5-1991

Looking at Barbie: Social comparison processes and body esteem among women

Sally Elizabeth Ware
University of Nebraska at Omaha

Follow this and additional works at: https://digitalcommons.unomaha.edu/studentwork
Part of the Psychology Commons

Recommended Citation
https://digitalcommons.unomaha.edu/studentwork/247
LOOKING AT BARBIE:
SOCIAL COMPARISON PROCESSES
AND BODY ESTEEM AMONG WOMEN

A Thesis
Presented to the
Department of Psychology
and the
Faculty of the Graduate College
University of Nebraska

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
University of Nebraska at Omaha

by
Sally Elizabeth Ware

May 1991
THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Master of Arts, University of Nebraska at Omaha.

Committee

Name | Department
--- | ---
James M. Thomas | Psychology
Joyce Ardrey | Communication

Chairman

Date

April 16, 1991
ABSTRACT

In this thesis, three areas are described: the phenomenon of body dissatisfaction among apparently normal-sized women from a sociocultural perspective; social comparison theory, which is proposed to be the mechanism by which the phenomenon operates; and the results of an experiment designed not only to test the nature of the phenomenon itself, but also to test certain components of social comparison theory, such as selection of comparison targets and the role of derogation.

The study reports women's responses to inescapable social comparison on the attribute of body size and shape with two groups of social comparison targets: photographs from popular magazines of (1) thin female models and (2) heavy female models. Thus, examined was a single episode of social comparison with media targets on a single salient dimension—body size and shape.

The hypotheses tested were: (1) women who engage in inescapable social comparison with heavy models will show less decrease in body esteem or mood and less incidence of reporting a feared fat self than will the women who view thin models, and (2) women engaging in inescapable social comparison with thin models may manage that potential threat to their body esteem or well-being by derogating the thin models on perceived traits more than will those women comparing with the heavy models.

The experiment succeeded in operationally testing both hypotheses. The
independent variables were heavy versus thin comparison targets and opportunity versus no opportunity for explicit derogation. The comparison targets differed significantly on body size, but not on attractiveness. The four main dependent variables (body esteem, mood, possible selves, and derogation) were found to have adequate reliabilities and some were from known, validated instruments.

The hypotheses were not supported, although one mood factor, anxiety, was negatively correlated with having an opportunity to derogate ($p = .03$). However, the reliability measure for this mood factor was rather low (Chronbach’s Alpha = .47). The role of media consumption is discussed in relation to social comparison processes.
# TABLE OF CONTENTS

Chapter 1: Introduction ........................................................... 1

Sociocultural Influences ......................................................... 1

Social Comparison Theory ...................................................... 15

  Attributional Aspects of Social Comparison Theory ............. 15

  Evaluation Vs. Enhancement of Self .................................. 19

  Choice of Comparison Other ........................................... 19

  The Role of Derogation in Social Comparison .................... 21

  Social Comparison on the Attractiveness Dimension .......... 22

  Hypotheses ........................................................................ 24

Chapter 2: Method ................................................................. 29

  Subjects ............................................................................. 29

  Materials ............................................................................ 29

  Procedure .......................................................................... 36

Chapter 3: Results ................................................................. 39

  Body Esteem ...................................................................... 39

  Mood ................................................................................. 42

  Derogation ......................................................................... 47

  Possible Selves .................................................................. 50

  Exploratory Variables ..................................................... 53
Chapter 1

Introduction

Melissa Farley, a University of Iowa psychologist, used the famed Barbie doll, whose human proportions would be 39-24-31, as evidence that girls are raised with expectations for their bodies that are impossible to achieve. ("Breast obsession," 1986)

Throughout my adolescence and adulthood, I have heard girls and women lament over their bodies; I have heard them despise their shapes and vow to begin one program or another to change their bodies. I have heard prepubescent girls describe the diets they are on or the technique of vomiting after eating to prevent weight gain. I have seen average-sized girls and women turn themselves into painfully thin dieters, and continue to diet. I have seen "failed" dieters detest themselves for not reaching their goal. I have seen teen-age ballet students using amphetamines to prevent their hunger from causing them to eat.

To what standard of slimness are these people adhering? What has happened to their powers of perception that they can't see that they have already arrived at an adequate level of leanness? Why do so many girls and women obsess about their body size and loathe their own physical selves, "pursu[ing] thinness like a career" (Rodin, Silberstein, & Striegel-Moore, 1985, p. 269). In this study, I will first examine where and how this phenomenon of body dissatisfaction among apparently normal-sized women might have originated,
that is, a sociocultural perspective of the phenomenon. Second, I will discuss in detail social comparison theory, which I propose to be the mechanism by which the phenomenon operates. Finally, I will describe the results of an experiment designed not only to test the nature of the phenomenon itself (e.g., Is body satisfaction modifiable? What individual differences account for more or less body satisfaction?), but also to test certain components of social comparison theory, such as selection of comparison targets and the role of derogation.

**Sociocultural Influences**

In order to establish a position for sociocultural influences on the phenomenon of women's dissatisfaction with their bodies, I will state and support a series of propositions: (1) Women care about appearing attractive; (2) body size and shape are important features of attractiveness; (3) women evaluate the size and shape of their bodies by comparing them with the ideal body; (4) the ideal body is presented in the media by professional models and actresses, the "ideals"; (5) the ideals represent a biased distribution of body size and shape, in the direction of extreme thinness; (6) the media emphasize the thinness of the ideals with explicit verbal messages exhorting women to lose weight and/or become smaller; (7) the majority of women comparing their bodies with the extremely thin ideals will inevitably evaluate their own bodies as bigger or heavier; (8) this evaluation leads most women to feel dissatisfied with
the size and shape of their bodies.

The initial premise is that women care about their appearance, their attractiveness. There is empirical evidence that suggests that women place great attention on their appearance. Rand and Hall (1983) found that women were significantly accurate at assessing their own attractiveness, using judges’ ratings as the criterion, whereas men were not; they also found that the correlations between the overall attractiveness self-ratings and the judges’ ratings were significantly different between male and female subjects. The self-ratings by male and female subjects had very similar means and variances; therefore, the differences between the correlations for male and female subjects were not an artifact of lower variances in the males’ self-ratings. In another study, *Psychology Today* conducted a body image survey among its readership (Cash, Winstead, & Janda, 1986). One of the subscales concerned appearance orientation of the respondents, and only 7% of the women in the response sample indicated that they have little or no concern about their appearance and don’t do much to improve it, leaving, of course, 93% who do care (this survey was a Likert-type agree/disagree instrument). Striegel-Moore, Silberstein, and Rodin (1986) contend that girls learn from an early age and from diverse socialization agents that they should be especially concerned with their appearance because it is particularly important to them as girls; being attractive is an implicit part of pleasing and serving others and will secure the love of
others. Lakoff and Scherr (1984) discuss beauty in terms of the power that it gives women to trade for other things they seek: wealth, security, love. They maintain that by possessing beauty, which is itself useless, women have something that others want or need, and, thus, women have power (albeit an uneasy power that dissipates with time).

The size and shape of a woman's body is an essential aspect of her overall attractiveness. Franzoi and Herzog (1987) had college students rate different body parts for their importance in determining same-sex and opposite-sex attractiveness. The female attractiveness dimension of both male and female judges was significantly dominated by items that had to do with body size and shape: waist, thighs, body build, buttocks, hips, legs, figure or physique, appearance of stomach, and weight. The researchers concluded that a woman's weight is a key aspect in evaluations of her overall attractiveness.

Another study used photographs of women's faces and bodies (at three levels of attractiveness each) factorially combined to determine the role of faces and bodies in judgments of physical attractiveness (Alicke, Smith, & Klotz, 1986). The investigators found two very strong main effects: face and body each contributed significantly to ratings of overall attractiveness. They also found a small but significant face-body interaction: ratings of overall attractiveness for a low-attractive body were low at all three levels of facial attractiveness, but ratings for a medium- or high-attractive body at the three ascending
attractiveness levels for face rose proportionately to the face-only ratings. Thus, although face and body contributed independently to ratings of overall physical attractiveness, the presence of a low-attractive body disproportionately lowered the ratings for a high-attractive face.

How do women evaluate their bodies to assess their own attractiveness? No objective yardstick for beauty exists, so women must use either an internally-generated standard or an externally-generated one. If most women used internally-generated standards for body attractiveness, it is unlikely that there would be high consensus for an "ideal" shape or size within a culture, for individuals would generate their own unique conception of the ideal, and we could expect to see a greater distribution of body sizes considered attractive in the culture. Yet in the U.S. a slim ideal very surely prevails. Perhaps this slim ideal is a universal human preference? Not so. Other cultures and historical periods have admired female bodies that are much fatter than the current American ideal; one has only to look at the female models that Rubens in the seventeenth century and Renoir in the nineteenth century used in such paintings as "The Garden of Love" and "The Judgment of Paris" (subjects dealing explicitly with physical beauty) to see women who were ideals of their day and who are unattractively fat by our standards (Janson, 1971). In this culture, there is a great deal of stigma attached to being a fat woman. An example of that stigma is evident in the title of the journal that published an article called "The Fat
Admirer," (Goode & Preissler, 1983) which describes some of the members of the National Association to Aid Fat Americans, predominantly average-sized men who are attracted to heavy women; this article was published in the interdisciplinary journal Deviant Behavior. Internally-generated standards of beauty would override such social stigma, if they were being used.

Evidently, an externally-generated standard exists and is then internalized by women. Measurement against this standard may occur through the use of social feedback, in which case a woman would evaluate her body by inferring others’ evaluations of it through their speech and behavior (Wegner & Vallacher, 1977). Advertisers and proponents of the fitness business currently in mode certainly send messages to women to slim down and firm up, so it is possible that those women dissatisfied with their bodies are taking those public messages personally to evaluate their figures. On the other hand, some of the women discontented with their bodies are those that have already reached reasonable levels of fitness and leanness and thus probably receive frequent personal, face-to-face messages from men and women that they are physically attractive. Somehow these messages are not being heeded. Women seem not to hear, or accept, the message about which body size men find attractive. This conclusion is supported in a study by Fallon and Rozin (1985), who had male and female undergraduates indicate which of nine male and female figure drawings ranging from fat to thin was the figure most attractive to the opposite
sex and which was the opposite sex figure that they found the most attractive. The women erred in determining the figure most attractive to the opposite sex; women thought that men prefer a thinner female figure than the men actually indicated (the men also erred, thinking women prefer a heavier male figure than the women actually indicated). If social feedback were in operation for such judgments, women would be more likely to identify accurately the figure size that men report they prefer.

If social feedback is not the primary mechanism for self-evaluation, then what is? I posit that social comparison is the primary mechanism. That is, women evaluate their own bodies by comparing them to other women's bodies. I will discuss social comparison theory in detail below after describing the sociocultural influences on women's body dissatisfaction, but for now, suffice it to say that social comparison is the use of social reality (as opposed to physical reality) to evaluate one's own abilities or opinions. However, at this point there exists an inconsistency; body sizes among women are normally distributed within age groups (1979 Build and Blood Pressure Study, 1980), so the average woman engaging in social comparison with women her own age is most likely to see around her many bodies rather like her own, plus some heavier and some thinner; and of course the thinner the woman doing the comparing, the more women she will see with heavier bodies. Such a comparison result, regularly found, ought to lead to body satisfaction. Yet the
average woman these days is bemoaning her "fat" body and rejecting compliments about her attractive figure. Compared to whom does the average-sized woman look fat? The answer is, compared to the representations of the ideal found in the media, the slender women who make their livings as models of beauty. Perhaps women are using the women appearing in the media as their social comparison targets and not using the women around them in the population.

There is evidence to support the notion that some adults construct their world-views in large part based on the view that the media give them, and the view from the television screen is often skewed. Gerbner, Gross, Morgan, and Signorielli (1986) maintain that it is not necessary to be a "heavy" (frequent) viewer in order to be influenced by television's "cultivation" effects, because the messages are stable, the medium is ubiquitous, and what counts in the end is accumulated total exposure, not average daily viewing (however, they do make comparisons between heavy and light viewers, in the absence of non-viewers, who are nearly non-existent). These researchers report that the prime-time world is inhabited by 300 major characters who conduct lives that are in appearance conventional and normal, but are in fact quite unlike the real world. An example of one of the cultivation effects is the finding that television under-represents older people (representing people over 65 only one-fifth of their actual occurrence in the U.S. population), and that heavy viewers are more likely than
light viewers to feel that, compared to 20 years ago, the elderly have decreased in number, are in poorer health, and don't live as long, all perceptions that are contrary to fact (Gerbner et al., 1986). Another example of a cultivation effect of television is in the perception of how violent the world is. According to Gerbner et al., half of television’s prime time major characters are involved in violent action each week, yet in the actual U.S. population, fewer than 1% of the people are victims of violent actions; accordingly, heavy viewers believe that more violence exists in the world than light viewers do.

Perhaps the extreme slenderness of most female major television characters has created another cultivation effect: women (and men) might believe that there are more slender women in the population than there actually are. Silverstein, Perdue, Peterson, and Kelly (1986) investigated the body size of 221 male and female adult characters in highly-rated (Nielsen National Index) weekly television shows. They reported that 69.1% of the female characters were rated as thin, whereas only 17.5% of the male characters were; only 5% of the female but 25.5% of the male characters were rated as heavy. The researchers tested for the possibility that the sex difference in body size was due to age differences (e.g., young female characters and old male characters), but found that it was not. Thus, the majority of the female characters appearing on television are thin, and a very small minority of them are fat, a distribution of body size very unlike that found in the naturally-occurring female population;
furthermore, that particular biased representation relative to the population
distribution does not exist for male television characters, so not everybody is
thin on television, just most of the women.

In today's magazines the ideal female bodies that appear are slimmer than
self-report measurements from Playboy centerfold models from 1959 to 1979 and
compared the yearly mean weights with actual population norms from 1959 and
1979 Society of Actuaries "Build and Blood Pressure Studies." Not only were the
centerfold mean weights statistically significantly less than those of the
population, but also the centerfold means decreased significantly over the
period, while the population means increased significantly between 1959 and
1979 for all heights and ages under 30. The researchers then calculated the
percent of average weight for each model by converting each model's weight
into a percent of the expected weight based upon the Society of Actuaries 1959
norms. Because heights of the centerfold models were increasing, absolute
weight did not decline, but percent of average weight did, dropping from 91%
in 1959 to 83.5% in 1978. In another study, researchers sampled photographs
of women from Ladies Home Journal and Vogue and calculated bust-to-waist
ratios (equivalent to hip-to-waist ratios) from the beginning of the century to
1981 (Silverstein et al., 1986). They found a decreasing nonmonotonic trend in
both magazines, dropping from a high of 2.0 (combined averages) in 1901 to a
low of 1.1 in 1925, then climbing to 1.6 in 1949, finally dropping to 1.3 in 1965, where it has remained steadily ever since. The researchers reported similar findings from their calculations of bust-to-waist ratios of popular actresses from 1933 to 1979. They point out that 30-year-old women have been exposed to that "noncurvaceous standard" (i.e., extremely thin standard) since their early adolescence. Thus, the women of the baby boom and those younger have watched their bodies begin moving away from the current ideal when they entered pubescence and went from having 10% to 15% more body fat than boys to having almost twice as much fat as boys (Striegel-Moore et al., 1986). The boyish or "prepubertal" look of the ideal is extremely difficult to maintain past adolescence unless it is part of an individual's genetic inheritance.

Garner et al. (1980) examined the bodies of the contestants appearing in that most overt televised display of the feminine ideal, the Miss America Pageant, from 1959 through 1978. They calculated the percent of average weight for each contestant using the Society of Actuaries 1959 norms, as described above; they then correlated the change in percent of average weight with the passage of time (years). They found that during that 20-year period, the percent of average weight for all contestants decreased ($r = -.83$), reflecting an average decline in weight of 0.13 kg (0.28 lb) per year. Furthermore, for pageant winners, the percent of average weight decreased ($r = -.62$), reflecting an average decline in weight of 0.17 kg (0.37 lb) per year. Finally, the researchers
report that since 1970, the winners have weighed significantly less than the other contestants of that year.

The ideal women portrayed in magazines are in fact the results of hours and hours of collaborative effort on the parts of hair and clothing stylists, make-up artists, photographers, and in some cases photographic retouchers. "'I am an optical illusion,' says supermodel Clotilde referring to her magical transformation into the natural-looking beauty whom we have come to know in Ralph Lauren ads" (Lakoff & Scherr, 1984, p. 111). The woman living in her own body 24 hours a day will never measure up to the perfection living in the pages of magazines. "'You create an illusion,' says well-known fashion model Janice Dickinson, 'I have no breasts but by holding my body in a certain way I can create a cleavage. You can create cheekbones or take a bump on your nose and make it disappear with makeup'" (Lakoff & Scherr, p. 111). Unlike painted figures of the feminine ideal, which could be argued to be the artist's fantasy, models on television and in magazines may be perceived to be realistic.

Lest female consumers of magazines not get the message that to be beautiful is to be thin, advertisements and articles explicitly state the message. Garner et al. (1980) calculated the frequency of articles concerning dieting for weight loss for the period 1959-78, and found that the number of diet articles has increased over those 20 years ($r = .83$). Silverstein et al. (1986) performed a content analysis of women's and men's magazines and calculated the ratios
of a number of different messages (the ratios are all women's:men's): ads for diet foods, 63:1; body shape ads and articles, 96:12; total food ads, 1,179:15; food articles, 228:10; and ads for alcoholic beverages, 19:624. An interesting paradox emerges: women are exhorted to attend to their body shape carefully, yet are also to study and gain expertise in food and food preparation. Women's magazines are not just more likely to carry more messages about comestibles; men's magazines carry far more messages about alcoholic beverages.

Evidently, this bombardment of messages, both visual and verbal, is having its effect: women are comparing their bodies against a slender ideal. Striegel-Moore et al. (1986) report that several studies document that physically attractive women are perceived by men and women as more feminine, and that the ectomorphic female silhouette is associated with perceived femininity. People conceive of their own physical selves with a "body image", which literally refers to the body as a psychological experience and focuses on the individual's subjective experiences with her or his own body and on the individual's manner of organizing those experiences (McCrea, Summerfield, & Rosen, 1982). Thus people carry two images: the ideal body image and their own body image. "Women measure themselves against the ideal, and most emerge from such comparisons with discrepancies that are viewed as flaws and causes for self-criticism" (Striegel-Moore et al., p. 251).

That women are viewing themselves as flawed (i.e., too big) is supported
by a number of studies. Sixty-five million American adults diet, and two-thirds of them are women (Schlosberg, 1987). Eighty-three percent of men are pleased with their physical appearance, but only 61% of women are pleased with theirs ("Demomemo," 1987). Several studies report that most of their female subjects consider themselves "too fat." A Glamour body image survey ("Feeling fat," 1984) found 75% of its respondents feel too fat. A Psychology Today body image survey (Cash et al., 1986) found that, of women who were actually underweight, 40% classified themselves as normal-weight and 4% as overweight; and, of women who were actually normal-weight, 47% classified themselves as overweight. Fallon and Rozin (1985) had undergraduates respond to questionnaires and figure drawings ranging ordinally from thin to heavy; 69.7% of the women indicated that their current size was larger than their ideal size, and 62.4% indicated that their current size was larger than the size most attractive to men (for the male respondents, their own current size and ideal size were almost identical). Gray (1977) had undergraduates respond to questions about their weight and appearance, and among those who misperceived their weight-related appearance, women were more likely to perceive themselves as overweight than were men. Finally, Harris (1983) found that women were more likely to call themselves overweight and to say they weigh more than their ideal weight than were men.

I have asserted that women care about their body sizes and compare
them to the bodies of women in the media, who represent a biased distribution of body sizes (most extremely slender) and whose representations are accompanied by explicit encouragement to become thin. I have also stated that the inevitable result for the majority of women comparing with media ideals is an evaluation of their own bodies as too big or too fat. At this point, I will examine in detail social comparison theory by addressing several areas: a brief history of the theory, attributional aspects of social comparison, evaluation versus enhancement of the self, choice of comparison targets, and the role of derogation in social comparison.

Social Comparison Theory

Festinger (1954) postulated that humans have a drive to evaluate their own opinions and abilities, thereby creating the accurate self-appraisal necessary for adaptive behavior. When there are no objective standards against which one's abilities and opinions can be measured to assess one's competence or correctness, subjective standards must be used. Such standards exist in the social environment, and assessments are the result of comparisons with appropriate others, that is, those similar on relevant attributes or on the focal attribute itself (Wheeler, Koestner, & Driver, 1982).

Attributional aspects of social comparison. Goethals and Darley (1977) point out that abilities cannot be directly observed, but must be inferred from performances and then must be attributed to the performers; therefore, there
is always an attributional question about the role of nonability factors (e.g., luck, difficulty of task) in inferring others' abilities. Although opinions, or opinion statements, are directly observable (they can be heard or read), they can be determined by a multitude of factors (beliefs, values, likes, etc.) and can be compared to make attributions about underlying characteristics such as intelligence or values. Goethals and Darley cite Kelley's 1973 summary of the basic principles of attribution theory that are pertinent to making attributions for others' opinion statements and performances. These basic principles are covariation, discounting, and augmentation. Covariation of a response to a possible cause includes distinctiveness (not all entities elicit the response), consistency (the entity always elicits the response), and consensus (others react to the entity in the same way). Discounting refers to the existence of other plausible causes for a response, such as luck during performance or personal biases for uttering an opinion statement. Augmentation is the occurrence of anything which suppresses the observed response, thereby giving more reason to attribute the response to the entity.

Goethals and Darley (1977) discuss the ambiguity of some comparisons when a "comparison other" is similar or dissimilar on attributes affecting performance (when evaluating ability) and when the comparison other is similar or dissimilar on attributes affecting beliefs or values (when evaluating opinion). To evaluate an ability without ambiguity, say Goethals and Darley, an individual
must select a comparison other whose performance-related attributes are similar to the individual's. To compare with a similar other means that discounting and augmentation are not likely to play an important role in the attribution of ability. For example, if a pianist wanted to evaluate her ability, she would likely get ambiguous information by comparing with a dissimilar other. If the other were relatively advantaged (e.g., he had had more years of practice), the likely outcome of the comparison is that she will perform less well, but is that outcome because her ability is lower or because of her disadvantage in a related attribute? Similarly, if the other were relatively disadvantaged (e.g., he had had fewer years of practice), the likely outcome of the comparison is that she will perform better, but is that because her ability is greater or because of her advantage over the other?

Opinions can be classified into beliefs and values; beliefs can be "correct" or "verifiable" (such as believing that the weather in Nebraska is variable), and values cannot (such as having the opinion that the weather in Nebraska is unpleasant); many opinion statements are a combination of beliefs and values (such as considering Bonnie Blair to be a superior speed-skater).

When considering comparison others for the evaluation of a belief, an individual will learn little about the correctness of her or his belief if a similar other agrees because the agreement may be a result of a non-entity characteristic that they share and that is a function of their personal biases, not
a function of the entity around which the belief is built; this is the discounting principle. In contrast, if a similar other disagrees, the individual must become less confident that her or his belief is entity-caused, because if the individual's belief about the entity does not covary with the entity across other people, the individual cannot attribute the belief to the entity, but must consider that it is a function of her or his own characteristics; this is the consensus portion of the covariation principle. Considerably more information about the validity of the individual's beliefs is available if he or she compares with a dissimilar other and that other agrees; in this case, there is consensus without the need to discount potential biasing characteristics that the individual possesses. If the dissimilar other disagrees with the individual's belief, the individual can attribute this disagreement to their differences, but will not learn much about the validity of his or her belief.

When values are assessed through social comparison, there is likely to be the most information when comparisons are made with similar others who agree; in this case, one's confidence in one's own opinion is strengthened. If a similar other disagrees, however, the individual will become less confident that the value is entity-caused, as described above for beliefs; this is the consensus problem. On the other hand, if a dissimilar other agrees, the individual learns little about his or her own value because the dissimilarity is based upon underlying attributes that are expected to go into the make-up of the value.
Finally, if a dissimilar other disagrees, little information is gained, as this is the predicted outcome of such a comparison anyway.

**Evaluation versus enhancement of the self.** Goethals and Darley (1977) amend Festinger's hypothesis that humans have a drive to evaluate their abilities and opinions; they posit that humans have an evaluation drive, but that they also have an enhancement drive. Thus, individuals engaging in social comparison have a drive to be accurate plus a competing drive to find that their opinions are correct/good and their abilities high. Obviously, when using social comparison as the measuring stick, the choice of comparison others is the means by which people satisfy both drives.

**Choice of comparison other.** Goethals and Darley were interested in maximum information gain from social comparison when they considered the attributions one makes when comparing with similar or dissimilar others, as described in the preceding paragraphs; these choices of referents presume an evaluation drive. However, there is evidence that individuals will defend their self-esteem in some circumstances by engaging in social comparison with a biased distribution of comparison targets, thus losing the potential for maximizing information gain. For example, Wood, Taylor, and Lichtman (1985) interviewed 78 breast cancer patients and found an overwhelming preponderance of social comparisons with disadvantaged others (i.e., comparisons with other breast cancer patients who had more severe,
debilitating, or distressing experiences with the disease). The patients interviewed were selectively attending to those breast cancer patients who were worse off than they; their comparisons were thus "downward" social comparisons. In this case, the women were comparing with others who were dissimilar on the focal attribute itself (severity of the cancer or surgery and/or problems in adjustment). They were not maximizing information gain through comparison on ability of adjustment or recovery with similar others; instead, they were protecting their self-esteem by "learning" that they were doing very well indeed.

In contrast to these findings, Wheeler et al. (1982) report that when experimental subjects were allowed to select comparison others on the basis of their performance per se (the focal attribute itself), they tended to choose others who were most similar in performance, yet slightly better (these comparisons were on abilities, for which there is a unidirectional drive upward). Such a comparison is likely to yield accurate information about one's own ability plus some information about performances that are slightly (and attainably?) better. Note that comparisons were rarely made with the standard-setters, those performing at the top of the scale. For selection of comparison others on attributes related to ability, Wheeler et al. report that subjects tended to choose others who were highly similar to them; the researchers reason that since related attributes (e.g., practice time for skill at a task) help us foreordain conclusions,
comparing against others in the same "league" gives us the most meaningful information. Finally, Miller (1982) found that female subjects used similarity of physical attractiveness for selecting a comparison other even when that attribute was explicitly not related to the focal attribute, test performance. She suggests that this may be a result of physical attractiveness being a perpetually salient attribute for selection of comparison others because it is integral to a person's social identity; alternatively she suggests that people may compare automatically with others on dimensions they have used frequently in the past. In any case, there seem to be a variety of strategies used for assessing ability: downward comparison (in the case of the cancer patients faced with a threatening circumstance) and comparison with others who are similar or just slightly better (upward comparison) in performance. Gruder (1977) asserts that, in order to find out not only how they stand, but also that their standing is admirable, people want to learn about the standard-setters and thus be able to interpret all the other standings on the dimension; he further suggests that this information about the standard-setters may, after repeated experiences, be internalized and turned into a cognitive standard.

The role of derogation in social comparison. Wills (1981) discusses downward social comparison in depth and states his basic principle, "Persons can increase their subjective well-being through comparison with a less fortunate other," (p. 245), and several corollaries, two of which are, "Downward
comparisons can occur on a passive basis in which persons take advantage of available opportunities for comparison with a less fortunate other," and "Downward comparison can be achieved through active derogation of another person, thereby increasing the psychological distance between the self and the other" (p. 245). He supports the proposition about derogation by citing investigations of "scapegoating," "displaced aggressions," and "hostility generalization"; he says that two common elements are necessary for derogation of a target person: (1) that subjects are presented with an ego threat and (2) that subjects are given an opportunity to express their opinion of the target person. Thus, an individual comparing with a more fortunate or a similar other is apparently able to satisfy the self-enhancement drive by derogating the other on attributes other than the focal attribute.

Social comparison on the attractiveness dimension. Attractiveness is neither an ability nor an opinion; immediately and unavoidably perceived, it is a moderately modifiable attribute that is socially determined and socially learned; however, there is a unidirectional drive upward for attractiveness, just as there is for ability. When women engage in social comparison on the dimension of attractiveness, are they satisfying both the self-evaluation and the self-enhancement drives? To accurately evaluate her body, a woman must learn about the standard (What is the top of the scale?) and about her standing in the distribution (What ranking do I hold?). For the first question, she must scrutinize
the standard-setters until she develops a mental picture of the ideal, a prototype. Then, to answer the second question, she must scan others' bodies to assess where in the distribution she fits; it is reasonable to expect her to compare with the population of others similar on related attributes (e.g., age, race, social status). Very likely, if this comparison with similar others in the population is occurring, it is being swamped by repeated and inescapable upward comparisons with the ideals in the media. These frequent inescapable comparisons might result in a lowering of subjective well-being and of self-esteem for a woman towards her own body (body esteem). On the other hand, women may be satisfying the self-enhancement drive and successfully defending themselves psychologically against this threat to their self-esteem by actively derogating the ever-present standard-setters and thus turning upward comparison into downward comparison.

In this study, I examined women’s responses to inescapable social comparison on the attribute of body size and shape with two groups of social comparison targets: photographs from popular magazines of (1) thin female models and (2) heavy female models. Thus, I was able to examine a single episode of social comparison with media targets on a single salient dimension--body size and shape--by dividing the subjects into three groups and assessing them on four dependent variables (body esteem, mood, derogation of comparison others, and salience of body size and shape), as well as on some
exploratory variables.

**Hypotheses**

The two main hypotheses are as follows: (1) women who engage in inescapable social comparison with heavy models (Heavy condition) will show less decrease in body esteem or mood (subjective well-being) and less incidence of reporting a feared fat self (salience of body size and shape) than will the women who view thin models (Thin condition); and (2) women in the Thin condition may manage that potential threat to their body esteem or well-being by engaging in more active downward comparison, i.e., derogating the thin models on perceived traits, than the women in the Heavy condition. Furthermore, there were two subgroups in the Thin condition to determine whether explicit expression of derogation is necessary to prevent a decrease in body esteem. This question concerning an opportunity to express derogation arises not only from Wills (1981) discussion of the two elements necessary for derogation to function (see above), but also from a study by Swann and Hill (1982) in which they found that subjects who were not given an opportunity to reject and refute feedback disconfirming their self-conceptions changed their self-ratings to be more in line with the self-discrepant feedback. Perhaps women who are presented with an upward comparison opportunity, but given no opportunity to derogate explicitly, will not reap the ego defense benefits that derogation can provide.
There were three conditions in all: (1) a Heavy Evaluative condition (HE), in which subjects viewed and made evaluative ratings about heavy models, (2) a Thin Evaluative condition (TE), in which subjects viewed and made evaluative ratings about thin models, and (3) a Thin Nonevaluative condition (TN), in which subjects viewed and made nonevaluative ratings (such as perceived darkness of hair) about thin models.

Four dependent variables were measured: derogation of models, body esteem, mood, and possible selves (salience of body size and shape). The first three dependent measures were included on logical grounds based on social comparison theory. The fourth, salience of body size and shape, was included to determine whether an inescapable comparison with standard-setters makes especially salient the discrepancy between the subject’s own body and the ideal body. Subjects had an opportunity to list nine "possible selves" that they envisioned for themselves in the future, three hoped-for, three feared, and three expected (Markus & Nurius, 1986). The predictions for the four dependent variables are (a) that TE subjects would derogate models more than HE subjects, (b) that HE subjects would have the highest score on body esteem, followed by subjects in both the TE and the TN condition (who would be equal), (c) that HE subjects would have the highest (most positive) score on mood, followed by TE subjects (who had the opportunity to derogate), and then by TN subjects (who had no derogation opportunity), and (d) that both TE and TN subjects would
mention body size or shape in terms of a feared fat self or a hoped-for thin self more frequently than HE subjects would.

In addition to the four dependent variables, two covariates were investigated that may be related to responses to the social comparison opportunity. One covariate was calculated from the subjects' self-reported height and weight; using the means and standard deviations from national norms for weight for women of all ages and heights (1979 Build and Blood Pressure Study, 1980), a z-score on weight by age and height was computed for each subject. Responses to social comparison opportunities on a particular dimension may be tied to individuals' standings on that dimension; that is, a woman's stable self-concept relative to her body is likely to be a function of her objective body size. Harrison and Ware (1987) analyzed women's gaze time at comparison targets by calculating z-scores based on height and weight for both the subjects and the targets, and found that heavier women spent significantly more time looking at heavier targets (i.e., those more similar in body size) than did thinner women; they also found significant correlations between subjects' z-scores and the z-scores of the targets they rated most attractive; that is, the heavier the subject, the heavier the targets she rated as highly attractive. Perhaps heavier women are inattentive and/or unresponsive to the ideals and more attentive to representations of women who have bodies similar to theirs.

The second covariate measure was the Body Shape Questionnaire, which
provided a score indicating the extent of concern the subjects had about their own body appearance and their desire to change its shape (Cooper, Taylor, Cooper, & Fairburn, 1987). This measure was included on logical grounds, that women who are more concerned about a particular attribute will be more responsive to social comparison on that attribute.

Finally, some exploratory variables were examined to determine whether they interacted with the manipulation of biased distribution of comparison targets. One of these was the subjects’ age. Perhaps younger women have more need to attend carefully to upward social comparison opportunities because they are more uncertain about their appearance (due to inexperience). Or perhaps younger women have had fewer opportunities to achieve in areas other than physical attractiveness and thus consider it a central attribute. Or perhaps they are assessed by others (e.g., young men) on their appearance more than are older women. Another variable was the extent and nature of the subjects’ exposure to the media. Women who never or rarely watch television or read magazines might have either a less-articulated or less-extreme (in thinness) cognitive representation of the ideal or less susceptibility to an inescapable upward comparison, because they have assessed both the ideal and their own standings on attractiveness using real-life women in the population with fewer comparisons with the standard-setters in the media; or, possibly, women who have embraced the media-promoted standard of beauty
enthusiastically consume the media to reinforce their standards. A third variable was the status of any romantic relationships in which the subjects may be involved. It is possible that women who are seeking a romantic partner are more concerned about and sensitive to their relative standing on physical attractiveness than are women who have a steady romantic partner. Another of the exploratory variables was subjects' scores on the Self-Monitoring (SM) Scale (Snyder & Gangestad, 1986). Subjects who engage in more self-monitoring behavior are likely also to be more sensitive to social comparison information; thus, scores on SM provided a covariate for subjects' response to social comparison opportunities. The last exploratory variable was scores on a locus of control (LOC) scale (Levenson, 1981) which comprises three subscales: Internal control of one's own life, Powerful Others' control of one's life, and Chance's or fate's control of one's life (Levenson, 1981). Scores on one subscale of the LOC were examined for interaction with the independent variable of biased social comparison opportunities. The prediction was that low Internal subjects would engage more in social comparison (and score differently in the four dependent measures) than high Internal subjects because low Internals are less likely to carry internally-generated or internally-maintained standards against which they compare themselves.
Subjects

Sixty female undergraduates from psychology classes were invited to participate in the experiment for extra credit. Fifty of the subjects indicated they were White (83%), six indicated they were Black (10%), three that they were Asian (5%), and one that she was Hispanic (2%). The subjects ranged in age from 17 to 40 years, with a mean age of 22.5 years, and a standard deviation of 5.26 years. The subjects' mean z-score for body size (self-reported height and weight compared to norm tables [1979 Build and Blood Pressure Study, 1980]) was .11. The HE z-score mean was .31, the TE mean was .23, and the TN mean was -.22. Sign-up sheets were posted for the general pre-test session, and at that time appointments were set up for the individual experimental sessions.

Materials

At the general pre-test session, the subjects completed five paper-and-pencil measures. The first comprised questions about the subjects' age, height and weight, the extent and nature of their exposure to the media, and the status of any romantic relationships in which they might be involved (see Appendix A).

The second measure was the Self-Monitoring (SM) Scale (Snyder & Gangestad, 1986). This scale measures three factors that make up the
self-monitoring variable: expressive self-control, social stage-presence, and other-directed self-presentation (see Appendix B). An internal consistency (coefficient alpha) of +.70 was found by the researchers (Snyder & Gangestad, 1986).

The third measure in the general pre-test session was the Body Esteem Scale (BES) developed by Franzoi and Shields (1984). They developed this scale from an existing one by Secord and Jourard from 1953 and further analyzed its components, reducing the number of items and determining its principal factors for women and men. For women, the BES has three factors: weight control and body proportions, facial features, and general health. The weight concern factor (of interest here) included appetite, waist, thighs, body build, buttocks, hips, legs, figure or physique, appearance of stomach, and weight, essentially all body aspects that can be physically altered through exercise or food intake. The alpha coefficient was .87 for the weight concern factor among female samples (Franzoi & Shields, 1984). For this study, the subjects completed the full BES at the pre-test and following the experimental manipulation; the weight concern subscale scores were treated as pre and post repeated measures scores. In order to encourage subjects to differentiate between their usual attitude towards their bodies and their attitude following the experimental manipulation, the wording differed slightly between the two administrations: for the pre-test, the wording elicited trait-like responses (e.g.,
How do you usually feel about this body part?), whereas for the post-test, the wording elicited state-like responses (e.g., How do you feel right now about this body part?) (see Appendix C).

The fourth measure at the pre-test was a locus of control (LOC) measure developed by Levenson (1981). This 24-item instrument is actually composed of three subscales of 8 items each: the Internal scale (I Scale), which measures the extent to which people conceive of having control over their own lives; the Powerful Others scale (P Scale), which measures people’s belief that others have control over the events in their lives; and the Chance scale (C Scale), which measures people’s perceptions of chance or fate controlling their lives (see Appendix D). For the Internal scale, Levenson found the Kuder-Richardson to be .64.

The last measure during the general pre-test session was the Body Shape Questionnaire (BSQ) developed by Cooper et al. (1987) to investigate concerns about body shape for young women in western cultures. This 34-item instrument provides a measure of the extent of psychopathology (e.g., anorexia nervosa); this measure has been normed on both non-patients and eating-disorder patients (see Appendix E). Tests of concurrent validity found significant correlations between the BSQ and other measures of body concern: BSQ and Eating Attitudes Test with bulimia nervosa patients ($r = .35, p < .02$); BSQ and Eating Attitudes Test with non-patients ($r = .61, p < .001$); and BSQ and Body
Dissatisfaction Scale of the Eating Disorder Inventory with bulimia nervosa patients ($r = .66$, $p < .001$).

The experimental session contained a number of different materials and items, some of which were used during the social comparison opportunity and some during the post-testing period. The social comparison targets were photographs of female models clipped from current popular magazines and catalogues (e.g., Vogue, Spiegel's, Good Housekeeping, Big Beautiful Woman) and pilot-tested in the following manner. In order to sort the images into two groups differing on a single major variable (heaviness of model), three videotaped versions of 57 models in random order were compiled (20-30 seconds for each image); the versions differed only in the order in which the models were presented. Twelve subjects viewed version 1, seven viewed version 2, and sixteen viewed version 3 ($N = 35$). These subjects viewed the videotape and rated each of the 57 images on these six dimensions during the 20-30 second exposure time: Body Size of model, attractiveness of Face, attractiveness of Body, attractiveness of Clothes or outfit, Overall Attractiveness of model, and Similarity of the model to the subject herself. The response format for these ratings was 1 to 7. The 35 subjects’ ratings for each model on each dimension were summed and divided by the $n$ for that response (some data were missing due to nonresponse) to create six mean scores for each of the 57 models; all sorting and matching was performed using these mean
scores. In other words, 342 individual distributions (57 models X 6 dimensions) were calculated. The average standard error of the mean for the six dimensions across the models ranges from .068 (for Similarity) to .177 (for Body Size), suggesting good inter-rater agreement for the estimates of the six dimensions for each model. Body Attractiveness and Body Size were negatively correlated with one another (r = -.907, p = .0001), and because initial sorting was according to Body Size, Body Attractiveness was not used for any later matching or sorting. The aforementioned first sorting was achieved by splitting the 57 models on their Body Size score at the median, thus creating two groups, heavy and thin models. A regression analysis revealed that the Overall Attractiveness rating was a function of the ratings on Face and Clothes (R-square = .934, p < .0001); both Face and Clothes contributed significant unique portions to that R-square. Therefore, individual models from each group were matched on Face and Clothes ratings first, with a follow-up check that the Overall ratings also matched. Seventeen matched pairs resulted from this process (using 34 of the 57 stimuli). An analysis of variance on these 34 images revealed a significant difference between the two groups on Body Size (F (1,32) = 86.47, p < .0001) and on Body Attractiveness (F (1,32) = 20.82, p < .0001). No significant differences were found between the two groups on Face (F (1,32) = .01, p = .94), on Clothes (F (1,32) = .05, p = .82), on Overall Attractiveness (F (1,32) = 3.15, p = .086), and on Similarity (F (1,32) = .59, p = .45). Note that Overall
Attractiveness is marginally significant ($p = .086$); this is a logical finding, considering that attractiveness of one's body is logically related to judgments of overall attractiveness, and that Body Attractiveness and Body Size were significantly correlated. The 34 photographs used in the experimental sessions were individually mounted on paper and numbered: the heavy model photos were affixed in random order to a large poster board for the HE condition, and the same for the thin model photos for the TE and TN conditions.

During the social comparison portion of the experimental session, the subjects completed two rating forms. The first was a Model Rating form (see Appendix F), which provided HE and TE subjects with an opportunity to derogate the models. The attributes in this measure were ones that do not figure in fat/thin stereotypes in this culture. From a list of traits attributed to female somatotypes (Hill, 1975), five evaluative attributes were selected (pleasant, dependable, likable, truthful, and wise); they were not assigned significantly differently to ectomorphic versus mesomorphic versus endomorphic female silhouettes in Hill's study. Subjects in the TN condition completed a nonevaluative Model Rating form (see Appendix G) that occupied them for roughly the same amount of time taken for the evaluative Model Rating form.

The second rating form gauged the subjects' internal responses to the social comparison opportunity through three separate measures. The first measure was the Possible Selves (PS) measure (see Appendix I); it was pilot
tested along with the models’ photographs in order to obtain a base rate of response in the University of Nebraska at Omaha population of female students. This measure is one that Markus and Nurius (1986) developed to study self-concept, although it has not been formally constructed and no psychometrics are available for it. They state that possible selves are those "pictures" of the self in the past and in the future which are freely created by the individual, but also formed by the individual's historical and sociocultural context. Markus and Nurius suggest that an individual's stated possible selves provide a current view of the self that is highly responsive to changes in the environment.

The second measure in the post-test was Nowlis' (1968) Mood Adjective Check List (MACL). Nowlis identified 12 factors, represented by 49 adjectives. For this study, an abbreviated version of the MACL was used, addressing only those six factors believed to be affected by a biased social comparison opportunity (see Appendix J). The Kuder-Richardson 20 estimates of internal consistency ranged from .80 to .91. The test-retest correlations had an extremely wide range (from .07 to .78), which is Nowlis justifies by stating the fact that the MACL measures mood change, which can occur in as little time as it takes to readminister the test. If one is feeling unhappy about one's appearance, one is likely to score low on the factors of Surgency, Elation, and Vigor, and to score high on the factors of Fatigue, Anxiety, and Sadness. This
statement is based on the responses female colleagues have made to the question, "How would you feel or what would you want to do if you were at a swimming party and you were the fattest one there?" Their responses were that they would want to go home, not talk, be alone, not do anything, not move around, sit quietly, and so on. Eliminated were the six factors of Aggression, Concentration, Social Affection, Skepticism, Egotism, and Nonchalance. Each of the factors has 2-6 adjectives associated with it and had a response format ranging from 0 to 3.

The final measure following the social comparison opportunity was the BES weight concern subscale (see above and Appendix C).

Procedure

All participants attended a general pre-test session in groups, at which they were welcomed, informed of the general purpose of the experiment and of the proposed schedule for participation, and given a consent form to read and sign. The true purpose and hypotheses of the study were not divulged at this time; rather, the subjects learned that this was a study of the "psychology of fashion model preference." Dr. Louis Pol, an Associate Professor of Marketing in the College of Business Administration, posed (in name only) as one of the researchers in order to lend credibility to the cover story.

After reading and signing the consent form, the subjects completed the five instruments described in the Materials section above: General Information,
Body Shape, Self-Monitoring, Body Esteem, and Locus of Control. After completing the questionnaires, they turned in their forms and signed up for an individual session time for the experimental portion of the study.

For the individual experimental sessions, the subjects were randomly assigned to one of the three conditions (HE, TE, or TN), and were assigned one of four experimenters (all four were women between 23 and 35 years old). At least three days elapsed between the group session and the first individual session in order to reduce the possibility that the questionnaires about body esteem and body shape would enlighten the subjects about the hypotheses prematurely.

At the beginning of the individual experimental session, the subjects signed another consent form describing some basic details of the session. They also recorded their social security number, which they indicated in the general pre-test session.

After the subject signed the consent form, the experimenter instructed her to complete the Model Rating form and the Comparison form while studying the poster board bearing the photos of the models. The experimenter then left, telling the subject to call her after she had finished the forms. The poster board was propped against a wall in front of the subject so that she could sit at a table to complete the forms.

When the subject had completed both the Model Rating form and the
Comparison form, she called for the experimenter to return. No time limit was placed on the subjects; the purpose of the form completion tasks was to ensure exposure and attention to the comparison targets. The experimenter collected the forms and gave the subject the dependent measures forms: Possible Selves, Mood Adjective Check List, and Body Esteem subscale. The experimenter waited in the room while the subject completed these forms.

After these forms were completed, the experimenter discussed the experiment and the subject’s feelings and thoughts in the following sequence. First, the experimenter questioned the subject concerning her suspicions about the study and her beliefs about the nature of the hypotheses. Next, the experimenter explained the study and the hypotheses in full and questioned the subject about any insights she had into the phenomenon of social comparison on the attribute of body size and shape. She answered any questions the subject had, thanked her for her participation, filled out the extra credit form, and dismissed her.
Chapter 3

Results

The main dependent variables to test the hypotheses were Body Esteem, Mood, Derogation, and Possible Selves. The results of each of these measures will be described below, followed by a description of the results of the exploratory variables measured.

**Body Esteem**

There were two hypotheses concerning body esteem. One was that women who engage in inescapable social comparison with heavy models (HE condition) will show less decrease in body esteem compared to the women who view thin models (TE and TN conditions). The other hypothesis was that women viewing thin models with an opportunity to derogate them explicitly (TE condition) would show less decrease in body esteem than women viewing thin models with no opportunity to derogate (TN condition).

Subjects rated the ten items making up the weight concern subscale of the body esteem measure with values from one to five. Five represented the most positive feelings. The ten item scores were summed for each subject (see Table 1).
## Table 1

### Body Esteem Scores by Condition

**Means, Standard Deviations, and Ranges**

<table>
<thead>
<tr>
<th></th>
<th>Heavy Evaluative</th>
<th>Thin Evaluative</th>
<th>Thin Nonevaluative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-test Body Esteem Scores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>means, standard deviations, and actual ranges</td>
<td>mean 27.45</td>
<td>27.25</td>
<td>32.75</td>
</tr>
<tr>
<td></td>
<td>sd 8.06</td>
<td>5.48</td>
<td>9.39</td>
</tr>
<tr>
<td></td>
<td>range 14-41</td>
<td>18-37</td>
<td>18-49</td>
</tr>
<tr>
<td><strong>Post-test Body Esteem Scores</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>means, standard deviations, and actual ranges</td>
<td>mean 25.50</td>
<td>28.30</td>
<td>32.50</td>
</tr>
<tr>
<td></td>
<td>sd 8.43</td>
<td>6.15</td>
<td>10.61</td>
</tr>
<tr>
<td></td>
<td>range 12-42</td>
<td>16-37</td>
<td>15-50</td>
</tr>
<tr>
<td><strong>Adjusted post-test Body Esteem means</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(covariate = pre-test Body Esteem Score)</td>
<td>26.88</td>
<td>29.84</td>
<td>29.57</td>
</tr>
</tbody>
</table>

Possible range of scale = 10-50
Random assignment to treatment group failed to randomize the distribution of body satisfaction as measured in the pre-test by the weight concern subscale of the body esteem measure. Mean scores on the pre-test for the three treatment conditions were significantly different in a one-way analysis of variance by condition ($F [2, 57] = 3.19, p = .0487$).

As one might expect, pre-test body esteem scores were significantly correlated with post-test body esteem scores ($r = .7564, p = .0001$) In addition, the calculated z-score for subjects' actual body size was significantly negatively correlated with both the pre-test body esteem measure ($r = -.5255, p = .0001$) and the post-test body esteem measure ($r = -.4645, p = .0002$). That is, the lower the subjects' z-score (i.e., the thinner the subjects reported themselves to be), the higher (and more affectively positive) their body esteem score.

There are assumptions to be met before analysis of covariance can be considered a valid technique for testing for differences in average dependent variable scores among conditions (Elashoff, 1969). These assumptions are that:

(a) not only are individuals randomly assigned to conditions, but all conditions are treated exactly the same except for the experimental treatment itself;

(b) the covariate measure to be included in the analysis is statistically independent of the treatment effect, which can be achieved by measuring the covariate in advance of the treatment and by randomizing the assignment of
treatments to groups;

(c) the covariate is measured without error (i.e., is measured reliably);

(d) the relationship between the experimental variable and the covariate is known or estimated based on theoretical grounds, prior experimentation, or examination and analysis of x-y scatter plots;

(e) the regression of y on x is linear and there is no treatment-slope interaction;

(f) within each treatment group the experimental variable has a normal distribution; and

(g) the variance of y scores for a given x is the same for each treatment group and independent of x.

The scores on the Body Esteem post-test were adjusted by including the covariate Body Esteem pre-test score. The two planned comparisons yielded no significant difference on the adjusted post-test scores among the groups (see Table 1). Comparison I, between the women viewing heavy models and those viewing thin models (HE versus [TE + TN]/2), resulted in a nonsignificant trend in the opposite direction of the hypothesis ($F_{[1,56]} = 3.06, p = .0859$); Comparison II, within the Thin condition and between those subjects having an opportunity to derogate and those having none (TE versus TN), resulted in nonsignificance ($F_{[1,56]} = .02, p = .8890$)
All assumptions of analysis of covariance were not met for the variable Body Esteem, namely assumption (a) above (random assignment to treatment group failed to randomize distribution of the pre-test score on Body Esteem). The two proposed covariates of body size (a z-score calculated from height-weight population norm tables) and BSQ (a continuous score from the Body Shape Questionnaire) are logical measures to use for adjusting initial bias in the make-up of the treatment groups, as suggested by Elashoff (1969). Given that the pre-test score on Body Esteem is already in the equation and that Body Esteem correlates highly with body size, neither body size nor BSQ contribute significantly to the total variance for the dependent measure Body Esteem.

The results do not support Hypothesis I, which predicted that women in the Heavy condition would score higher on the Body Esteem post-test, nor do they support Hypothesis II, which predicted that women with an opportunity to derogate thin models explicitly would have higher Body Esteem scores than those without that opportunity.

Mood

Mood was measured in order to gauge the subjects’ subjective well-being. The hypothesis predicted that women who view heavy models (HE condition) will show less decrease in positive mood compared to women who view thin models (TE and TN). In addition, a second comparison can be made between the TE and TN conditions to determine whether subjects having an
opportunity to derogate explicitly experience better moods than subjects having no opportunity to derogate explicitly, when under the same ego-threatening conditions.

According to Nowlis (1968), the Mood Adjective Check List breaks down into six factors: anxiety (clutched-up, fearful, jittery); surgency (carefree, playful, lively, talkative); elation (elated, overjoyed, pleased, refreshed); fatigue (drowsy, dull, sluggish, tired); sadness (regretful, sad, sorry); and vigor (active, energetic, vigorous). Subjects rated each adjective from zero to three to indicate the degree to which the adjective described their current state. The adjectives making up each factor were summed to determine factor scores. Each of these six factors were examined separately to determine the effects the experimental manipulation had on them.

Nowlis reported satisfactory reliabilities for these mood factors to be used with confidence. However, in this study, with this particular sample of subjects, the reliabilities ranged from quite high to fairly low. The Cronbach’s Alpha for the six mood factors as measured in this study were as follows: Fatigue = .7933, Surgency = .7639, Vigor = .7608, Elation = .7259, Sadness = .6467, and Anxiety = .4683. See Table 2 for a listing of the means, standard deviations, and ranges for the six mood factors by condition.
Table 2
Mood Factor Scores by Condition
Means, Standard Deviations, and Actual Ranges

<table>
<thead>
<tr>
<th>Mood factor</th>
<th>Possible range</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sadness</td>
<td>0-9</td>
<td>1.70</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0-9</td>
<td>2.25</td>
</tr>
<tr>
<td>Fatigue</td>
<td>0-12</td>
<td>4.50</td>
</tr>
<tr>
<td>Elation</td>
<td>0-12</td>
<td>4.70</td>
</tr>
<tr>
<td>Vigor</td>
<td>0-9</td>
<td>4.70</td>
</tr>
<tr>
<td>Surgency (adj.</td>
<td>0-15</td>
<td>6.22</td>
</tr>
<tr>
<td>covariate =z-score)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Anxiety was the only mood factor to yield significance as a dependent measure (see Table 2). Comparison I (HE versus [TE + TN]/2) was nonsignificant ($E_{[1,57]} = .39, \ p = .5375$). However, Comparison II (TE versus TN) was significant ($E_{[1,57]} = 4.99, \ p = .0295$). The assumptions for analysis of covariance (Elashoff, 1969) were met for the covariates body size and BSQ but they were not included in the analysis as neither contributed significantly to total variance.

Sadness was nonsignificant for Comparison I ($E_{[1,57]} = 1.28, \ p = .2617$), and it was nonsignificant, yet in the direction of prediction, for Comparison II ($E_{[1,57]} = 3.21, \ p = .0783$). Because body size and BSQ did not contribute significantly to the variance for Sadness, neither was included in the analysis.

Surgency was nonsignificant for Comparison I ($E_{[1,56]} = .30, \ p = .58$) and for Comparison II ($E_{[1,56]} = 2.77, \ p = .1018$). Body size (z-score) met Elashoff's assumptions and was included as a covariate in the analysis ($E_{[1,56]} = 3.94, \ p = .0521$); BSQ was not.

Elation showed no significant results for Comparison I ($E_{[1,57]} = .01, \ p = .9266$) or for Comparison II ($F_{[1,57]} = .07, \ p = .7903$). Furthermore, body size and BSQ did not contribute significantly to the overall variance and were not used.
Fatigue yielded significance for neither Comparison I ($F_{[1,57]} = .08$, $p = .7803$) nor Comparison II ($F_{[1,57]} = .34$, $p = .5626$). Body size and BSQ did not contribute significantly to the overall variance and were not used.

Finally, Vigor was nonsignificant for Comparison I ($F_{[1,57]} = .00$, $p = .9698$) and for Comparison II ($F_{[1,57]} = .35$, $p = .5560$). The variables body size and BSQ were nonsignificant and thus were not included in the analysis.

The results do not support the hypothesis for Comparison I, i.e., there was no difference in mood factor scores between subjects in the Thin and Heavy conditions. However, the hypothesis for Comparison II was supported for the mood factor anxiety (but not the other five mood factors), i.e., within the Thin condition, subjects having an opportunity to make evaluative comments about the models had lower anxiety scores than subjects having no such opportunity.

**Derogation**

The hypothesis concerning derogation predicted that women viewing thin models will derogate the models (engage in active downward social comparison) more than the women viewing heavy models. Thus, this comparison was between the subjects in the TE condition (thin models, with an opportunity for evaluation) and the subjects in the HE condition (heavy models, with an opportunity for evaluation). Of course, subjects in the TN condition had no opportunity to evaluate the models on the value-laden attributes, and they are therefore not included in this analysis.
The reliability for the Derogation measure was adequate (Cronbach's Alpha = .8828). For the derogation variable, the higher the score, the more the subjects derogated the models (see Table 3).

Comparisons for derogation involved only the subjects in the TE and HE conditions; thus the number of observations for Comparison I for the derogation measure was 40. However, there was no significant difference between the two groups in the Derogation score when only Comparison I was used in the regression equation (F [1,38] = 2.47, p = .1240). Neither body size nor BSQ were included as covariates because neither contributed significantly to the variance.

A univariate analysis of the evaluative adjectives (each adjective summed separately across models) revealed a near-significant difference between the HE and TE conditions for the rating on "likable-unlikable" (F [1,38] = 3.55, p = .0670). In this analysis, the HE mean was 40.55 and the TE mean, 45.0 (again, the higher the score, the more negative the ratings), suggesting that women in the HE condition found the heavy models to be more "likable" than the women in the TE condition found the thin models. None of the other evaluative adjectives approached significance when analyzed in this fashion.
Table 3

Derogation Scores by Condition
Means, Standard Deviations, and Ranges

<table>
<thead>
<tr>
<th></th>
<th>Heavy Evaluative</th>
<th>Thin Evaluative</th>
</tr>
</thead>
<tbody>
<tr>
<td>mean</td>
<td>216.65</td>
<td>230.00</td>
</tr>
<tr>
<td>sd</td>
<td>30.38</td>
<td>22.75</td>
</tr>
<tr>
<td>range</td>
<td>167-275</td>
<td>179-270</td>
</tr>
</tbody>
</table>

Possible range of scale = 85-425 (midpoint = 255.0)
One interesting and unanticipated result was that there was a significant difference in overall derogation between the TE and HE conditions when the anxiety measure was added as a covariate. The overall $R^2$-squared for this analysis was .1888 ($F_{2,37} = 4.31, p = .0208$). Each of these two variables contributed significantly to the overall variance: Anxiety ($F_{1,37} = 5.82, p = .0209$) and Comparison I ($F_{1,37} = 5.32, p = .0268$). Note that the mean anxiety score in the HE condition was 2.25 and in the TE condition was 1.25, the value for the orthogonally coded group membership vector was -1 for TE and 2 for HE, and the beta coefficient was negative for the vector representing group membership. This means that the more anxious the subjects in the Thin Evaluative condition reported themselves to be, the more they derogated the models compared to those subjects in the Heavy condition.

Possible Selves

The Possible Selves measure was included to determine saliency of body size and shape as a result of ego-threatening social comparison. It was hypothesized that women viewing the thin models (TE and TN) would feel more concern about their body size and shape because the thin models had made the ideal so salient. Thus, women in the TE and TN conditions were expected to make more statements about a feared fat self than women in the HE condition. Furthermore, it was also hypothesized that an opportunity to derogate the thin models should relieve subjects of much of the threat to the ego, so subjects in
the TN condition were expected to make more statements about a feared fat self than women in the TE condition.

Each subject received a Possible Selves (PS) score (total number of mentions of weight or body size out of nine possible mentions, with thinness being desirable). There were 37 mentions in all, generated by 20 of the 60 subjects. Two individuals independently reviewed the subjects’ responses and counted these mentions by condition (HE, TE, TN) and by category (Hoped For, Feared, Expected) (see Table 4). There was complete agreement about occurrences of body size except for one case: one subject hoped for a possible self of "model," possibly suggesting thinness as an associated attribute. However, "model" was excluded as a positive occurrence of a mention of a thin self as desirable because it could mean so many other things.

A chi-square analysis of the data revealed no significant differences across the three conditions ($X^2 [2] = 6.0, p = .199$). Neither body size nor BSQ contributed significantly to the total variance and thus were not included as covariates.
Table 4

Frequency of Mentions of Weight or Body Size
by Condition and by Category

<table>
<thead>
<tr>
<th></th>
<th>Heavy Evaluative</th>
<th>Thin Evaluative</th>
<th>Thin Nonevaluative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoped-for self</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Feared self</td>
<td>7</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Expected self</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>8</td>
<td>18</td>
</tr>
</tbody>
</table>

37 mentions generated by 20 subjects

Possible range of scale = 0-9
Exploratory Variables

The five exploratory variables (age, media exposure, romantic relationship, internal locus of control, and self-monitoring) were measured before the experimental manipulation; randomization is confirmed by the absence of significant differences in these variables across the three treatment groups when analyzed in a one-way analysis of variance. None of the variables contributed significantly as a covariate for Comparisons I and II, the examination of significant differences in the dependent measures as a result of the experimental manipulation.

However, some of the exploratory variables did yield significant or near-significant results for some of the dependent measures when analyzed alone, without using the treatment groupings as an independent variable in the regression equation. High frequency of possible selves (PS) as feared-fat and/or hoped for-thin were significantly related to the exploratory variable romantic relationships ($F_{[1,58]} = 3.79, \ p = .0563$) (see Table 5). A high score on the PS measure indicated higher salience of body size and shape, and a high score on the relationship variable indicated perceived stability of a current romantic relationship, with no current relationship scored as zero.

High frequency of media consumption (magazines and television) accounted for a near-significant amount of variance in the dependent variable of body satisfaction ($F_{[1,58]} = 3.56, \ p = .0642$). The beta coefficient for media
consumption was negative, indicating that the higher the frequency score on media consumption, the lower the score on body esteem.

There was a trend in the predicted direction for the relationship between the score on the self-monitoring scale and the score on body esteem ($E_{[1,58]} = 3.32, p = .0737$). Thus, the higher a subject scored on the self-monitoring scale, the lower her score on the body esteem scale (see Table 5).
Table 5

Correlation Matrix for Exploratory Variables

<table>
<thead>
<tr>
<th></th>
<th>PS</th>
<th>BE-1</th>
<th>LOC-I</th>
<th>RELAT</th>
<th>MEDIA</th>
<th>AGE</th>
<th>SM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Selves</td>
<td>.02</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(PS)</td>
<td>.86</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Esteem</td>
<td>.09</td>
<td>.06</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(pre-test) (BE-1)</td>
<td>.50</td>
<td>.65</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>58</td>
<td>58</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Locus of</td>
<td>.25</td>
<td>.001</td>
<td>.28</td>
<td>1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control (LOC-I)</td>
<td>.06</td>
<td>.99</td>
<td>.03</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>60</td>
<td>58</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Status of</td>
<td>-.07</td>
<td>-.24</td>
<td>.18</td>
<td>.06</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Romantic</td>
<td>.61</td>
<td>.06</td>
<td>.18</td>
<td>.67</td>
<td>0.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationships</td>
<td>60</td>
<td>60</td>
<td>58</td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Consumption</td>
<td>.06</td>
<td>-.12</td>
<td>-.06</td>
<td>-.05</td>
<td>.14</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>(MEDIA)</td>
<td>.67</td>
<td>.35</td>
<td>.63</td>
<td>.68</td>
<td>.92</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>60</td>
<td>58</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Age (AGE)</td>
<td>-.12</td>
<td>-.23</td>
<td>.19</td>
<td>-.09</td>
<td>-.02</td>
<td>-.02</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>.35</td>
<td>.07</td>
<td>.15</td>
<td>.47</td>
<td>.85</td>
<td>.90</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>60</td>
<td>58</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>
The intent of this study was to examine women’s responses to inescapable social comparison on the attribute of body size and shape. The hypotheses tested were:

(1) women who engage in inescapable social comparison with heavy models will show less decrease in body esteem or mood and less incidence of reporting a feared fat self than will the women who view thin models, and

(2) women engaging in inescapable social comparison with thin models may manage that potential threat to their body esteem or well-being by derogating the thin models on perceived traits more than will those women comparing with the heavy models.

The experiment succeeded in operationally testing both hypotheses. The independent variables were heavy versus thin comparison targets and opportunity versus no opportunity for explicit derogation. The comparison targets differed significantly on body size, but not on attractiveness. The four main dependent variables (body esteem, mood, possible selves, and derogation) were found to have adequate reliabilities and some were from known, validated instruments.
Body Esteem

The results do not support Hypothesis I, i.e., that women in the Heavy condition will score higher (more positively) on the post-manipulation body esteem measure than women in the Thin conditions. As a matter of fact, there was a nonsignificant trend ($p = .0859$) in the opposite direction of the hypothesis.

What could explain these findings? One possibility was stated above: the single episode of social comparison has little impact compared to a lifetime of social comparison opportunities. This possibility is supported by the marginally significant media consumption measure being a predictor of body esteem ($p = .06$). If women who consume media images with high frequency also feel relatively worse about their bodies than women who consume media images less, then we can infer that exposure to those media images means exposure to the seemingly unattainable physical ideal of the culture. That ideal is likely to be internalized as a prototype, and a one-shot exposure to heavy models from the media may neither budge that prototype as ideal and desirable nor ameliorate a harsh self-judgment on body attractiveness.

Additionally, exposure to the heavy models may have made salient that those body sizes and shapes are not the ideal. If an HE subject feels that the heavy models look somewhat like her and that the heavy models represent less than the ideal, she may feel particularly dissatisfied with her own body. At a
recent convention of the American Psychological Association (New Orleans, August, 1989), Wills (1989) introduced in a symposium on social comparison the possibility that downward comparison situations may backfire, in a sense, providing an opportunity for the individual to see his or her possible future self in the comparison target and to be possibly disheartened at the similarity between this possible self and the current self. This line of reasoning emphasizes the complexity of the social comparison process, and calls for additional empirical studies incorporating such a hypothesis.

The second main hypothesis in this study was not supported either, i.e., that women faced with a threatening social comparison will manage the ego threat if they have an opportunity to derogate the comparison targets, creating active downward social comparison, and will thus score higher on a body esteem measure than will women faced with the same threat but with no opportunity to derogate the targets.

This lack of support for the second hypothesis on the dependent variable Body Esteem may be due to several factors. First, perhaps the women without an opportunity to derogate the models explicitly to the experimenter were able to achieve the effects of active downward social comparison by expressing derogation to themselves mentally (e.g., "I'm glad I'm not her; what a stupid outfit/expression/hairdo."). The subjects were not asked to report such self-talk, and so we do not know if they engaged in this behavior.
Another explanation for the finding is that the social comparison opportunity was not particularly threatening to the women in the Thin condition. If they have seen such images of models all their lives, then this episode may have been a drop in the bucket in terms of threat to their self esteem. However, the subjects' comments during the debriefing lead me to discount this last explanation. The experimenters reported that, during the debriefing, the subjects tended to express exasperation, envy, or irritation towards the thin models, with comments such as, "Women like her make me sick," "I'll never look that good," and "Look at her; she's so gorgeous." Unfortunately, I did not collect these comments in an empirical fashion; nevertheless, their preponderance as reported by all three experimenters suggests that the social comparison opportunity with standard-setters was a salient one.

The nonsignificant trend (p = .07) for the relationship between the score on the self-monitoring scale (SM) and the score on body esteem is interesting, in that it raises the question, Does self-monitoring predict dissatisfaction with one's body shape or size because of closer scrutiny to oneself or because of closer adherence to societal standards?

**Mood**

While Hypothesis I was not supported (there was no difference in mood factor scores between subjects in the Thin and in the Heavy conditions), Hypothesis II (the comparison between TE and TN) was supported for the mood
factor anxiety ($p = .0295$). The mood factor sadness was nonsignificant, yet in the direction of prediction ($p = .078$) for Hypothesis II.

As mentioned above, the low reliability of the anxiety measure with this sample raises questions about the accuracy of this inferential analysis, although the Mood Adjective Check List was originally created and validated with higher reliability (Nowlis, 1968). Despite this reservation, I interpret the congruent findings of the anxiety and sadness factors to mean that having an opportunity to derogate in a public fashion (to the experimenter) did make a difference in levels of psychological discomfort, as measured by those particular factors. That is, TE subjects, who had an opportunity to derogate, had significantly lower levels of anxiety (and perhaps lower levels of sadness) than did those in the TN condition, who had no opportunity to derogate.

**Derogation**

Hypothesis II, concerning derogation, predicted that women in the Thin condition would derogate the thin models to a greater extent than the women in the Heavy condition would derogate the heavy models. This hypothesis was not supported when treatment group was used as the sole independent variable. But when the anxiety measure was included as a covariate, the hypothesis was supported ($p = .02$). Thus, subjects scoring high on the anxiety factor in the post-manipulation measures derogated more if they were in the Thin condition than if they were in the Heavy condition.
Obviously, the process of derogation in social comparison is not simple or straightforward. Perhaps anxiety or some minimal level of psychological discomfort is necessary before derogation occurs. As noted above, however, there was no difference in body esteem scores between the TE and the TN (opportunity vs. no opportunity to derogate), suggesting that, even though derogation may kick in during threatening social comparison opportunities, it may not provide dimension-specific defense for the individual.

There are two items to note here. First of all, the anxiety measure yielded a rather low Cronbach’s alpha (.4683) in this sample, which requires that we infer cautiously from the statistical analysis. Clearly, additional research is necessary on the role of psychological discomfort in downward social comparison and derogation processes.

Secondly, the anxiety measure was a post-manipulation one, and no pre-manipulation anxiety measure was taken. The question here is, How does the post-treatment measure compare to the subjects’ pre-manipulation levels of anxiety? Is the post-manipulation level in fact lower than the pre-manipulation level for the TE subjects, in which case, derogation might have helped them manage threat to their psychological comfort, if not their body esteem. Or do chronically anxious people derogate standard-setters more?

Possible Selves

Neither Hypothesis I nor II was supported by the data for the Possible
Selves measure. It is entirely possible that body size and shape were equally salient to all treatment groups as a result of the content of the pre-tests, the experimental materials themselves (photographs of models), and the cultural mandates for thinness that the subjects have undoubtedly experienced. It is also possible that the social comparison was not particularly salient to the subjects, as suggested by the fact that only one-third of the subjects mentioned body size or shape in the possible selves measure.

A surprising finding is for one of the exploratory variables, status of romantic relationship. An unpredicted, marginally significant ($p = .056$) relationship exists between perceived stability of relationship and mentions of body size and shape in the possible selves measure. Those subjects reporting more stable romantic relationships also mentioned body size or shape more frequently in the possible selves measure. Why might this be? Logic suggests the opposite: that women who are seeking a relationship or who consider themselves in an unstable one would be more concerned with their appearance (an exchangeable commodity in the romantic partner selection market, according to Lakoff and Scherr, 1984), as compared to women who consider themselves firmly ensconced in a romantic relationship. Given the age of the subjects in this sample (mean = 22.55 years), they are probably in the process of selecting a mate and may have already experienced several different romantic partners in high school and college. Perhaps those subjects currently in a
relationship are those that are more successful at attracting a romantic partner and may find themselves in serial monogamous relationships with little "down time" between partners. Such individuals may place more value on their appearance as it has undoubtedly played a meaningful role in the development and maintenance of their romantic relationships so far. Or perhaps those women who report an uncommitted or nonexistent romantic relationship are not particularly interested in one at this time, as they are busy with school and work and are preparing for their own careers; and perhaps they are correspondingly indifferent to conforming to or worrying about the culture's prescription for beauty.

**Implications**

Did the women in this study unconsciously manage their attention to, evaluation of, and comparison to other women through social comparison processes? The different social comparison targets seemed to make no difference to the subjects' body esteem and possible selves measures.

But derogation seemed to play a role: having an opportunity to derogate the thin models did seem to relieve women in the Thin condition of anxiety and possibly sadness. In addition, when anxiety was used as a covariate, there was a predicted difference in derogation between the Thin and Heavy conditions. Women faced with the thin comparison others and having a higher level of anxiety derogated more. However, this derogation did not seem to provide any
relief to the ego threat on body esteem, so it is unclear why this derogation might occur. Perhaps it provides relief to the ego threat on some other dimension of self perception.

(The media appear to play a role in the shaping of women's body esteem through social comparison processes.) Those women reporting high frequency of media consumption also felt relatively worse about their bodies. While the media consumption variable was not manipulated in this study, this marginally significant finding suggests some areas for future research in terms of the conscious use of social comparison to manage threats to self-esteem. Would it be possible for women to train themselves not to attend to certain images, in the media for example, and to attend selectively to other, more flattering comparisons? In other words, must downward social comparison, both implicit (through selection of less desirable targets) and explicit (through derogation of more desirable targets), be unconscious to be effective? An interesting experiment would be to train women to attend selectively to heavier comparison targets and to make explicit observations on related attributes for thinner comparison targets. Will we see differences? And, if so, will those differences be meaningful enough to consider how they might help women who have destructively negative perceptions of their own bodies? Could a behavioral intervention be developed for women whose negative self-evaluation manifests itself in bulimia or anorexia nervosa?
The role of defensive social comparison is largely unexplored in the area of physical attractiveness. The results of this study suggest that derogation does play a part in women's management of ego threat from standard-setters of body size and shape. But, unfortunately, the results suggest only, and do not permit straightforward conclusions about how defensive social comparison operates on the dimension of physical size and shape.

A revised approach for examination of this topic would be to measure women's moods (in particular anxiety and sadness) in advance of any experimental manipulation in order to determine a within-subjects effect. Furthermore, I would expand the derogation opportunities and limitations in order to probe for the role of "public-ness" of derogation in defensive social comparison. That is, is it possible to manage ego threat by thinking privately of derogatory evaluations rather than by expressing them to another? Finally, the issue of a single episode being swamped by a lifetime of social comparison opportunities with standard-setters needs to be addressed. How powerful is a single episode? What elements contribute to its salience and impact on self perception and how can they be measured?
References


Nowlis, B. (1968). Research with the mood adjective check list. In S. S. Tomkins & C. E. Izard (Eds.), Affect, cognition, and personality (pp. 352-389). New York: Springer.


Appendix A

General Information

Thank you for agreeing to participate in this study. Your responses are important, and we hope that you will respond carefully to all of the questions we will be asking you. We will take care to keep all of your responses confidential. At the end of the study, we will keep all questionnaires and response forms in private, locked files; we will only report summary statistics in the write-ups. Your name will never be associated with your responses; only your social security number (your UNO student ID number) will be used. This number will never be reported in any write-up. To begin with, we need some basic information. Please complete this form, following the directions for each section.

Put all of your responses directly on this sheet. In order to make correlations between your responses today and responses you make at the individual session, we need to have you identify yourself. We do not want your name, however. We want you to write your social security number here:

1. How old are you? _____ years old
2. How tall are you? _____ feet _____ inches (without shoes)
3. How much do you weigh? _____ pounds (without clothing)
4. Are you involved in a romantic relationship right now?
   a. yes (answer #5)  b. no (skip #5)

5. (Answer this question only if you answered "yes" to #4).
   How confident are you that this relationship will last?
   a. not at all confident
   b. slightly confident
   c. moderately confident
   d. quite confident
   e. extremely confident

6. How many different magazine issues do you read per month?
   I usually read _____ different magazine issues each month.
7. How much television do you usually watch?
   a. very little
   b. a small amount
   c. a moderate amount
   d. quite a bit
   e. a lot
Appendix B

Revised Self-Monitoring Scale
(Personal Reaction Inventory)

Directions. The statements on the following pages concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is TRUE or MOSTLY TRUE as applied to you, blacken the space marked "a" on your answer sheet. If a statement is FALSE or NOT USUALLY TRUE as applied to you, blacken the space marked "b". Do not put your answers on this test booklet itself. Remember, "a" represents TRUE, and "b" represents FALSE.

1. I find it hard to imitate the behavior of other people. (F)

2. At parties and social gatherings, I do not attempt to do or say things that others will like. (F)

3. I can only argue for ideas which I already believe. (F)

4. I can make impromptu speeches even on topics about which I have almost no information. (T)

5. I guess I put on a show to impress or entertain others. (T)

6. I would probably make a good actor. (T)

7. In a group of people I am rarely the center of attention. (F)

8. In different situations and with different people, I often act like very different persons. (T)

9. I am not particularly good at making other people like me. (F)

10. I'm not always the person I appear to be. (T)

11. I would not change my opinions (or the way I do things) in order to please someone else or win their favor. (F)

12. I have considered being an entertainer. (T)
13. I have never been good at games like charades or improvisational acting. (F)

14. I have trouble changing my behavior to suit different people and different situations. (F)

15. At a party I let others keep the jokes and stories going. (F)

16. I feel a bit awkward in company and do not show up quite as well as I should. (F)

17. I can look anyone in the eye and tell a lie with a straight face (if for a right end). (T)

18. I may deceive people by being friendly when I really dislike them. (T)
Appendix C

Body Esteem Scale (Physical Awareness Scale)

Directions. Each of the items in the list below concerns an aspect of your physical self. Please indicate how you usually (right now) feel about these aspects of yourself by rating each item on the scale. Rate each item by blackening the appropriate circle on the answer sheet using the key below.

a = I usually (right now) have extremely strong positive feelings
b = I usually (right now) have somewhat strong positive feelings
c = I usually (right now) have neither positive nor negative feelings
d = I usually (right now) have somewhat strong negative feelings
e = I usually (right now) have extremely strong negative feelings

1. body scent 15. arms
2. appetite 16. breasts
3. nose 17. appearance of eyes
4. physical stamina 18. cheeks/cheekbones
5. reflexes 19. hips
6. lips 20. legs
7. muscular strength 21. figure
8. waist 22. sex drive
9. energy level 23. feet
10. thighs 24. sex organs
11. ears 25. appearance of stomach
12. biceps 26. health
13. chin 27. sex activities
14. body build 28. body hair
29. physical coordination
30. buttocks
31. width of shoulders
32. physical condition
33. face
34. weight
35. agility
Appendix D

I.P. and C Scales
(Social Attitudes Scale)

Directions. You will read a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion.

Read each statement carefully. Then indicate the extent to which you agree or disagree by blackening the appropriate space on your answer sheet. The letters and their meanings are as follows:

\[\begin{align*}
a &= \text{I agree strongly with this statement.} \\
b &= \text{I agree somewhat with this statement.} \\
c &= \text{I agree slightly with this statement.} \\
d &= \text{I disagree slightly with this statement.} \\
e &= \text{I disagree somewhat with this statement.} \\
f &= \text{I disagree strongly with this statement.}
\end{align*}\]

First impressions are usually best. Use the response that is closest to the way you feel.

1. Whether or not I get to be a leader depends mostly on my ability.
2. To a great extent my life is controlled by accidental happenings.
3. I feel like what happens in my life is mostly determined by powerful people.
4. Whether or not I get into a car accident depends mostly on how good a driver I am.
5. When I make plans, I am almost certain to make them work.
6. Often there is no chance of protecting my personal interests from bad luck happenings.
7. When I get what I want, it's usually because I'm lucky.
8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power.
9. How many friends I have depends on how nice a person I am.
10. I have often found that what is going to happen will happen.
11. My life is chiefly controlled by powerful others.
12. Whether or not I get into a car accident is mostly a matter of luck.
13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.
14. It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.
15. Getting what I want requires pleasing those people above me.
16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.
17. If important people were to decide they didn't like me, I probably wouldn't make many friends.
18. I can pretty much determine what will happen in my life.
19. I am usually able to protect my personal interests.
20. Whether or not I get into a car accident depends mostly on the other driver.
21. When I get what I want, it's usually because I worked hard for it.
22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.
23. My life is determined by my own actions.
24. It's chiefly a matter of fate whether or not I have a few friends or many friends.
Appendix E

Body Shape Questionnaire

This questionnaire is designed to find out how you have been feeling about your appearance over the past four weeks. Please read each question and choose your response according to the following key:

Never Rarely Sometimes Often Usually Always
a b c d e f

Please blacken the appropriate space on your answer sheet for each question. Please do not leave any blank.

OVER THE PAST FOUR WEEKS:

1. Has feeling bored made you brood about your shape?

2. Have you been so worried about your shape that you have been feeling that you ought to diet?

3. Have you thought that your thighs, hips, or bottom are too large for the rest of you?

4. Have you been afraid that you might become fat (or fatter)?

5. Have you worried about your flesh not being firm enough?

6. Has feeling full (e.g., after eating a large meal) made you feel fat?

7. Have you felt so bad about your shape that you have cried?

8. Have you avoided running because your flesh might wobble?

9. Has being with thin women made you feel self-conscious about your shape?

10. Have you worried about your thighs spreading out when sitting down?

11. Has eating even a small amount of food made you feel fat?
12. Have you noticed the shape of other women and felt that your own shape compared unfavorably?

13. Has thinking about your shape interfered with your ability to concentrate (e.g., while watching television, reading, listening to conversations)?

14. Has being naked, such as when taking a bath, made you feel fat?

15. Have you avoided wearing clothes which make you particularly aware of the shape of your body?

16. Have you imagined cutting off fleshy areas of your body?

17. Has eating sweets or other high calorie food made you feel fat?

18. Have you not gone out to social occasions (e.g., parties) because you have felt bad about your shape?

19. Have you felt excessively large and rounded?

20. Have you felt ashamed of your body?

21. Has worry about your shape made you diet?

22. Have you felt happiest about your shape when your stomach has been empty (e.g., in the morning)?

23. Have you thought that you are the shape you are because you lack self-control?

24. Have you worried about other people seeing rolls of flesh around your waist or stomach?

25. Have you felt that it is not fair that other women are thinner than you?

26. Have you vomited in order to feel thinner?

27. When in company have you worried about taking up too much room (e.g., sitting on a sofa or a bus seat)?

28. Have you worried about your flesh being dimply?
29. Has seeing your reflection (e.g., in a mirror or shop window) made you feel bad about your shape?
Appendix F

Evaluative Model Ratings

Please rate the models in the pictures on the following attributes. Each attribute has five levels associated with it. Please use the following key for your ratings:

1 = She seems **very much** this way (the attribute on the left).
2 = She seems **somewhat** this way (on the left).
3 = She seems **in between** these two attributes.
4 = She seems **somewhat** this way (on the right).
5 = She seems **very much** this way (on the right).

Please circle the rating that you select for each model on each attribute.

For example, if you feel that Model #59 seems **somewhat talkative**, then you should circle the number 2 near the "talkative" side:

```
talkative 1 2 3 4 5 untalkative
```

For example, if you feel that Model #59 seems neither **successful nor unsuccessful**, then you should circle the number 3 in the middle:

```
successful 1 2 3 4 5 unsuccessful
```

MODEL #

```
pleasant 1 2 3 4 5 unpleasant
dependable 1 2 3 4 5 undependable
unlikable 1 2 3 4 5 likable
truthful 1 2 3 4 5 untruthful
foolish 1 2 3 4 5 wise
```
Appendix G

Nonevaluative Model Ratings

Please rate the models in the pictures on the following attributes. Each attribute has five levels associated with it. Please use the following key for your ratings:

1 = She seems very much this way (the attribute on the left).
2 = She seems somewhat this way (on the left).
3 = She seems in between these two attributes.
4 = She seems somewhat this way (on the right).
5 = She seems very much this way (on the right).

Please circle the rating that you select for each model on each attribute.

For example, if you feel that Model #59 seems somewhat tall, then you should circle the number 2 near the "tall" side:

tall 1 2 3 4 5 short

For example, if you feel that Model #59 seems neither young nor old, then you should circle the number 3 in the middle:

old 1 2 3 4 5 young

MODEL #___ has:

dark hair 1 2 3 4 5 light hair
warm clothing 1 2 3 4 5 cool clothing
straight hair 1 2 3 4 5 curly hair
many siblings 1 2 3 4 5 few siblings
many allergies 1 2 3 4 5 no allergies
Appendix H

Possible Selves

Directions. Most people can imagine themselves in the future in a variety of ways. Some of these future "possible selves" are hoped-for, some are expected, and some are feared.

I would like to know about the possible selves you imagine for yourself. Please complete the statements below.

a. My three HOPED-FOR possible selves are

   (1)
   (2)
   (3)

b. My three FEARED possible selves are

   (1)
   (2)
   (3)

c. My three EXPECTED possible selves are

   (1)
   (2)
   (3)
Appendix I

Mood Adjective Check List

Directions. Each of the following words describes feelings or mood. Please use the list to describe your feelings at the moment you read each word. Decide whether each word describes your feeling at the moment and circle the appropriate symbol.

Use the following key for the symbols to the right of each word:

vv = this word definitely describes my feelings now
v = this word slightly describes my feelings now
? = I'm not sure/I can’t decide
no = this word definitely doesn’t describe my feelings now

Work rapidly. Your first reaction is best. Please mark all words. This should take only a few minutes.

clutched up vv v ? no
carefree vv v ? no
elated vv v ? no
drowsy vv v ? no
regretful vv v ? no
active vv v ? no
fearful vv v ? no
sad vv v ? no
dull vv v ? no
energetic vv v ? no
boastful vv v ? no
<table>
<thead>
<tr>
<th>Word</th>
<th>v</th>
<th>v</th>
<th>?</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>overjoyed</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>sluggish</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>jittery</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>witty</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>tired</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>lively</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>pleased</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>vigorous</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>sorry</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>refreshed</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
<tr>
<td>talkative</td>
<td>v</td>
<td>v</td>
<td>?</td>
<td>no</td>
</tr>
</tbody>
</table>