

## The Affective Consequences of Social Comparison: Either Direction Has Its Ups and Downs

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Research on social comparison processes has assumed that a comparison in a given direction (upward or downward) will lead to a particular affective reaction. In contrast, the present two studies proposed and found that a comparison can produce either positive or negative feelings about oneself, independent of its direction. Several factors moderated the tendency to derive positive or negative affect from upward and downward comparisons. In Study 1, cancer patients low in self-esteem and with low perceived control over their symptoms and illness were more likely to see downward comparisons as having negative implications for themselves. Those low in self-esteem were also more likely to perceive upward comparisons as negative. In Study 2, individuals with high marital dissatisfaction and those who felt uncertain about their marital relationship were more likely to experience negative affect from upward and downward comparisons. The implications of these findings for social comparison theory and for the coping and adaptation literature are discussed.

In the seminal work on social comparison, Festinger (1954) suggested that when individuals are uncertain about their opinions or abilities, they will compare themselves with others to evaluate their own situation. Schachter (1959) expanded the domain of social comparison activities to include emotions. In a number of experiments, he showed that fear evoked in most subjects the desire to wait with someone else, preferably an individual in the same situation who reacted with a similar degree of emotional intensity. Schachter reviewed a number of

explanations for these findings, but, in line with Festinger's theorizing, clearly favored the idea of self-evaluation. More recently, social comparison theory has been expanded to include motives for social comparison other than self-evaluation, including self-enhancement (e.g., restoring one's self-esteem by comparing oneself with others worse off; Wills, 1981), and self-improvement (e.g., seeking a positive example of the domain under evaluation; cf. Wilson & Benner, 1971).

The direction of comparison, namely whether one compares to a better-off or worse-off other (termed upward and downward comparisons, respectively), has been a central part of the theory (Latané, 1966). A great deal of research has substantiated that under conditions in which self-evaluation and self-improvement predominate, individuals prefer to compare their state with that of a slightly better-off other (e.g., Gruder, 1971; Wheeler, 1966; Wilson & Benner, 1971; see also Wheeler et al., 1969). On the other hand, a substantial body of literature indicates that when a comparison is motivated by self-enhancement, as is the case when self-esteem is threatened, the preferred target of comparison is one who is worse off (Crocker, Thompson, McGraw, & Ingerman, 1987; Friend & Gilbert, 1973; Hakmiller, 1966; Smith & Insko, 1987; Wills, 1981, 1987; Wood, Taylor, & Lichtman, 1985).

In this last line of research, differences in comparison target selection have been assumed to derive from differences in the effects of each type of information. In his downward comparison theory, Wills (1981) maintained that, under conditions of threat, downward comparisons are more likely to occur be-

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This research was supported by a grant from The Netherlands Organization for Scientific Research (NWO) to Bram P. Buunk, and by National Cancer Institute Grant CA 36409, National Institute of Mental Health Grant MH 42258, and Research Scientist Development Award MH 00311 to Shelley E. Taylor. Rebecca L. Collins was supported by National Institutes of Health Training Grant MH15750, and Gayle A. Dakof was supported by a fellowship from the American Cancer Society—California Division. Nico W. VanYperen was supported by a grant from NWO.

We are grateful to Roberta Falke, Jamie Lee, Laurie Skokan, Ina Smith, and Robyn Steer for their help in data collection; to Patricia Ganz for her help in coding prognosis; and to Monique Cloud for coding the comparison examples. We are also grateful to Darrin Lehman and Joanne Wood for their helpful comments on an earlier version of this article.

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cause they generate the positive affect essential for self-enhancement. Downward comparisons appear to boost self-esteem and positive emotion and reduce anxiety (Amoroso & Walters, 1969; Crocker & Gallo, 1985; Gibbons, 1986; Hakmiller, 1966; Kiesler, 1966; Lemyre & Smith, 1985; Morse & Gergen, 1970). Upward comparisons appear to be a useful source of self-evaluative information (Nosanchuk & Erickson, 1985; Wheeler et al., 1969), but seem concurrently to produce negative affect and lower self-evaluations by reminding one that one is inferior (Diener, 1984; Marsh & Parker, 1984; Morse & Gergen, 1970; Salovey & Rodin, 1984; Tesser, Millar, & Moore, 1988; Testa & Major, 1988).

In contrast to the previous literature, the present article proposes that the affective consequences of a comparison are not intrinsic to its direction. Although an upward comparison may serve the purpose of evaluation more readily than a downward one, and a downward comparison may more readily serve the function of self-enhancement, each may not necessarily have this effect. Learning that another is better off than yourself provides at least two pieces of information: (a) that you are not as well off as everyone and (b) that it is possible for you to be better than you are at present. Those able, by virtue of their personalities or circumstances, to focus on the positive aspect of this information may feel better about themselves as a result of an upward comparison. Those who focus on the negative aspect may feel worse. Conversely, learning that another is worse off than yourself also provides at least two pieces of information: (a) that you are not as badly off as everyone and (b) that it is possible for you to get worse. Focusing on the fact that one is better off than others may lead one to feel better about oneself as a result of a downward comparison, but focusing on the possibility of getting worse may produce negative feelings about oneself. Thus, how one feels in response to the information that another person is better off or worse off than oneself may depend on how one interprets the information.

Preliminary evidence suggests that downward comparisons can indeed result in negative feelings. In their studies of victims of chronic illness (a group under threat to self-esteem), both Dakof (1986) and Wood et al. (1985) found that these individuals sometimes felt threatened by exposure to others who had the same disease as themselves, but who were more ill. For example, their respondents described the doctor's waiting room as a particularly difficult situation because it forced on them the realization that things could be worse. Downward comparison theory would predict the opposite: These people should feel better about their own state when they see how much better off they are than others (Wills, 1981). Work by Tesser and his colleagues (see Tesser, 1986, for a review) also suggests that downward comparisons can be aversive. When people learn of worse-off others with whom they are "close" (highly similar or emotionally tied) and the comparison dimension is not central to self-definition, they may experience negative affect and arousal. Tesser (1986) and Wood (1984) also found evidence for positive affective consequences of upward comparisons: People who learned that another had done better than they had felt better about themselves as a result of this information. For example, a cancer patient may feel comforted or inspired by exposure to another who has recovered from the illness (Taylor & Lobel, 1989).

Various factors may moderate the affective impact of upward and downward comparisons. Tesser (1986) proposed relevance of the evaluation dimension as a potential moderator. He hypothesized that when one is competing with the comparison target, comparisons will have the effects typically described in downward comparison theory, but that in noncompetitive circumstances (when the evaluation is not self-relevant), downward comparisons will be negative and upward comparisons will be positive.<sup>1</sup> The studies presented here examine additional factors that may produce such outcomes. Study 1 examined the influence of self-esteem, the likelihood of improvement or decline on the attribute under evaluation, and perceived controllability of the attribute being evaluated. Study 2 extended these findings by replicating them in a second population and examining the moderating roles of uncertainty and dissatisfaction over the dimension under evaluation.

First, the effect of comparing may be dependent on personal characteristics of the individual who is making the comparison. Crocker and her colleagues (Crocker & Schwartz, 1985; Crocker et al., 1987) found that individuals high in self-esteem are more likely to make self-enhancing downward comparisons than are those with relatively low self-esteem. They argued that high self-esteem individuals have positive self-concepts, in part, because they engage in these self-enhancing strategies. Their hypothesis assumes that the meaning derived from a comparison is intrinsic to its direction and that downward comparisons always lead to greater self-esteem and upward comparisons do not. However, a more general version of the hypothesis would be that individuals high in self-esteem make comparisons favorable to themselves, regardless of their objective standing relative to the target. Thus, high self-esteem individuals may be more likely to make self-enhancing downward comparisons than low self-esteem persons and more likely to interpret upward comparisons as self-enhancing as well (cf. Wilson & Benner, 1971). Conversely, those with low self-esteem may be less likely to interpret either an upward or a downward comparison as favorable to themselves.

A second factor that may determine the effect of comparison information is the individual's likelihood of improving or declining on the attribute under evaluation. The importance of the possibility of the comparer attaining the target's level of achievement for comparison processes has been examined previously. Studies testing the related-attributes hypothesis suggest that comparisons are more meaningful when the comparer is similar to the target on dimensions related to that under evaluation (Goethals & Darley, 1977; Wheeler & Zuckerman, 1977). Furthermore, Wheeler (1966) proposed that the comparer's motivation level affects presumed similarity to the target as well, and thus will determine the choice of a comparison other. Both lines of research imply that the meaning derived from a comparison is dependent on the likelihood of finding oneself at the target's level (Brickman & Bulman, 1977). Thus, if the comparison dimension is a skill acquired through practice or one that increases naturally with maturity, upward com-

<sup>1</sup> It should be noted that although he uses the same method to assess these two processes, Tesser (1986) refers to the latter as a reflection (rather than comparison) process, and distinguishes between the two.

parisons may be uplifting because they provide the comparer with the information that such achievements are within reach. Similarly, an individual who is undergoing a stressful event but whose situation may improve may make an upward comparison and feel good, seeing him- or herself as progressing toward the target's superior state. Conversely, for someone whose situation is likely to decline, an encounter with another who is worse off may be threatening. The information may be interpreted as indicative of a worse future, rather than as reassurance about one's presently superior state.

Third, the degree to which individuals perceive their progress as controllable by themselves or by others may affect comparison responses. Perceived control has been shown to have powerful effects on other aspects of cognition (see Fiske & Taylor, 1984), coping (Taylor, Lichtman, & Wood, 1984; Thompson, 1981), and emotional responses (Thompson, 1981). In terms of the present theory, people in control may feel that they have the means to attain a higher level of functioning or avoid a downfall, and thus neither downward nor upward comparisons would theoretically pose a threat. In fact, upward comparisons should be inspiring to these individuals. Consistent with this point, Testa and Major (1988) found that individuals making upward comparisons reported lower levels of depression and hostility when control was high than did a group with low control. However, they did not have a baseline measure of mood, so it is not clear whether control produced a negative impact in one group, a positive impact in the other, or both.

To summarize, the first study was conducted (a) to demonstrate that comparisons in a given direction can lead to divergent affective responses and (b) to determine how the factors of self-esteem, probability of improvement or decline in outcomes, and control over outcomes influence these responses. The population chosen to examine these issues was cancer patients. Previous research (Wood et al., 1985) has found that the majority of these individuals make social comparisons, suggesting that it is a prevalent coping strategy among them. This research also found that most comparisons were self-enhancing downward comparisons, as would be predicted by downward comparison theory (Wills, 1981). Consequently, we expected that the majority of comparisons would be self-enhancing, and that most of these self-enhancing comparisons would be made to worse-off others. However, we predicted that when upward comparisons were made, individuals high in self-esteem, those who expected their condition to improve, and those who felt their future was controllable would be more likely to experience them as self-enhancing and less likely to experience them as aversive than would those low in self-esteem, those who expected their condition to decline, or those who perceived their condition as uncontrollable. Similarly, we predicted that persons with high self-esteem, expectations for improvement, and belief in control would be less likely to experience downward comparisons negatively and more likely to experience them positively than would those low in self-esteem, with poor prognoses, and with little sense of control.

## Study 1

### Method

*Subjects.* The sample consisted of 55 individuals recruited from a pool of 668 cancer patients who had previously participated in a survey

of social support needs among cancer patients (Taylor, Falke, Shoptaw, & Lichtman, 1986).<sup>2</sup> To be eligible for the present study, patients had to be within 5 years of diagnosis or recurrence and between 30 and 70 years of age. Blocks of potential subjects by gender, estimated prognosis (good versus fair/poor), and support group membership (yes or no) were constructed for selection purposes.<sup>3</sup> Subjects were then randomly selected from these blocks and invited to participate in the interview study. Of the subjects contacted, 93% agreed to participate (i.e., 4 subjects declined).

The sample included 30 women and 25 men, ranging in age from 30 to 66 with a median age of 54. Eighty-three percent were married, and 84% had children. Fifty-six percent were employed, and the median yearly family income was between \$40,000 and \$49,000. Ninety-three percent had completed high school, and 29% were college graduates. The sample was 44% Protestant, 25% Jewish, 13% Catholic, and 18% had another or no religious affiliation.

Participants had been diagnosed or had sustained a recurrence an average of 3.2 years prior to the interview ( $SD = 1.7$ ). Twenty percent of respondents were receiving treatment for their cancer at the time of the interview. Using medical chart materials, an oncologist rated prognosis on a 5-point scale ranging from *very guarded or grave prognosis* (1) to *probable cure* (5). Thirty-six patients had cancers that were rated 4 or 5 (in remission), and the remainder (19) had prognostic ratings of 1, 2, or 3 (active cancers). Patients with all sites of cancer participated.

*Interview.* Respondents were telephoned and the interview was arranged, usually in the home. At the beginning of the structured interview, respondents received an informed consent form, and permission to tape record the interview was obtained. The average interview lasted between 1½ and 2 hr.

The interview covered basic demographic data, the respondent's past and current health status, social support experiences following the cancer diagnosis, perceptions concerning how his or her life had changed following diagnosis, and items relevant to the present investigation, including beliefs about control as well as social comparison processes.

*Social comparison items.* Four questions concerning social comparisons related to the present study. Because previous research has already documented the prevalence of comparisons in a similar population (Wood et al., 1985), we felt closed-ended questions were appropriate. To avoid leading subjects to report particular affective consequences, however, we presented the possibility of both emotional responses before questioning subjects more specifically. Downward comparisons were assessed first. Subjects were told:

Some people have told us that when they see cancer patients who are not doing as well as they are, it makes them feel lucky and grateful that they are not in worse shape themselves. Other people have told us that when they see cancer patients who are not doing as well as they are, it makes them feel worse. For these people, seeing cancer patients who are worse off only increases their fears and anxieties.

Subjects were then asked to rate the frequency with which they had felt lucky or grateful when exposed to worse-off others on a 4-point scale where 1 = *never*, 2 = *rarely*, 3 = *sometimes*, and 4 = *often*. Following this, participants giving a rating greater than 1 were asked to provide an example of a time when they experienced such a comparison. Next, subjects were asked how often they had felt fearful or anxious in response to such people. Subjects indicated their answer on the same

<sup>2</sup> In that previous study, the response rate for participation approximated 80%.

<sup>3</sup> Support group membership was a blocking variable because it related to other aspects of the interview that dealt with issues of social support.

4-point scale, and were again asked for a specific comparison instance. Upward comparisons were assessed next. Subjects were told:

Some people have told us that when they see cancer patients who are doing better than they are, it makes them feel frustrated or depressed. Other people have told us they feel inspired or comforted when they see other cancer patients who seem to be doing better than they are.

Again, subjects rated the frequency of each of these reactions on the same 4-point scale and were asked to provide examples of them.

**Control items.** Both personal control and control by external factors were assessed. The items assessing personal control were prefaced by "Some people who suffer from serious illness feel that they have some control over day-to-day symptoms, over the future course of the disease, or over the treatments themselves, whereas others do not." Subjects were then asked two questions regarding personal control: (a) "Now that your cancer has been detected, to what extent do you feel you have control over the amount of fatigue, pain, or other symptoms you experience on a daily basis?" and (b) "To what extent do you feel you can keep the cancer from spreading or coming back?" Subjects indicated their answers on a 5-point scale ranging from *not at all* to *completely*.

Items assessing the control exerted by other factors were prefaced with "Some people believe that someone or something else may have control over day-to-day symptoms, over the future course of disease, or over treatments themselves, whereas others do not." This was followed by two questions: (a) "To what extent do you think someone or something else has control over your day-to-day symptoms?" and (b) "To what extent do you feel that someone or something else can keep your cancer from spreading or coming back?" Each of these items was followed by the same scale ranging from *not at all* (1) to *completely* (5).

**Self-esteem.** The Rosenberg Self-Esteem Inventory (Rosenberg, 1965) was used as a measure of chronic self-esteem. This questionnaire was left with the patient at the conclusion of the interview, along with measures of adjustment and indicators of cancer-related problems that were part of the larger study. Eighty percent of the respondents returned this questionnaire.

## Results

Looking at the number of respondents who had ever experienced each type of comparison paired with each affective consequence, 82% ( $n = 42$ ) of subjects made downward comparisons and felt good, 59% ( $n = 28$ ) made downward comparisons and felt bad, 40% ( $n = 19$ ) made upward comparisons and felt bad, and 78% ( $n = 37$ ) made upward comparisons and felt good.<sup>4</sup> Although a substantial proportion of the sample reported making each type of comparison with each effect, there were differences in the frequency with which each comparison was reported to have occurred. A one-way multivariate analysis of variance (ANOVA) with four repeated measures of comparison frequency produced a significant effect,  $F(3, 135) = 13.87$ ,  $p < .001$ . Downward positive affect comparisons were the most common, as predicted, although upward positive affect comparisons were almost equally common. As expected, downward negative and upward negative affect comparisons occurred less often. Patients reported making comparisons resulting in positive affect, regardless of direction, more frequently than comparisons resulting in negative affect,  $t(52) = 6.09$ ,  $p < .001$ . Mean frequency ratings and simple comparisons are presented in Table 1.

Two independent raters coded 25% of the cases to determine whether the examples provided by subjects clearly constituted

comparisons and were associated with the designated affect. Interrater agreement on these judgments was 88%. Inconsistencies were resolved through discussion, and one rater coded the remaining cases. Results further substantiate the frequency rating data. Eighty-three percent of those who reported experiencing an upward comparison and feeling good (i.e., who responded with a frequency rating greater than *never*) gave a clear example of a time when this had happened to them; 71% did so for downward/positive affect comparisons. Eighty-two percent of those who had experienced downward negative affect comparisons also provided a clear example of this. Results were less clear for upward comparisons resulting in negative affect: 42% of those who reported experiencing this were able to provide a clear instance of its occurrence.

We also examined the content of these examples. Previous research (Wood et al., 1985) has identified four major dimensions on which cancer patients make social comparisons: prognosis, physical limitations or symptoms, coping and adjustment, and external resources such as finances or social support. Comparisons in a particular direction and with a particular consequence may be more likely to be made on some dimensions than others (e.g., it may be easier to feel good about someone with better adjustment than someone with superior resources to one's own). An independent rater coded each comparison example for the dimension involved so that this possibility could be tested. Interrater reliability (again based on a subset of 25% of the cases coded by an additional rater) for this measure was 90%. We then conducted four Cochran  $Q$  tests, one for each comparison/affect item. The Cochran  $Q$  tests whether the proportions in dichotomous categories (in this case, mentions versus nonmentions of a comparison dimension) are the same across variables (in this case, across the four dimensions). There were significant differences in the frequency with which each dimension was used. This occurred in response to all four questions (downward/negative affect  $Q = 27.07$ ,  $p < .001$ ; downward/positive affect  $Q = 15.40$ ,  $p = .002$ ; upward/negative affect  $Q = 9.00$ ,  $p = .03$ ; upward/positive affect  $Q = 16.67$ ,  $p < .001$ ). However, examination of the frequencies reveals that the patterns of response were the same for three of the four questions. For all but upward/positive affect comparisons, comparisons of prognosis were the most frequent (ranging from 52% to 67% of each category); comparisons on other dimensions were infrequent and occurred about equally often. In the case of upward comparisons resulting in positive affect, comparisons of prognosis were also most common (50%); however, comparisons of adjustment were nearly as frequent (33%). Comparisons of resources and physical status were, again, infrequent and approximately equal.

It was hypothesized that high self-esteem individuals would make more positive affect and less negative affect comparisons in both directions than would low self-esteem individuals. To test this, the sample was split into two groups, those above and those below the median score on the self-esteem inventory. Four  $t$  tests were conducted comparing the frequency with

<sup>4</sup> Percentages reported are of subjects responding to the question. A few respondents indicated that they never compared themselves with others, and some indicated that they did not know any cancer patients with whom the comparison could be made.

Table 1  
*Mean Frequency Ratings of Upward and Downward Comparisons Paired With Positive and Negative Affective Consequences Among Cancer Patients*

Type of comparison	Affective consequence	
	Positive	Negative
Upward	2.63 <sub>a</sub>	1.60 <sub>ab</sub>
Downward	2.75 <sub>b</sub>	2.00 <sub>ab</sub>

Note. Means sharing a common subscript are significantly different,  $p \leq .01$ . Scales ranged from 1 (*never*) to 4 (*often*).  $N = 55$ .

which each group reported making comparisons in each direction with each affective consequence (upward/positive affect, downward/positive affect, upward/negative affect, and downward/negative affect). There were significant differences in the frequency with which persons high and low in self-esteem reported comparisons resulting in negative affect. Specifically, high self-esteem individuals were less likely to feel bad when comparing upward ( $M$  frequencies = 1.25 and 1.95),  $t(31) = 2.60$ ,  $p = .007$ , one-tailed, and less likely to feel bad when comparing downward ( $M$  frequencies = 1.60 and 2.43),  $t(39) = 2.50$ ,  $p = .008$ , one-tailed, than were low self-esteem individuals. The two groups did not differ in the frequency with which they reported positive affect in response to comparison, both  $p$ s (one-tailed)  $> .10$ .

Prognosis was also hypothesized to influence interpretation of comparison information. Participants were divided into a good prognosis group (ratings of 4 and 5) and a poor prognosis group (ratings of 1 through 3). Four  $t$  tests were conducted to test for differences between these groups in the frequency with which they reported each comparison affect and direction. There were no significant differences found, all  $p$ s (one-tailed)  $> .05$ .

Finally, it was hypothesized that individuals who believe they or others have control over their illness would be more likely to report feeling good in response to upward comparisons and less likely to report feeling bad in response to downward comparisons, as compared with those with lower perceived control. Correlations were calculated between each rating of control (personal and other control over daily symptoms and the future course of the illness) and the frequency of each type of comparison. Because prognosis may be related to perceived control, it was partialled out of these analyses. As predicted, the belief that one has personal control over the future course of one's illness and the belief that one has control over daily symptoms were both inversely associated with feeling bad in response to worse-off others ( $r$ s =  $-.31$  and  $-.30$ , respectively, both  $p$ s  $< .05$ ). Perceived other control was unrelated to this measure, and no type of control was associated with the frequency of upward positive affect comparisons.<sup>5</sup>

### Discussion

The present study produced four sets of results that have relevance to social comparison theory. First, in contrast to

much previous theorizing and empirical emphasis, the data revealed that upward and downward comparisons are not intrinsically linked to particular affective outcomes. Instead, as predicted, we found that people may construe both upward and downward comparisons as either positive or negative.<sup>6</sup>

Consistent with downward comparison theory (Wills, 1981), the present study found that cancer patients most frequently engaged in self-enhancing downward comparisons. We had proposed, however, that upward comparisons could be interpreted in a self-enhancing manner as well. This hypothesis was supported. In fact, a majority of the sample made self-enhancing upward comparisons, and these occurred nearly as often as self-enhancing downward ones. For example, one of our respondents said:

When I was going through the worst period, you know, the acute time of therapy and stuff, it was gratifying to see people recovering, having their hair grow back, getting their strength, and so on. Yeah, that was very positive and very helpful.

Just as both directions of comparison may be interpreted positively, both may also lead to negative self-perceptions. Information that another person is doing worse than oneself can be depressing, as can information that someone is doing better than oneself. Interestingly, in the present study the former took place more often than did the latter: Downward comparisons more frequently led to negative affect than did upward comparisons. Respondents tended to be frightened by the experiences of patients who were not recovering from their cancer. For example, one respondent, a breast cancer patient who had been treated by lumpectomy, said:

Well, my girl friend who had the second mastectomy, she has really been through the mill . . . it raises my anxiety terribly because she started off with a lumpectomy and radiation.

This ability to derive positive or negative affective consequences from social comparisons was, as evidenced by respondents' examples, not specific to comparisons of a particular aspect of one's cancer, such as prognosis or adjustment. There was, however, a tendency for upward comparisons on the dimension of coping to more often lead to positive affect than those made on other dimensions.

The second important set of findings for social comparison

<sup>5</sup> One might conjecture that high self-esteem would be related to perceived control and, therefore, that the two sets of analyses would be redundant. However, this was not the case. Self-esteem was unrelated to either perceived control over daily symptoms ( $r = .10$ ) or perceived control over the disease ( $r = .13$ ).

<sup>6</sup> Rather than interpreting the same information differently, an alternative process of deriving particular effects from comparisons would entail the selection of either upward or downward comparison targets who are likely to reflect on oneself in a particular way (e.g., Tesser's, 1986, theory suggests the choice of similar or dissimilar targets). However, it is clear from the examples provided by subjects in the present study that many of them were interpreting exactly the same comparison information in different ways. Many referred to the same target in response to questions assessing both positive and negative reactions. In addition, when characteristics of the target were provided, they were often the same across positive and negative questions, even when the specific target was different.

theory concerned the role of moderating factors in the affective consequences of social comparisons. The ability to avoid negative comparisons was more true of individuals high in self-esteem and (for downward comparisons) those who believed they could control the symptoms or course of the disease than of people low on these characteristics. With respect to self-esteem, we had hypothesized that high self-esteem individuals would be more likely to make self-enhancing comparisons in either direction, and less likely to experience comparisons as threatening, than would persons lower in self-esteem. Only the latter half of this hypothesis was supported. Whereas self-esteem did not affect the frequency with which comparisons were seen as positive, low self-esteem persons were significantly more likely to experience negative outcome comparisons than were persons of high self-esteem.

A similar effect was found with regard to psychological control. Those people who felt they could control their symptoms and the future course of the illness were less likely to feel threatened by exposure to very ill patients. They were not, however, any more likely to focus on the positive implications of another's successful recovery than were persons who felt their future health was uncontrollable.<sup>7</sup>

Third, the ability to avoid negative comparisons appears to depend more on the subjective than objective characteristics of the threatening event. We had predicted that prognosis would influence whether one derived hope from the knowledge that others were improving and despair at news of another's decline. However, the comparer's prognosis was not related to the frequency with which a comparison was seen as threatening or enhancing. The rating of prognosis was an objective measure, however, and many cancer patients retain the belief that they will recover in spite of indications to the contrary. Indeed, Wood and her colleagues (Wood et al., 1985) also failed to find an effect of prognosis when using an objective measure to predict enhancing downward comparisons (see also Marks, Richardson, Graham, & Levine, 1986). Our positive findings concerning control suggest that a subjective measure of respondents' perceived prognosis might have been associated with the ability to derive benefit from comparisons.

Finally, self-serving social comparisons appear to mute the effect of negative information rather than enhance available positive information; that is, both self-esteem and control were associated with fewer negative affect comparisons, but were unrelated to positive comparisons.

## Study 2

Although Study 1 demonstrated that comparisons in a given direction can produce divergent affective responses, it did so within a select population, cancer patients. Recovery is possible, but most patients are at least somewhat uncertain about their prognosis, and unexpected changes in physical states may take place. This factor may influence the data patterns obtained. Study 2 provided an opportunity to replicate the patterns of comparison responses obtained in Study 1 in a different population (Dutch married people) using a different comparison dimension, namely quality of one's marital relationship, with different but conceptually related moderating variables

(namely uncertainty about the quality of one's marriage and marital dissatisfaction).

Specifically, by examining uncertainty about how things were going in one's marriage, we were able to assess the impact of uncertainty on social comparison processes. Festinger (1954) had suggested that the desire for social comparison is particularly strong in the case of uncertainty about one's opinions or abilities. Schachter (1959) maintained that the desire for self-evaluation (i.e., the desire to evaluate the appropriateness of one's reactions) is the primary motive underlying the tendency to affiliate under stress. Taken together and in conjunction with the data from Study 1, these points suggest that uncertainty may predispose people to be especially vigilant to comparison information generally and to negative information more specifically. We therefore predicted that those uncertain in their marriages would report making more social comparisons of all kinds and would be more likely to focus on the negative than the positive aspects of upward and downward comparisons.

In an effort to create a situational analogue to self-esteem, we also examined marital satisfaction as a determinant of the affect generated by upward and downward comparisons. We predicted that, like the low-esteem individuals reacting to self-relevant comparison information in Study 1, individuals experiencing marital dissatisfaction might be more vigilant to the negative information suggested by comparisons of their own marriage to that of others. We therefore expected those high in marital dissatisfaction to make more negative affect comparisons and fewer positive affect comparisons than those higher in marital satisfaction.

## Method

*Subjects.* The sample consisted of 632 married individuals, 304 men and 328 women. Of the sample, 432 subjects (69%) were recruited using an announcement placed in local newspapers, the remaining 200 (31%) by contacting a random sample of a middle-sized Dutch town. This last sample was provided by the city council. The average length of marriage was 16.4 years (range: less than 1 month to 55.3 years). The mean age was 40.6 years (range: 21 to 81), and 79% of the sample had children. Highest level of education achieved varied from elementary education (3.6%) to college education at the master's level or higher (10.9%). Of the sample, 83% of the men and 32% of the women were employed outside the home for 20 or more hours per week. A wide range of occupations were represented in the sample. The number of subjects in the following analyses varies because of occasional missing data.

*Procedure.* The data on the 434 subjects mentioned above were collected as part of the second measurement of a longitudinal study on social comparison processes in marriage (VanYperen & Buunk, 1990). The subjects were contacted by mail and were asked to complete, in privacy, an anonymous questionnaire about "marital relationships." They were not to discuss this questionnaire with their partner before completing it. After 2 weeks, nonrespondents received a reminder and

<sup>7</sup> Somewhat surprisingly, the perception that another agent controlled the course of the illness was unrelated to comparison effects. Previous research (Taylor, Lichtman, & Wood, 1984) found that both vicarious and personal control were associated with positive adjustment to cancer. Apparently, vicarious control does not have the same impact on self-serving social comparisons.

after 4 weeks, a second reminder as well as a new questionnaire. The same procedure was followed for a randomly selected sample of 1,000 individuals from a middle-sized Dutch city. Of this sample, a total of 200 persons (20%) sent back the questionnaire, making up the remaining 31% of the total sample for this study. To obtain an indication of the reasons for nonparticipation, a brief questionnaire was sent to the nonsample. This questionnaire was sent back by 32% of these individuals. The reasons mentioned most often for nonparticipation were "My private life is my own business" (17%), followed by "I get annoyed when I receive a questionnaire without having asked for it" (13%), "I just don't feel like it" (6%), and "I am too old for these kinds of things" (5%).

**Social comparison items.** To assess the affect evoked by upward and downward comparisons, the subjects were presented with modified versions of the four questions from Study 1. To measure the frequency of positive affect evoked by downward comparisons, subjects were asked to answer the following question (translated from Dutch): "How often do you feel *happy* and *pleased* when you compare your own marital relationship with that of others who have a relationship that is *worse* than yours? A 5-point scale was used, with points labeled 1 (*never*), 2 (*seldom*), 3 (*sometimes*), 4 (*quite often*), and 5 (*very often*). To assess the frequency of negative affect evoked by downward comparisons, subjects were asked: "How often do you feel *unhappy* and *displeased* when you compare your own marital relationship with that of others who have a relationship that is *worse* than yours?" Similar questions were asked for negative and positive affect evoked by marriages that were better than one's own.

**Uncertainty item.** To assess the degree of uncertainty in marriage, the respondents were asked to indicate on a 5-point scale (1 = *not at all*, 2 = *hardly*, 3 = *somewhat*, 4 = *quite*, and 5 = *very much*) to what extent they felt uncertain about how things were going in their marriage.

**Marital dissatisfaction.** An 8-item scale (Buunk, 1990) was used to assess marital dissatisfaction. This scale has proven to have high reliability and stability and to relate meaningfully to other variables, including the stability of the relationship and self-rated coping with marital problems (e.g., Buunk, 1987; Buunk & Bosman, 1986). Respondents indicated how often an item applied to their marital relationship on the same 5-point scale that was used for the social comparison items, ranging from *never* (1) to *very often* (5). Five of the items referred to negative feelings and behaviors, such as "My partner irritates me" or "We have quarrels." Three items referred to positive experiences such as "Things are going well between us." Coefficient alpha of the scale was .85 in this sample. Marital dissatisfaction and uncertainty were correlated .50 in the sample.

## Results

**Frequency of comparisons.** Table 2 makes clear that, as was the case in Study 1, positive affect comparisons were made more frequently than comparisons evoking negative affect. Downward comparisons generating positive affect were the most common. Nearly all subjects (95%) reported such comparisons, and 59% said they made this type of comparison quite or very often. Upward positive affect comparisons also occurred regularly among the subjects: 78% of subjects reported experiencing these at some time; 28% stated they made such comparisons quite or very often. Negative affect upward or downward comparisons were less frequent; 59% of the sample stated they made upward comparisons that made them unhappy sometimes, and only 3% made such comparisons quite or very often. About half of the sample (48%) reported downward comparisons evoking negative affect, and just 2% reported they made such comparisons quite or very often. The only gender differ-

Table 2  
Mean Frequency Ratings of Upward and Downward Comparisons Paired With Positive and Negative Affective Consequences Among Married Individuals

Type of comparison	Affective consequence	
	Positive	Negative
Upward	2.70	1.87
Downward	3.59	1.62

Note. All differences among means are significant,  $p \leq .001$ . Scales ranged from 1 (*never*) to 5 (*very often*).  $N = 632$ .

ence was that negative affect upward comparisons were reported more often by women ( $M = 1.95$ ) than by men ( $M = 1.79$ ),  $t(614) = 2.30$ ,  $p < .05$ . That is, women more often than men felt bad when they learned about happier couples.

**Marital dissatisfaction and comparisons.** We had predicted that individuals with high marital dissatisfaction would make fewer positive and more negative comparisons in both directions, whereas the opposite pattern would be characteristic of individuals with satisfying marriages. In order to test this prediction, respondents were divided into three groups on the basis of their marital dissatisfaction scores. Because of ties in the scores on this scale, it was not possible to divide them into groups of equal size (for the high dissatisfaction group [scores 1.39 or lower],  $n = 145$ ; for the medium dissatisfaction group [scores between 1.39 and 1.90],  $n = 254$ ; and for the low dissatisfaction group [scores 1.90 or higher],  $n = 198$ ).

Examining the effects of marital dissatisfaction on upward and downward comparisons, a MANOVA with three levels of marital dissatisfaction was conducted, using the four social comparison items as dependent measures. Analyses were conducted separately for each gender, inasmuch as previous literature suggests that men and women respond differently to sources of strain in relationships (Titus, 1980). The multivariate effect of relationship dissatisfaction on social comparisons was significant for men,  $F(8, 556) = 7.33$ ,  $p < .001$ , as well as for women,  $F(8, 582) = 9.94$ ,  $p < .001$ .

Univariate analyses showed that the level of marital dissatisfaction was significantly and strongly related to the frequency with which downward negative affect comparisons were reported: for men,  $F(2, 280) = 10.96$ ,  $p < .001$ ; for women,  $F(2, 293) = 15.62$ ,  $p < .001$ . The frequency of upward negative affect comparisons was even more strongly related to level of marital satisfaction: for men,  $F(2, 280) = 26.62$ ,  $p < .001$ ; for women,  $F(2, 293) = 33.23$ ,  $p < .001$ . As Figure 1 shows, the higher the level of marital dissatisfaction, the more often individuals felt unhappy and bad when they compared themselves with couples who had better marriages, and the more often marriages worse than their own also evoked negative affect.

In contrast, marital dissatisfaction had little influence on the frequency with which comparisons to other couples evoked positive affect (see Figure 1). There was no significant difference in the frequency with which positive affect upward comparisons were made. However, among women and marginally among men, there was an effect of marital dissatisfaction on the fre-

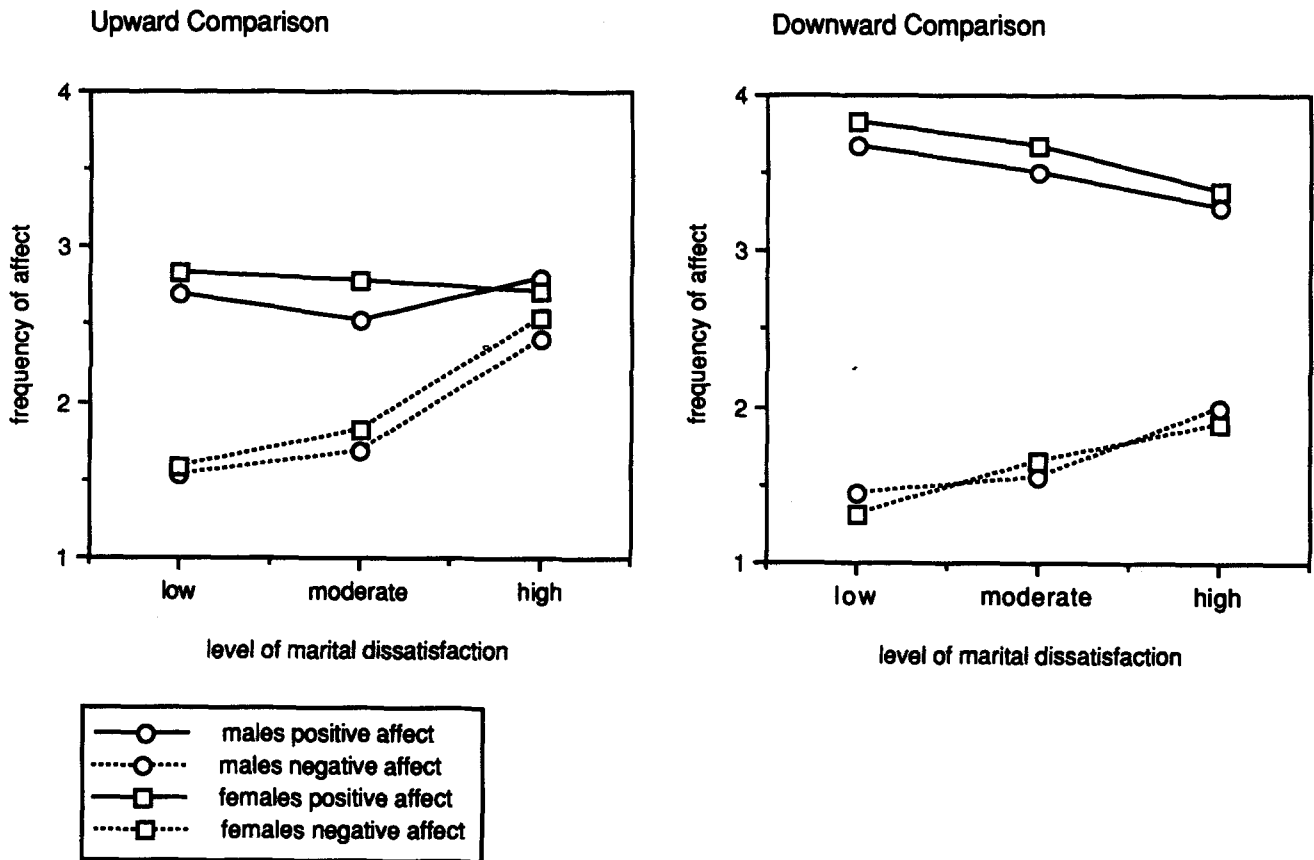


Figure 1. Positive and negative affect generated by upward and downward comparisons for various levels of marital dissatisfaction.

quency of positive affect downward comparisons: for women,  $F(2, 293) = 3.99, p < .05$ ; for men,  $F(2, 280) = 2.64, p < .07$ . People in less happy marriages felt less positively in response to downward comparisons than those whose marriages were more satisfying.

**Marital uncertainty and comparisons.** On the basis of responses to the uncertainty item, three groups were created, the first consisting of those who said they were not at all uncertain about how their marriage was going (score 1;  $n = 199$ ), the second consisting of individuals who said they were hardly uncertain (scores 2;  $n = 275$ ), and the third consisting of those who indicated that they felt somewhat, quite, or very uncertain (scores 3, 4, and 5;  $n = 157$ ).

We had predicted that uncertainty would increase comparisons of all types and that those high in marital uncertainty would make fewer positive and more negative comparisons than those low in uncertainty. Overall, those high in uncertainty made more social comparisons than those low in uncertainty. A MANOVA using three levels of uncertainty as the independent variable and the social comparison items as dependent variables yielded significant main effects for uncertainty,  $F(8, 578) = 9.30, p < .001$ , for men and  $F(8, 618) = 9.55, p < .001$ , for women. However, examination of Figure 2 suggests that this effect can be accounted for primarily by negative affect comparisons.

The univariate  $F$  tests confirm this suggestion. Uncertainty was clearly related to the frequency of negative affect downward comparisons: among men,  $F(2, 291) = 11.33, p < .001$ ; among women,  $F(2, 331) = 11.71, p < .001$ . As Figure 2 shows, the more uncertain individuals felt about their own marriages, the more they experienced negative affect when confronted with marriages that were worse. Comparisons with better marriages appear to generate negative affect even more often. The relationship between uncertainty and the frequency of negative affect upward comparisons was strong and significant among men,  $F(2, 291) = 38.09, p < .001$ , as well as among women,  $F(2, 331) = 40.91, p < .001$ . As is apparent from Figure 2, people who felt uncertain about how things were going in their marriages were unhappy and dissatisfied more often when they compared their own marriage with happier marriages. No significant effects of uncertainty were found with respect to the positive affect comparisons.

### General Discussion

Taken together, the findings from two studies examining social comparison processes in different domains have important implications for social comparison theory. Both studies demonstrated that comparison direction (upward or downward) is not intrinsically linked to affect, as the previous litera-



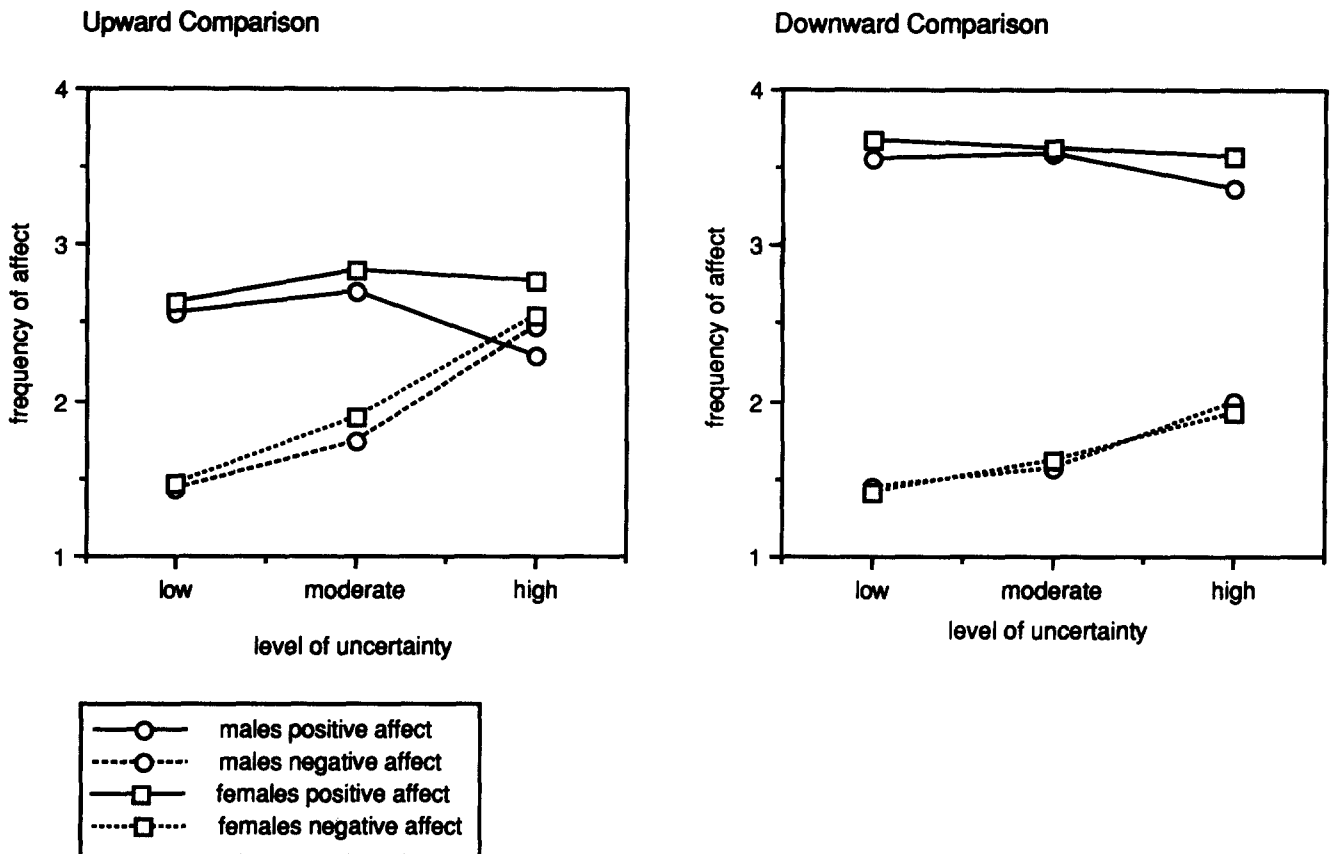


Figure 2. Positive and negative affect generated by upward and downward comparisons for various levels of uncertainty.

ture has often assumed. Rather, both upward and downward social comparisons are capable of generating positive or negative affective responses, depending on which aspect of the comparison is focused on.

The results from the two studies also show some commonalities in the frequencies of different kinds of comparisons. Both studies found that positive affect comparisons were the most common comparisons reported, with positive downward comparisons more common than positive upward comparisons. There are some differences in frequency of types of comparisons between the two studies. Whereas in Study 1, upward comparisons evoked positive affect nearly as often as downward comparisons, in Study 2 upward comparisons were less potent in generating this effect than were downward comparisons. In the same vein, in Study 2, upward comparisons leading to negative affect were more frequent than downward comparisons leading to negative affect, whereas in Study 1 the reverse was true. Perhaps this difference depends on the two types of events, namely cancer and marriage. In normal situations (such as the evaluation of an ongoing marriage), upward comparisons may be relatively threatening because they remind people how poorly they are doing, whereas in stressful circumstances (such as undergoing cancer), seeing a positive example may be encouraging and inspiring. Further research is needed to determine whether individuals experiencing an unusual threat interpret

comparison information differently from people in normal situations.

Another significant regularity in the data concerns the fact that the moderating variables of self-esteem and controllability (in Study 1) and uncertainty and marital satisfaction (in Study 2) largely affected the frequency of negative affect but not positive affect comparisons. Taken together, these results tie in with a larger body of literature in social cognition suggesting that there are cognitive filters of selective attention, representation, and recall that help people maintain positive beliefs (see Taylor & Brown, 1988, for a review). Consistent with that body of data, the results suggest that these filters operate more to keep the negative implications of information out of view than to enhance available positive information.

The results concerning self-esteem provide an interesting insight into a current issue in the comparison literature. Our findings are somewhat inconsistent with Wills's (1981) downward comparison theory, which predicts that low self-esteem individuals or individuals under threat should make a greater number of self-enhancing downward comparisons. Overall, individuals who evaluated themselves (Study 1) or their situation (Study 2) negatively made substantial numbers of downward comparisons, but as just noted, they did not derive a greater amount of self-enhancing information as a result. This finding is more consistent with Crocker et al.'s (1987) results, which found that

high self-esteem individuals were better able than low self-esteem individuals to make comparisons that are self-serving. Crocker et al.'s data had demonstrated that high self-esteem people make *downward* comparisons for this purpose. The present results suggest that high self-esteem individuals are better able to make use of *either* upward or downward comparisons for the purpose of self-enhancement than are low self-esteem individuals.

We had predicted that uncertainty would increase comparisons of all kinds, a prediction that was not upheld. Instead, in Study 2, uncertainty and dissatisfaction regarding one's marriage related to affective consequences of social comparisons the same way, namely in terms of more frequent negatively valenced comparisons. There are at least two possible explanations for this result. One is to argue that uncertainty and dissatisfaction are tapping the same construct. The two measures were highly correlated (.50). Arguing against this point is the fact that marital dissatisfaction also increased the frequency of positive affect downward comparisons, a finding that was not mirrored in the uncertainty data.<sup>8</sup> The other explanation maintains that these measures are tapping two separate dimensions, negativity and ambiguity, that have been previously identified in the stress literature as enhancing the perception of stress (e.g., Billings & Moos, 1984; Gal & Lazarus, 1975; Holahan & Moos, 1986; McFarlane, Norman, Streiner, Roy, & Scott, 1980; Myers, Lindenthal, & Pepper, 1972; Sarason, Johnson, & Siegel, 1978; Stokols, Ohlig, & Resnick, 1978; Vinokur & Selzer, 1975). Uncertainty and dissatisfaction may both increase the experience of strain, which in turn may increase vigilance to the negative information inherent in social comparisons. If uncertainty and dissatisfaction are indeed two separate dimensions of marital perceptions, dissatisfaction would seem to create a greater need for self-enhancing downward comparisons than uncertainty/ambiguity.

There are limitations to the studies. The direction of causality cannot be determined for the moderating variables. Those high in self-esteem, control, marital satisfaction, or certainty may make different comparisons than others, or, alternatively, the avoidance of threatening comparisons may result in a more positive self-image, elevated perceptions of control, greater certainty in one's perceptions, or greater satisfaction. As noted earlier, past research has demonstrated that the use of self-enhancing downward comparisons does improve self-esteem (Crocker & Gallo, 1985; Lemyre & Smith, 1985; Morse & Gergen, 1970). The avoidance of threatening comparisons may have the same effect: Avoiding negative comparisons may be one way in which people high in self-esteem, control, satisfaction, or certainty maintain these perceptions.<sup>9</sup>

The question arises as to whether the results from both studies can be interpreted as evidence of a positivity response bias. There is considerable evidence in the literature that people are biased toward perceiving events positively, a phenomenon that Matlin and Strang have termed the Pollyanna principle (Matlin & Strang, 1978). Several factors argue against a response bias interpretation. First, there is little evidence of a positivity bias in these data; rather, negativity is avoided. Second, subjects who reported particular affective consequences of particular comparisons generally had examples readily available to buttress their perceptions, a finding that suggests that more than an

automatic response bias was involved. Third, reports of affective consequences of particular comparisons varied systematically with perceived control in Study 1 and with dissatisfaction and uncertainty in Study 2, which would not be expected from a simple response bias. Moreover, the question of how to interpret positivity in psychological responses is itself under debate. Rather than representing a response bias, many psychologists have argued that mild positivity is how the majority of people experience a broad array of outcomes and that responses indicating such are not themselves a function of response set, but accurately reflect a mildly positive perception of the world (e.g., see Parducci, 1968; Taylor & Brown, 1988).

The present data have implications for certain long-standing issues in the social comparison and coping literatures, particularly how people respond to and cope with forced comparisons (Brickman & Bulman, 1977; Mettee & Smith, 1977). The comparison environment appears to be somewhat less malleable than was characterized by Festinger (1954; see Wood, 1989). As a result, comparison targets are sometimes forced on the comparer, as in the case of cancer patients exposed to other patients in the waiting room. The present analysis suggests that some people, particularly those who evaluate themselves or their situation positively or those with a sense of personal control, may respond to unwanted comparisons much as they respond to other negative information in their environments, filtering and distorting the data to fulfill their needs and expectations (see Taylor & Brown, 1988, for a review).

The results also have implications for the literature on coping and adaptation. Both Wills (1981) and Taylor and Lobel (1989) have assumed that the propensity to make downward comparisons under threat stems from an augmented need for self-enhancement induced by threat. Yet the results from Study 2 suggest that *negative* affect comparisons in both directions are especially augmented by marital dissatisfaction and that positive affect downward comparisons are slightly lower among those high in marital dissatisfaction relative to those low in marital dissatisfaction. Recall, too, that in Study 1 (in which all subjects were under some degree of threat), negative affect downward comparisons were relatively more prevalent than in Study 2. It appears that the effects of threat on social comparison may be more complex than has been previously assumed. Although threat may produce a propensity for self-enhancing downward comparisons, it may simultaneously increase all kinds of negative affect comparisons, an effect that may aug-

<sup>8</sup> However, the single item measuring uncertainty may have been a less reliable indicator of a common underlying dimension than the multiple items assessing marital dissatisfaction. This could explain why marital dissatisfaction, as the more sensitive indicator, would be associated with positive affect downward comparisons, whereas uncertainty, as a relatively insensitive indicator, might not.

<sup>9</sup> In the case of the control results, it seems unlikely that the avoidance of negative information would lead to a stronger belief in personal control, except through the mediating variable of self-esteem. People who use comparisons to maintain the belief that they are capable may infer that they are also in control of their situations. However, self-esteem and control were unrelated in Study 1. It thus seems more likely that the belief in personal control enables one to avoid the negative impact of comparison information rather than the reverse.

ment rather than diminish distress. Of relevance too is the finding that persons who feel relatively less control over their health may also be threatened by downward comparison information, rather than comforted by it, as previous theory and results have suggested (Wills, 1981; Wood et al., 1985). Finally, the results of Study 2 suggest that those high in uncertainty, and therefore likely to seek comparison information, are also more likely to feel threatened by what they learn. The conditions that increase or decrease threatening interpretations of comparisons clearly merit additional study.

Finally, the finding that both upward and downward comparisons can be used for the purpose of self-enhancement addresses a long-standing question in the literature on social comparisons: How can people who are in need of self-enhancing feedback make use of better-off others to facilitate eventual change in their standing? If people are not capable of so doing, the preservation of self-esteem could have negative long-term consequences, leading people to ignore strategies of improvement. Our results address this concern, suggesting that people can make use of comparisons in either direction in order to simultaneously provide useful information and to maintain their positive self-perceptions (cf. Taylor & Lobel, 1989).

### References

- Amoroso, D. M., & Walters, R. H. (1969). Effects of anxiety and socially mediated anxiety reduction on paired-associate learning. *Journal of Personality and Social Psychology*, *11*, 388-396.
- Billings, A. C., & Moos, R. H. (1984). Coping, stress, and social resources among adults with unipolar depression. *Journal of Personality and Social Psychology*, *46*, 877-891.
- Brickman, P., & Bulman, R. J. (1977). Pleasure and pain in social comparison. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 149-186). Washington, DC: Hemisphere.
- Buunk, B. (1987). Conditions that promote break-ups as a consequence of extradyadic involvements. *Journal of Social and Clinical Psychology*, *5*, 237-250.
- Buunk, B. (1990). Relationship interaction satisfaction scale. In J. Touliatos, B. F. Perlmutter, & M. A. Straus (Eds.), *Handbook of family measurement techniques* (pp. 106-107). Newbury Park, CA: Sage.
- Buunk, B., & Bosman, J. (1986). Attitude similarity and attraction in marital relationships. *Journal of Social Psychology*, *126*, 133-134.
- Crocker, J., & Gallo, L. (1985, August). *The self-enhancing effect of downward comparison*. Paper presented at the annual meeting of the American Psychological Association, Los Angeles.
- Crocker, J., & Schwartz, I. (1985). Prejudice and ingroup favoritism in a minimal intergroup situation: Effects of self-esteem. *Personality and Social Psychology Bulletin*, *11*, 379-386.
- Crocker, J., Thompson, L. L., McGraw, K. M., & Ingerman, C. (1987). Downward comparison prejudice and evaluations of others: Effects of self-esteem and threat. *Journal of Personality and Social Psychology*, *52*, 907-916.
- Dakof, G. A. (1986). *Psychological and social adaptation to Parkinson's Disease*. Unpublished doctoral dissertation, University of California, Berkeley.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542-575.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117-140.
- Fiske, S. T., & Taylor, S. E. (1984). *Social cognition*. Reading, MA: Addison-Wesley.
- Friend, R. M., & Gilbert, J. (1973). Threat and fear of negative evaluation as determinants of locus of social comparison. *Journal of Personality*, *41*, 328-340.
- Gal, R., & Lazarus, R. S. (1975). The role of activity in anticipating and confronting stressful situations. *Journal of Human Stress*, *1*, 4-20.
- Gibbons, F. X. (1986). Social comparison and depression: Company's effect on misery. *Journal of Personality and Social Psychology*, *51*, 140-148.
- Goethals, G. R., & Darley, J. M. (1977). Social comparison theory: An attributional approach. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 259-278). Washington, DC: Hemisphere.
- Gruder, C. L. (1971). Determinants of social comparison choices. *Journal of Experimental Social Psychology*, *7*, 473-489.
- Hakmiller, K. L. (1966). Threat as a determinant of downward comparison. *Journal of Experimental Social Psychology*, *Suppl. 1*, 32-39.
- Holahan, C. J., & Moos, R. H. (1986). Personality, coping, and family resources in stress resistance: A longitudinal analysis. *Journal of Personality and Social Psychology*, *51*, 389-395.
- Kiesler, S. B. (1966). Stress, affiliation and performance. *Journal of Experimental Research in Personality*, *1*, 227-235.
- Latané, B. (1966). Studies in social comparison: Introduction and overview. *Journal of Experimental Social Psychology*, *Suppl. 1*, 1-5.
- Lemyre, L., & Smith, P. M. (1985). Intergroup discrimination and self-esteem in the minimal intergroup paradigm. *Journal of Personality and Social Psychology*, *49*, 660-670.
- Marks, G., Richardson, J. K., Graham, J. W., & Levine, A. (1986). Role of health locus of control beliefs and expectations of treatment efficacy in adjustment to cancer. *Journal of Personality and Social Psychology*, *51*, 443-450.
- Marsh, H. W., & Parker, J. W. (1984). Determinants of student self-concept: Is it better to be a relatively large fish in a small pond even if you don't learn to swim as well? *Journal of Personality and Social Psychology*, *47*, 213-231.
- Matlin, M. W., & Strang, D. J. (1978). *The Pollyanna principle: Selectivity in language, memory, and thought*. Cambridge, MA: Schenkman.
- McFarlane, A. H., Norman, G. R., Streiner, D. L., Roy, R., & Scott, D. J. (1980). A longitudinal study of the influence of the psychosocial environment on health status: A preliminary report. *Journal of Health and Social Behavior*, *21*, 124-133.
- Mettee, D. R., & Smith, G. (1977). Social comparison and interpersonal attraction: The case for dissimilarity. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 69-101). Washington, DC: Hemisphere.
- Morse, S., & Gergen, K. J. (1970). Social comparison, self-consistency, and the concept of self. *Journal of Personality and Social Psychology*, *16*, 148-156.
- Myers, J. K., Lindenthal, J. J., & Pepper, M. P. (1972). Life events and mental status: A longitudinal study. *Journal of Health and Social Behavior*, *13*, 398-406.
- Nosanchuk, T. A., & Erickson, B. H. (1985). How high is up? Calibrating social comparison in the real world. *Journal of Personality and Social Psychology*, *48*, 624-634.
- Parducci, A. (1968). The relativism of absolute judgments. *Scientific American*, *219*, 84-90.
- Rosenberg, M. (1965). *Society and the adolescent selfimage*. Princeton, NJ: Princeton University Press.
- Salovey, P., & Rodin, J. (1984). Some antecedents and consequences of social-comparison jealousy. *Journal of Personality and Social Psychology*, *47*, 780-792.
- Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. *Journal of Consulting and Clinical Psychology*, *46*, 932-946.

- Schachter, S. (1959). *The psychology of affiliation*. Stanford, CA: Stanford University Press.
- Smith, R. H., & Insko, C. A. (1987). Social comparison choice during ability evaluation: The effects of comparison publicity, performance feedback, and self-esteem. *Personality and Social Psychology Bulletin*, *13*, 111-122.
- Stokols, D., Ohlig, W., & Resnick, S. M. (1978). Perception of residential crowding, classroom experiences, and student health. *Human Ecology*, *6*, 33-57.
- Taylor, S. E., & Brown, J. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193-210.
- Taylor, S. E., Falke, R. L., Shoptaw, S. J., & Lichtman, R. R. (1986). Social support, support groups, and the cancer patient. *Journal of Consulting and Clinical Psychology*, *54*, 608-615.
- Taylor, S. E., Lichtman, R. R., & Wood, J. V. (1984). Attributions, beliefs about control, and adjustment to breast cancer. *Journal of Personality and Social Psychology*, *46*, 489-502.
- Taylor, S. E., & Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review*, *96*, 569-575.
- Tesser, A. (1986). Some effects of self-evaluation maintenance on cognition and action. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 435-464). New York: Guilford Press.
- Tesser, A., Millar, M., & Moore, J. (1988). Some affective consequences of social comparison and reflection processes: The pain and pleasure of being close. *Journal of Personality and Social Psychology*, *54*, 49-61.
- Testa, M., & Major, B. (April 1988). *Affective and behavioral consequences of social comparison*. Paper presented at the annual meetings of the Eastern Psychological Association, Buffalo, NY.
- Thompson, S. C. (1981). Will it hurt less if I can control it? A complex answer to a simple question. *Psychological Bulletin*, *90*, 89-101.
- Titus, S. L. (1980). A function of friendship: Social comparisons as a frame of reference for marriage. *Human Relations*, *33*, 409-431.
- VanYperen, N. W., & Buunk, B. (1990). A longitudinal study of equity in intimate relationships. *European Journal of Social Psychology*, *20*, 287-309.
- Vinokur, A., & Selzer, M. (1975). Desirable versus undesirable life events: Their relationship to stress and mental distress. *Journal of Personality and Social Psychology*, *32*, 329-337.
- Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal of Experimental Social Psychology*, *Suppl. 1*, 27-31.
- Wheeler, L., Shaver, K. G., Jones, R. A., Goethals, G. R., Cooper, J., Robinson, J. E., Gruder, C. L., & Butzine, K. W. (1969). Factors determining the choice of a comparison other. *Journal of Experimental Social Psychology*, *5*, 219-232.
- Wheeler, L., & Zuckerman, M. (1977). Commentary. In J. M. Suls & R. L. Miller (Eds.), *Social comparison processes: Theoretical and empirical perspectives* (pp. 335-357). Washington, DC: Hemisphere.
- Wills, T. A. (1981). Downward comparison principles in social psychology. *Psychological Bulletin*, *90*, 245-271.
- Wills, T. A. (1987). Downward comparison as a coping mechanism. In C. R. Snyder & C. Ford (Eds.), *Coping with negative life events: Clinical and social-psychological perspectives* (pp. 243-268). San Diego, CA: Academic Press.
- Wilson, E. S. R., & Benner, L. A. (1971). The effects of self-esteem and situation upon comparison choices during ability evaluation. *Sociometry*, *34*, 381-397.
- Wood, J. V. (1984). *Social comparison in adjustment to breast cancer*. Unpublished doctoral dissertation, University of California, Los Angeles.
- Wood, J. V. (1989). Contemporary social comparison theory. *Psychological Bulletin*, *106*, 231-248.
- Wood, J. V., Taylor, S. E., & Lichtman, R. R. (1985). Social comparison in adjustment to breast cancer. *Journal of Personality and Social Psychology*, *49*, 1169-1183.

Received August 22, 1989

Revision received March 9, 1990

Accepted March 17, 1990 ■