrett, et al., 1998).

Resource scarcity can even affect people on an individual level (Nelson & Morrison, 2005; Swami & Tovée, 2006). Male participants were shown pictures of women either right after eating or several hours after eating. Male raters judged heavier women more attractive when they were hungrier after several hours of not eating. This change in preference suggests that what is perceived as attractive in bodily attributes is not consistent within a person over a period of time(Cunningham, Roberts, Barbee & Druen, 1995; Nelson & Morrison, 2005; Singh & Young, 1995; Winkler & Rhodes, 2005).

Other factors do play a role in body attractiveness, though. A waist-to-hip ratio close to 0.7 has been cited as the most attractive WHR in women (Gitter, Lomranz, Saxe & Bar-Tal, 1983; Singh & Young, 1995; Wilson, Tripp & Boland, 2005). While men tend to prefer low

WHRs in women (Gitter, Lomranz, Saxe & Bar-Tal, 1983; Singh & Young, 1995; Wilson, Tripp & Boland, 2005), they tend to be more preferred in thinner women, and small variations from 0.7 do not make huge differences (Wilson, Tripp & Boland, 2005).

Breast size is another factor people expect to play a role in female bodily attractiveness. However, research on preferred breast sizes has been contradictory; men rating women with different breast sizes for attractiveness have yielded different results in different studies (Furnham & Swami, 2007; Gitter, Lomranz, Saxe & Bar-Tal, 1983; Kleinke & Staneski, 1980; Singh & Young, 1995). It may be that just the sex cue of visible breasts is attractive while the actual size is relatively unimportant (Furnham & Swami, 2007). What is consistently found is that the extremes—extremely large and extremely small breasts—are rated least attractive by male participants (Furnham & Swami, 2007; Gitter, Lomranz, Saxe & Bar-Tal, 1983; Kleinke & Staneski, 1980). Buttock size follows the same pattern (Furnham & Swami, 2007).

Leg length is also a factor in body attractiveness (Sorokowski, Sorokowska & Mberira, 2012). However, leg length preferences also tend to follow cultural cues based on evolutionary psychology and what is needed for gathering resources. In the Himba population of Nigeria, a semi-nomadic people, longer legs are more considered more attractive than western culture considers them. The need to travel long distances may have created this cultural ideal since the leg-type preference is better suited for survival in their lifestyle (Sorokowski, Sorokowska & Mberira, 2012).

Preliminary Research

The next step in understanding if and why models may be more attractive in edited photos was to learn what occurs in the process of editing a photo for commercial use. I met with

Carrie Cartwright, an art director at Curv Imaging, to ask her what she does on projects. Curv Imaging does photo retouching, graphics installations, and other visual graphics work for retail companies. Specifically, I wanted to know about what kinds of body modifications and other body touch-ups occur during most photo retouching.

There is a popular idea that models' bodies are drastically altered to make them look thinner, have larger posteriors and breasts, and just look more attractive in general. Based on our conversation, though, projects are not approached with this in mind. Models' body shapes are rarely modified to be more appealing. Cartwright said she's never been asked to dilate anyone's pupils, which Cunningham suggests is attractive in either gender (1986). The majority of body modifications occur to make a model look more natural rather than more attractive. For example, Cartwright said the apparel at photo shoots may not fit the model properly. Body parts will be enlarged or reduced or the clothing will be enlarged or reduced to make the fit appear correct. There is no preference toward any of those options; it is adjusted case by case. Another reason for body modification is to fix camera distortion. Cartwright said the camera lens has a natural hourglass-shaped distortion pattern. Objects in the corners of photos will appear larger in proportion to objects in the middle of photos. Body parts on the periphery will often be made smaller to adjust for this.

Body modifications will occasionally be made for commercial purposes. In these cases, the focus is more on the product than the apparel. In one of the images Cartwright presented the model's lower torso—her lower abdomen and posterior—was pulled out to make it look like she was sticking her rear end out more. The idea was to highlight the panties she was wearing.

Probably the strangest body modification Cartwright does is changing "outie" belly-buttons to "innies" because that specific client asks for it.

The biggest focus in photo retouching jobs tends to be color and shadowing. Often the way the camera flash works and the way the lens takes in light affect the natural colors of the model and apparel. The actual apparel in the photos will be sent to Curv so they can adjust the colors in the photo back to the natural colors of the product. Skin tones are also affected. Minorities can appear to have very red or yellow skin in photos, so work is done to bring colors back to what you would see in real life. White people can also be affected by the camera. Skin can appear blue or gray, so Cartwright lightens the image and add some more red and green to bring it back to normal. Shadows also play a huge role in the photo image. She said lots of shadows can be distracting, so clothing wrinkles and natural skin wrinkles are smoothed out. Sometimes the photo will appear too 2-D, though, so shadows can be added to give more depth and roundness to the image.

Colors will also be adjusted for artistic value. Clients will sometimes ask for different filters and effects to portray a certain idea. One photo was placed through a slight yellow filter to give the impression of bright, warm sunlight. In another photo the contrast was increased substantially to make the model appear "more like porcelain" (Cartwright, 2012).

Methods

273 participants took an online survey about the attractiveness and other physical aspects about models. Participants were recruited through college communication courses, and each self-selected to take the survey. An Institutional Review Board examined the research prior to publishing the survey and deemed it exempt from formal review. Everyone who took the survey was assigned unique participant identification numbers to maintain confidentiality. 106 men and 167 women participated. The average age of participants was 21.6 years old with a standard

deviation of 3 years. 70 percent of participants were white, and 96 percent of participants identified themselves as heterosexual.

15 sets of photographs were used in this survey. Photographs contained images of models in which the majority of their body and head can be seen; this includes their torso, head, arms and upper legs in every case, and occasionally the models' feet and hands could be seen as well. All of the models were female. Each set of photographs contained an unedited image of the model and one that had been edited with photo retouching software, for a total of 30 images. Photos were obtained from Curv Imaging, a visual graphics company, and various stock photographs from the internet. All of the edited photos had been used in a commercial setting prior to being used in this study.

a)   b)

Examples of photos used in the survey. Image A is an unedited photograph. Image B is the edited version.

Participants were randomly assigned to view either 15 unedited images (condition 1) or 15 edited ones (condition 2). They were then asked to rate each model on various aspects of her appearance. Participants were asked 5 questions about each:

1. On a scale from 0 (not at all) to 10 (very), how physically attractive is this model?

2. On a scale from 0 (not at all) to 10 (very), how healthy does this model appear?

3. On a scale from 0 (not at all) to 10 (very), how Photoshopped does this image appear?

4. How much do you think this model weighs (in pounds)?

5. How old do you think this model is (in years)?

Questions 1, 2, 4 and 5 served as measures of attractiveness of the models. Research suggests

that healthiness, weight and age all play an important role in physical attractiveness. Question 3

served as a manipulation check to determine if participants were able to actually notice image

alteration and if that would have any bearing on the perceptions of attractiveness.

Once data was collected, 2 x 2 between-subjects tests were used afterward to determine

significant results between conditions and any interaction effects based on gender. No other

demographic-based effects were calculated due to the small representation of minority groups.

Correlation calculations were also used to determine any connection between the variables of

attractiveness, healthiness, perceived amount of Photoshopping, weight and age.

Results

Reliabilities were calculated for each question across all fifteen models. All of the data

calculated to be reliable (range .85 - .95); no responses to any stimuli were removed.

In testing Q1, results showed no statistically significant difference in perceptions of

attractiveness, healthiness, weight and age when viewing unedited versus edited photos (Table

1).

In testing Q2, there was a significant difference in perceived amount of photo editing

between unedited and edited photos (Table 1).

In testing Q3, results showed interesting differences between responses of male and

female participants in ratings of attractiveness and healthiness. Men tended to perceive models in

edited photos as less attractive and less healthy than their unedited counterparts whereas women

rated models in edited photos as more attractive and healthier (Figures 1 and 2). Neither finding

was significant at a 95 percent confidence level (Table 1), but ratings of attractiveness and

healthiness were significantly positively correlated (Table 3).

Men and women both perceived the average weight and age of models in edited photos to

be lower than that in unedited photos, but men perceived a greater difference between photos

than women did. Men perceived an average loss of 4.7 pounds and 0.5 years of age whereas

women only perceived an average loss of 0.6 pounds and 0.1 years of age (Figures 3 and 4).

Again, the interaction effects were not significant at a 95 percent confidence level (Table 1), but

these two were also significantly positively correlated (Table 3).

Discussion

While I expected to find no significant change in perceived attractiveness, healthiness,

weight, age and Photoshopping, the data revealed a significant increase in perceived amount of

alteration (Table 1). I also expected to find no significant difference between genders in their

perceptions of the images. The data supports this hypothesis (Table 1).

Initially, I thought it best to examine the whole spectrum of factors that influence female

physical attractiveness, but after preliminary research, it became apparent that the photos used

tended to only be altered in terms of skin quality. The study may have provided more interesting

results if I altered images myself using the background information on attractiveness. However, a

strength of this study is in its ecological validity; the images used in the study were used

previously in the commercial environment. The data obtained represents a realistic overview of

the effects of an average photo retouching on the perceived attractiveness of a model.

Perhaps the largest finding of this study is in the lack of a significant increase to the perceived attractiveness and healthiness of Photoshopped models and lack of significant decrease to their perceived weight and age (Table 1). The media would have us believe that altered photographs of models are creating impossible ideals of feminine beauty, but the results suggest differently. This suggests that the models themselves are attractive sans photo editing. The models that frequent our Western media certainly display rare phenotypes for women, but not inhuman ones.

The matter becomes more complicated when we look at the effects of the gender of the participant on their perceptions of the models' attractiveness and healthiness. Men tended to think edited models were less attractive and less healthy than unedited ones whereas women tended to think the opposite (Figures 1 and 2). Men also perceived a significantly greater decrease in weight and age after Photoshop than women did (Figures 3 and 4). Past research suggests that weight is a cue for healthiness; more body fat signals access to resources necessary for survival and the ability to take care of children (Nelson & Morrison, 2005). The sharp decrease in perceived weight may be related to the decrease in perceived healthiness and consequently perceived attractiveness.

When estimating weight and age, men and women again tended to differ in their responses. While both genders perceived a decrease in weight and age, men perceived a difference at least 500 percent greater (Figures 3 and 4). Women traditionally have the advantage in interpreting nonverbal cues (McCornack & Parks, 1990; Rosenthal & DePaulo, 1979), but since the images all contained female models, men may have the advantage in perceiving cues based on physical appearance. In other words, the small changes between unedited and edited photos may be perceived as greater by men simply because their brains pay more attention to the

female figures. Therefore, when it comes to ideals of feminine beauty, perhaps we need to teach women that men don't perceive beauty in the same way, and perhaps we need to teach media the same.

While neither the finding of differences between men and women in perceptions of attractiveness and healthiness nor the finding of differences in perceived weight and age is significant at a 95 percent confidence level (Table 1), some amount of error should be accounted for. Since all of the images have appeared in a commercial setting, we can expect the models to have very similar body and facial attributes. This lack of variability may have made it difficult for the trends in the data to vary enough that we start to see significant differences. Another explanation may simply be the sample size was not large enough; a statistical analysis of the observed power of this study suggests it may have been relatively low.

There has been a counter-culture push from a few companies to combat this expectation of the traditional model. For example, Dove began using larger women, pregnant women and more minorities in 2004 for a branding maneuver that says, "These are actual women who use our products" (Dove, 2013). The question, then, becomes whether or not these "more average" models create just as compelling advertisements. While this study focused only on the claims that photo retouching makes models more attractive, future research should look into the effects of model selection on both our ideals of feminine beauty and consumer behavior.

Although the Photoshopped models may not be more attractive than their unedited counterparts, this study cannot prove that the retouched images don't carry some additional effect. In response to the manipulation check, participants tended to perceive the difference between edited and unedited images. Each participant saw only unedited or only edited photos, so it would be impossible for any individual to compare the two conditions, and we still see a

significant increase in perceived amount of editing (Table 1). This perception most likely occurs on a subconscious level, and it may affect our behavior as consumers. Future research should also delve further into the effects of unedited versus edited images on those behaviors.

Although photo retouching is such a common practice in western media, we need to start asking whether or not it's fulfilling its intended job. The lack of significant change to attractiveness suggests it isn't, but the subconscious identification of edited images suggests it still affects us in other ways. Despite the importance media places on these retouched pictures, the body of research surrounding their effects lacks substance. In the future, we can benefit more from understanding how these images are influencing us and our society. We may see a change in how we deal with teen body-image issues. We may see a change in our cultural definition of beauty. What is clear is that photo retouching is not the culprit, and we need to focus more on the female figures chosen as models.

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Tables and Figures

Table 1

ANOVA Calculations for Significance of Differences

Question	df	F	η^2	p
Attractiveness				
Condition	1	.05	.05	.86
Gender	1	10.21	.91	.19
Condition x Gender	1	1.45	.01	.23
Healthiness				
Condition	1	.18	.15	.75
Gender	1	11.36	.92	.18
Condition x Gender	1	.91	.00	.34
Weight (lbs.)				
Condition	1	1.78	.64	.41
Gender	1	1.40	.58	.44
Condition x Gender	1	2.25	.01	.14
Age (years)				
Condition	1	2.42	.71	.36
Gender	1	17.01	.94	.15
Condition x Gender	1	.62	.00	.43
Photoshopping				
Condition	1	598.56	1.00	.03*
Gender	1	683.23	1.00	.02*
Condition x Gender	1	.10	.00	.92

*$p \leq .05$

Table 2

Mean Values for Variables (by Gender)

Question	Condition 1 (unedited photos)	Condition 2 (edited photos)
Attractive		
Males	7.33	7.16
Females	6.39	6.66
Healthy		
Males	7.55	7.46
Females	6.88	7.09
Weight (lbs.)		
Males	118.31	113.59
Females	118.68	118.01
Age (years)		
Males	25.79	25.27
Females	24.75	24.64

Photoshopping		
Males	3.48	4.11
Females	4.15	4.73

Table 3

Correlations between Question Variables

	Attractiveness	Healthiness	Photoshopping	Weight	Age
Attractiveness	1	.674*	.008	-.008	-.069
Healthiness	.674*	1	-.073	-.007	.013
Photoshopping	.008	-.073	1	.014	.097
Weight	-.008	-.007	.014	1	.308*
Age	-.069	.013	.097	.308*	1

*$p \leq .01$
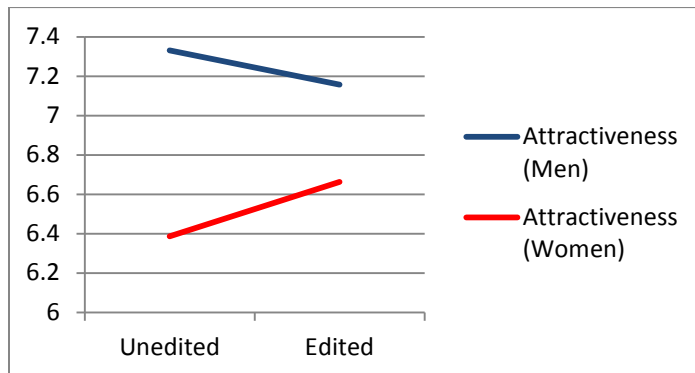
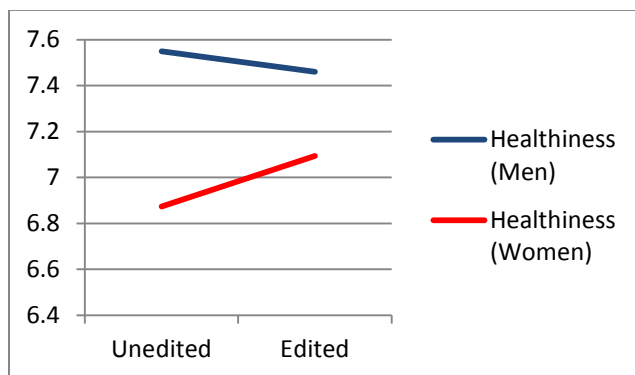*Figure 1.* Change in perceptions of attractiveness based on gender of participant

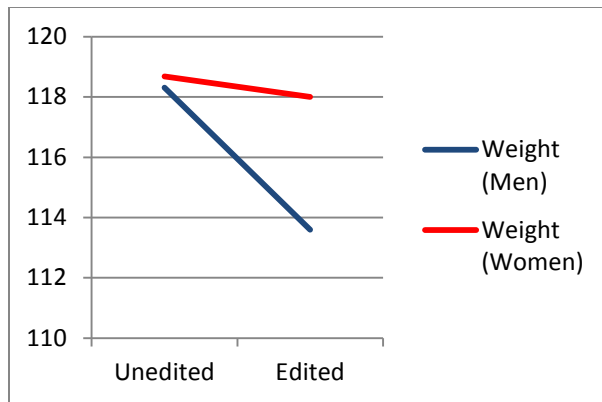*Figure 2.* Change in perceptions of healthiness based on gender of participant

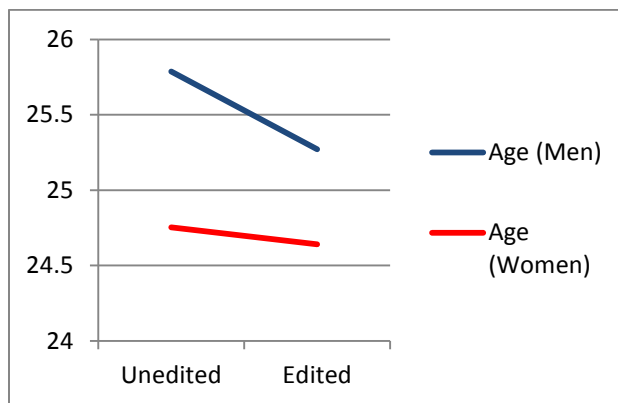*Figure 3.* Change in perceptions of weight based on gender of participant

Figure 4. Change in perceptions of age based on gender of participant