# Social Comparison by Dysphoric and Nondysphoric College Students: The Grass Isn't Always Greener on the Other Side[1]

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*We manipulated information about a comparison-other in order to resolve contrasting findings regarding social comparisons of dysphoric and nondysphoric individuals. In Study 1, subjects rated themselves and either an average college student, an average depressed college student, or an average nondepressed college student on depression-relevant, nondepression-relevant, and depression-irrelevant items. In Study 2, detailed information about one of five comparison-others ranging from very positive to very negative was presented to subjects. In both studies, dysphoric and nondysphoric subjects did not make pervasively unfavorable or favorable social comparisons; instead, social comparisons were a function of the similarity between self and other. That*

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*favorable, unfavorable, and evenhanded social comparisons could be observed for both dysphoric and nondysphoric subjects by manipulating the identity of the comparison-other suggests that mixed findings for previous social comparison research may be attributed to differences and ambiguities in the comparison-others used.*

Throughout its long history, research based on social comparison theory has examined self-evaluation motivations for comparison to others, as individuals gain knowledge about their abilities and opinions by comparing themselves to others (Festinger, 1954). Negative self-evaluations have been recognized by many theorists from diverse perspectives to be central features of depression (e.g., Beck, 1976; Freud, 1917/1957); thus, social comparison theory offers one avenue for exploring depressive self-evaluations (see Swallow & Kuiper, 1988, for a review).

Recent research on social comparison processes has emphasized self-enhancement motives and the favorable impact that social comparison can have on self-esteem (Taylor, 1983; Wills, 1981, 1991; Wood & Taylor, 1991). Thus, rather than generating accurate social comparisons, individuals may be biased in their evaluations in order to enhance themselves (Wood & Taylor, 1991). This self-enhancement is hypothesized to occur when an individual's self-esteem is threatened, leading the individual to seek information about "worse-off" others (downward comparison). In support of this, research with dysphorics and with individuals whose self-esteem has been threatened has demonstrated a preference for downward comparison information and favorable affective responses to downward comparison, such as improved mood and increased optimism (e.g., Gibbons, 1986; Gibbons & Gerrard, 1989, 1991; Gibbons & McCoy, 1991).

## Social Comparison in Depression and Nondepression

In a review of studies on depression and social comparison biases, Alloy, Albright, and Clements (1987) observed a mixed set of social comparison findings. Whereas nondepressed subjects tended to engage in self-favoring social comparisons across studies, depressives tended to compare themselves in an evenhanded manner (neither better nor worse than others) *or* they perceived others more favorably than themselves. Thus, self-enhancing, downward comparisons by depressives were not observed in these studies. One explanation for this conflict relates to differences in social comparison measures. Instead of preference measures, subjects explic-

itly rated themselves and a comparison-other identified by the experimenter ("comparative rating" measures; Wills, 1991; Wood & Taylor, 1991). That depressed subjects exhibit different social comparisons (evenhanded or other-enhancing) in comparative rating paradigms is central to the current studies.

One possible reason for the conflicting results regarding depressives' comparative ratings is that past studies often used ambiguous or "average" others as comparison targets, allowing subjects' idiosyncratic interpretations of these vaguely defined others to influence the results (i.e., subjects' may have idiosyncratically defined an "average" other as being more favorable, less favorable, or similar to themselves). These idiosyncratic perceptions may be constructed and used by subjects to create favorable, unfavorable, or evenhanded social comparisons depending on the presence or absence of self-enhancing motivations (DeVellis et al., 1990; Goethals, Messick, & Allison, 1991). Festinger (1954) emphasized that similarity of comparison-others is important for accurate self-evaluation; however, it is difficult to determine the similarity between subjects and comparison-others when ambiguous targets are presented. Thus, in the present two studies, we manipulated similarity of the comparison-other to the subject, and predicted conditions under which depressives and nondepressives would exhibit unfavorable, evenhanded, and favorable social comparisons.

Importantly, the observed mixed results for depressive social comparison also have implications for Beck's (1967, 1976) cognitive theory of depression. According to Beck, depressives have a "systematic bias against the self" in which they perceive themselves in pervasively unfavorable ways. One way this pervasive negative self-view is manifested and maintained is through unfavorable social comparisons. According to this view, depressives are thought to have a negative social comparison bias in which they characteristically (or always) view themselves unfavorably relative to others. Depressives' negative schemas[3] are hypothesized to be so preeminent in their influence that the depressed individuals become oblivious to situational or contextual information (Beck, Rush, Shaw, & Emery, 1979), such as objective social comparison similarities. In contrast, nondepressives are hypothesized to be rational information processors who make use of contextual information. The observed mixed results for depressive social comparison suggest that depressives do not have a sys-

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[3]The term *self-schema* will be used throughout the remainder of the manuscript to be consistent with Beck's (1967; 1976) schema model of depression. However, in the present context, the term *self-concept* could be substituted for *self-schema* with no damage to the intended meaning.

tematic, biased interpretation of social comparison information, and that contextual information may be important.

Recent research suggests that depressives' interpretations of feedback depend not only on their schemas, but also on the similarity between those schemas and contextual information (Dykman, Abramson, & Albright, 1991; Dykman, Abramson, & Hartlage, 1989). Thus, rather than demonstrating a consistent bias for unfavorable or favorable social comparison, we suggest that social comparisons for both depressed and nondepressed subjects will depend on the contextual information, that is, the objective similarity between the self-schema and the comparison-other. Relative to the self-schema, comparisons involving another who is less favorable should result in self-favoring social comparisons and comparisons involving another who is more favorable should result in self-disfavoring comparisons. Comparisons involving another who is highly similar to the self-schema should result in evenhanded social comparisons. In essence, then, this "schema similarity hypothesis" suggests that *both* depressed and nondepressed individual are highly *sensitive* to contextual information about others and use this information appropriately to make relatively objective social comparison evaluations.

## STUDY 1

In Study 1, we tested the schema similarity hypothesis that social comparison differences for both dysphoric and nondysphoric students would depend on the relative similarity between the comparison-other and the content of subjects' self-schema. Because subjects were not diagnosed in a clinical sense, we use the term *dysphoric* rather than *depressed*, following recommendations of Kendall, Hollon, Beck, Hammen, and Ingram (1987). Self-schemas were conceptualized in terms of affect (dysphoric, nondysphoric subjects), and three comparison-others were used to present contextual information in a between-subject design: average college student (ACS), average depressed college student (ADCS), and average nondepressed college student (ANDCS). These comparison-others were selected to vary in their perceived *similarity* to dysphoric and nondysphoric subjects' self-schemas, and the labels *average depressed* and *average nondepressed student* connote others with relatively negative or positive attributes, respectively, along dimensions likely to be *relevant* to subjects' self-schemas.

Finally, one would expect that attributes that are relevant to depression and nondepression would be more central to dysphoric and non-

dysphoric subjects' self-schemas, respectively, than would attributes irrelevant to depression. It was predicted that relevant attributes would lead to larger group differences in social comparison than irrelevant attributes. Thus, we asked our subjects to rate themselves and the comparison-other on depression-relevant (DR) (negative), nondepression-relevant (NDR) (positive), and depression-irrelevant (DI) (neutral) attributes.

## Method

### Subjects

Dysphoric and nondysphoric Northwestern University students were identified using the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961). Subjects completed the BDI twice, separated by 1 to 2 weeks on average. Subjects ($n = 75$; 39 females, 36 males) were assigned to the dysphoric group if their BDI scores were $\geq 10$ (following Kovacs & Beck, 1977), and to the nondysphoric group ($n = 83$; 38 females, 45 males) if their BDI scores were $\leq 4$ at both testing sessions. That subjects were required to meet the criteria for group assignment on two separate occasions (as recommended by Kendall et al., 1987) reduces the likelihood that they were experiencing only very transient dysphoric or nondysphoric mood states. Data for subjects whose BDI scores were between 5 and 9, who experienced a mood change, or did not participate in the second session were not included in the analyses ($n = 446$).

The mean BDI score for dysphoric subjects fell into the moderate range of severity (Kovacs & Beck, 1977) at both testing sessions (Time 1: $M = 17.38$; Time 2: $M = 16.76$).The mean BDI score for nondysphoric subjects was 1.96 at Time 1 and 1.21 at Time 2. There was a significant effect of testing session, as BDI scores decreased between Time 1 and Time 2 for both dysphoric and nondysphoric subjects, $F(1, 155) = 10.31$, $p < .005$. This did not interact with the group variable, $F < 1$.

### Experimental Design

The study employed a 2 (Group: Dysphoric; Nondysphoric) × 3 (Comparison-Other: ACS; ADCS; ANDCS) × 3 (Item Content: DR; NDR; DI) × 2 (Target: Self; Other) factorial design. Group and comparison-other were between-subjects variables; item content and target were within-subjects variables.

## Materials

*Social Comparison Questionnaires.* A pool of 108 items was generated to form three matched versions of the social comparison questionnaire (no effects of questionnaire version were observed). Each version contained 36 items; of these, 12 were depression-relevant (e.g., "I am insecure"), 12 were nondepression-relevant (e.g., "I am confident"), and 12 were depression-irrelevant (e.g., "I like mystery novels"). The questionnaire also varied the comparison-other to be rated (e.g., "The average [depressed, nondepressed] college student is confident"). Subjects made their ratings on 6-point Likert scales, with 0 meaning *not at all true* and 5 meaning *completely true.*

The items were selected from items used in Tabacknik, Crocker, and Alloy's (1983) depression and social comparison study, the Self-Perception Questionnaire developed by Greenberg and Alloy (1989), and the Behavioral Predictions Questionnaire developed by Clements, Alloy, Greenberg, and Kolden (1987). These items were classified as DR, NDR, or DI based both on ratings by five depression researchers, and past empirical evidence indicating that DR and NDR but not DI items reliably discriminated depressed from nondepressed subjects in the expected direction (see Greenberg & Alloy, 1989, and Tabacknik et al., 1983 for a complete description of items).[4]

*Manipulation Check.* The three comparison-others were chosen to be more or less similar to dysphoric and nondysphoric students' self-schemas. To check the effectiveness of this similarity manipulation, a self-schema continuum was designed to assess how similar each group's self-schema was to the three comparison-others. A *separate* sample of dysphoric ($n = 43$) and nondysphoric ($n = 78$) students (selected according to the same BDI

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[4]Two additional samples of Northwestern University students rated the items on a scale of 0 to 5 for (1) the importance of each characteristic to the self, or (2) their confidence in their self-ratings for each characteristic (with 5 representing greater importance or confidence). These ratings were collected because the motivation to self-enhance during social comparison may be influenced by the importance of comparison dimensions and subjects' certainty of their standing relative to others (Festinger, 1954). No differences between dysphoric ($n = 14$) and nondysphoric ($n = 35$) subjects were observed for ratings of importance, $F < 1$. There was, however, a main effect of item content for importance ratings, $F(2, 46) = 136.90$, $p < .0001$. NDR content ($M = 3.92$) was rated as more important and DI content ($M = 2.42$) was rated as less important to the self. Ratings for DR content ($M = 3.19$) fell between NDR and DI importance ratings. The Group × Item Content interaction was not significant, $F < 1$.

Dysphoric ($n = 11$) and nondysphoric ($n = 32$) subjects made similar ratings of confidence, as there was no effect of group, $F(1, 41) = 1.42$, n.s. However, a significant effect of item content was observed, $F(2, 40) = 6.31$, $p < .005$. Confidence ratings were significantly lower for NDR content ($M = 4.20$) and significantly higher for DI content ($M = 4.44$); ratings for DR content fell between ($M = 4.28$). The Group × Item Content interaction was not significant, $F(2, 40) = 1.69$, n.s.

criteria used in the main study) were asked to rate themselves on a scale from −7 to +7, with cutpoints of −7 to −2.5 indicating average depressed college student, cutpoints of −2.5 to +2.5 indicating average college student, and cutpoints of +2.5 to +7 indicating average nondepressed college student. As expected, dysphorics' self-ratings were less favorable than those of nondysphorics, $F(1, 117) = 40.10$, $p < .001$. Importantly, the mean of dysphorics' self-ratings ($M = -.58$) fell into the average college student range, whereas the mean for nondysphorics' self-ratings ($M = 2.65$) fell into the average nondepressed college student range. Thus, dysphoric students as a group possessed self-schemas similar to the ACS, whereas non-dysphoric students' self-schemas were similar to the ANDCS. Such dysphoric–nondysphoric differences in the content of the self-schema should predict when dysphoric and nondysphoric subjects in the main study sample will exhibit favorable, unfavorable, and evenhanded social comparisons.

## Procedure

Subjects completed the BDI during a group testing session. Within an average of 1 to 2 weeks following their first session, subjects were recruited to participate in an experiment that "relates mood and personality variables to perception." During session 2, subjects completed several mood inventories (including the BDI), and a perceptual vigilance task in order to distract attention away from the social comparisons. Subjects were not timed during this task, nor did they receive feedback. Finally, subjects completed one of the versions of the social comparison questionnaire, in which they rated both themselves and another (ACS, ADCS, or ANDCS) on each item. These ratings served as the social comparison dependent variables.

## Results

All statistical tests were two-tailed. The degrees of freedom varied for certain analyses because some subjects failed to respond to some items. For all analyses, there were no main effects or interactions involving subject gender or questionnaire version (all $p > .05$). Thus, the results reported here were collapsed across these variables.

Support for the schema similarity hypothesis would be observed by interactions involving the group (dysphoric, nondysphoric), comparison-other (ACS, ADCS, ANDCS), item content (DR, NDR, DI), and target (self, other) variables. This analysis yielded two significant three-way inter-

actions, Group × Item Content × Target [$F(2, 130) = 28.53, p < .0001$] and Comparison-Other × Item Content × Target [$F(4, 260) = 27.10, p < .0001$], which suggested that the similarity of the comparison-other to the self was important in influencing subjects' social comparisons. In the following sections, these interactions are analyzed further as they relate to the study hypotheses. For ease of presentation, self minus other difference scores are used first as the measure of social comparison, then separate self and other ratings are presented.

## Social Comparisons as a Function of Comparison-Other and Item Content

The two three-way interactions were analyzed by examining dysphoric and nondysphoric subjects' self minus other difference scores across item content and comparison-other. Subjects' ratings for DR items were reverse-coded, such that higher ratings for these items indicated a more favorable rating. For all items, positive values represented favorable comparisons (self was rated more favorably than other) and negative values represented unfavorable comparisons (self was rated less favorably than other). Even-handed social comparisons were represented by scores of zero.

As may be seen in Fig. 1, there were significant effects for both comparison-other and group for DR and NDR item content, but not DI content. Looking first at the mean social comparison ratings for dysphoric subjects, the effect of comparison-other was significant for DR content [$F(2, 131) = 17.58, p < .0001$] and NDR content [$F(2, 131) = 19.46, p < .0001$]. As predicted, dysphoric subjects rated the self *more favorably* than the ADCS for DR content [$F(1, 131) = 13.71, p < .001$] and NDR content [$F(1, 131) = 31.04, p < .0001$]; they rated themselves *similarly* to the ACS across the three types of item content [$F(2, 130) = 2.34$, n.s.]; and dysphoric subjects rated the self *less favorably* than the ANDCS for DR content [$F(1, 131) = 18.66, p < .0001$] and NDR content [$F(1, 131) = 7.22, p < .01$]. Dysphoric subjects did not rate the self differently than the comparison-other for DI items [no effect of comparison-other, $F(2, 131) = 1.57$, n.s.].

Similar effects of item content across comparison-other conditions were observed for nondysphoric subjects' social comparisons [DR items: $F(2, 131) = 39.17, p < .0001$; NDR items: $F(2, 131) = 47.88, p < .0001$]. As predicted, nondysphoric subjects rated the self *much more favorably* than the ADCS for DR and NDR content [$F(1, 131) = 164.37, p < .0001$, and $F(1, 131) = 205.99, p < .0001$, respectively]; they rated themselves *more favorably* than the ACS for DR content [$F(1, 131) = 5.98, p < .02$] and NDR content [$F(1, 131) = 10.63, p < .01$]; and nondysphoric subjects rated
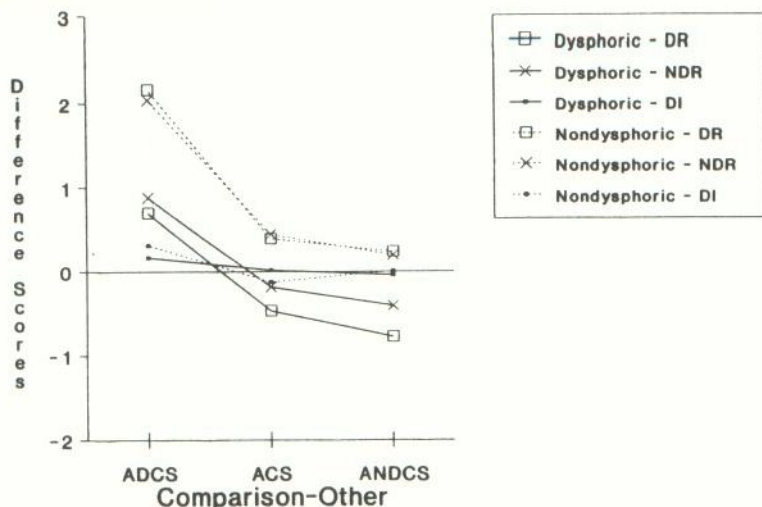
**Fig. 1.** Self minus other difference scores as a function of comparison-other, item content, and subject group (Study 1). DR = depression-relevant; NDR = nondepression-relevant; DI = depression-irrelevant; ADCS = average depressed college student; ACS = average college student; ANDCS = average nondepressed college student.

themselves *similarly* to the ANDCS across the three types of item content [$F(2, 130) = .93$, n.s.]. There was also a significant effect of comparison-other for nondysphoric subjects' social comparisons for DI items [$F(2, 131) = 8.19, p < .0005$]. Nondysphoric subjects rated DI items as more true for themselves than for the ADCS [$F(1, 131) = 15.91, p < .001$], but rated themselves similarly to the ACS and ANDCS on DI items.

## Separate Self and Other Ratings as a Function of Item Content and Group

Dysphoric subjects appeared to rate DR and NDR content differently when making social comparisons, whereas nondysphoric subjects' social comparisons were the same for DR and NDR content (see Fig. 1). Dysphorics were less favorable in their social comparisons for DR items than for NDR items for each comparison-other, suggesting that these subjects may have treated items with positive or negative content differently when rating either themselves or another. In order to explore this further, separate self and other ratings were examined.

Subjects' self-ratings did not differ across comparison-other ($F < 1$ for both dysphoric and nondysphoric groups); therefore, ratings were col-

**Table I.** Mean Self-Ratings Across Item Content for Dysphoric and
Nondysphoric Subjects in Study 1

| Group | Item Content | | |
| --- | --- | --- | --- |
| | Depression-relevant[a] | Nondepression-relevant[b] | Depression-irrelevant |
| Dysphoric | 2.22 | 2.80 | 2.77 |
| Nondysphoric | 3.67 | 3.69 | 2.79 |

[a]Depression-relevant items were reverse-scored, such that higher scores indicate
a positive self-schema.
[b]High scores on nondepression-relevant items indicate a positive self-schema.

lapsed across comparison-other in Table I. Dysphorics' self-ratings were
less favorable for DR items than for NDR items, whereas nondysphorics'
self-ratings for DR and NDR content did not differ (higher scores repre-
sented a more favorable self-view). Group differences, with nondysphoric
subjects rating themselves more favorably than dysphoric subjects, were ap-
parent for DR [$F(1, 131) = 140.23, p < .0001$] and NDR items [$F(1, 131)
= 75.95, p < .0001$], but not DI content ($F < 1$). This suggests a reason
why dysphorics' social comparisons were more unfavorable for DR than
NDR content (see Fig. 1): Their self-schema content appears to be par-
ticularly unfavorable for negative attributes, but not as unfavorable for posi-
tive (NDR) attributes. Other investigators have suggested that DR content
may be "activated" to a greater extent in dysphorics' self-schemas (e.g.,
Kuiper & Derry, 1980), which would have implications for how information
is processed through the self-schema about other people (i.e., comparison-
others) as well.

As expected given the manipulation, subjects rated the ANDCS most
favorably, followed by the ACS and ADCS for DR [$F(2 131) = 152.24,
p < .0001$] and NDR [$F(2, 131) = 165.31, p < .0001$] items, but not DI
($F < 1$) items (see Table II). Nondysphoric subjects did not differ in their
ratings of comparison-others on DR and NDR items. Dysphoric subjects,
however, again made ratings that were less favorable on DR items relative
to NDR items across the three comparison-others. Although subjects gen-
erally agreed in their perceptions of the comparison-others, there were
two exceptions: Dysphoric subjects rated both the ACS and ANDCS less
favorably than did nondysphorics on DR items [$F(1, 131) = 9.17, p < .01$,
and $F(1, 131) = 8.09, p < .01$, respectively]. These findings suggest that
dysphoric and nondysphoric subjects may differ in how negatively they per-
ceive others, with dysphorics perceiving more depression-related attrib-
utes, even when the comparison-other is explicitly described as
nondepressed.

Table II. Mean Other Ratings Across Item Content and Comparison-Other for Dysphoric and Nondysphoric Subjects in Study 1[a]

| Group | Item content | Comparison-other | | |
|-------|--------------|-------|------|-------|
| | | ADCS | ACS | ANDCS |
| Dysphoric | DR[b] | 1.42 | 2.69 | 3.10 |
| | NDR[c] | 1.73 | 3.03 | 3.34 |
| | DI | 2.63 | 2.80 | 2.72 |
| Nondysphoric | DR | 1.54 | 3.14 | 3.55 |
| | NDR | 1.67 | 3.14 | 3.58 |
| | DI | 2.61 | 2.79 | 2.79 |

[a]ADCS = average depressed college student; ACS = average college student; ANDCS = average nondepressed college student; DR = depression-relevant; NDR = nondepression-relevant; DI = depression-irrelevant.
[b]Depression-relevant items were reverse-scored, such that higher scores indicate a positive self-schema.
[c]High scores on nondepression-relevant items indicate a positive self-schema.

## Social Comparisons and Centrality of Item Content

Depression and nondepression attributes were thought to be more central to dysphoric and nondysphoric subjects' self-schemas than irrelevant attributes. The Group × Item Content × Target interaction we obtained also provides support for the schema similarity hypothesis that dysphoric–nondysphoric group differences in social comparison would be larger for content relevant to depression (DR and NDR items) than for depression-irrelevant content.Collapsed across comparison-other and using self-other difference scores as the measure of social comparison (see Fig. 2), dysphoric–nondysphoric group differences in social comparison were greatest for DR items [$F(1, 131) = 59.07, p < .0001$], followed by NDR items [$F(1, 131) = 42.38, p < .0001$], with no significant group differences for DI items ($F < 1$). These findings are consistent with the notion that items that are more central to the self-schemas of dysphoric and nondysphoric subjects would result in greater social comparison group differences.

Interestingly, there was no effect of item content on dysphoric subjects' social comparisons across comparison-other condition [$F(2, 130) = 1.35$, n.s. (see solid line, Fig. 2]. In previous research using "average" others (e.g., Tabachnik et al., 1983), this has been interpreted as "depressive evenhandedness," as self- and other ratings are similar (note difference scores near zero) and are not influenced by item content. Thus, by statistically ignoring the effect of comparison-other context on dysphorics' social comparisons, previous results demonstrating depressive evenhandedness have
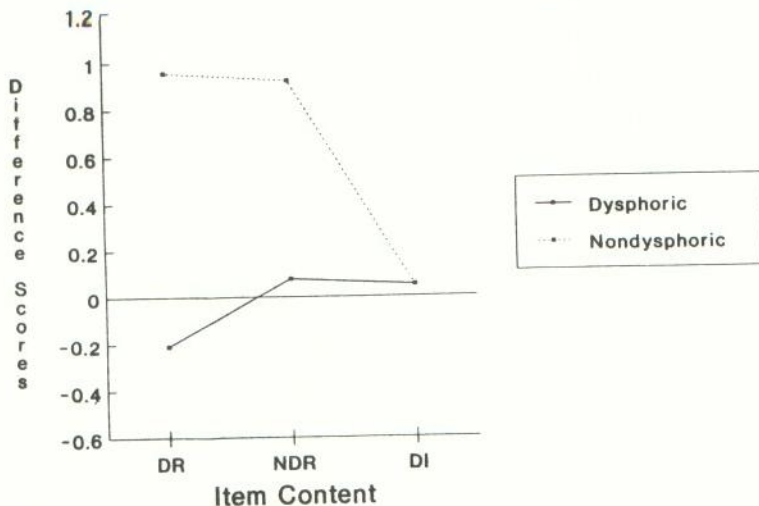
**Fig. 2.** Self minus other difference scores as a function of item content and subject group (Study 1). DR = depression-relevant; NDR = nondepression-relevant; DI = depression-irrelevant.

been replicated. This would suggest that not specifying the comparison-other (e.g., by collapsing across comparison-other, thus creating "an average other") influences the social comparison effects that are observed. Similar findings regarding the specificity of comparison targets have been observed. For example, Perloff and Fetzer (1986) found that individuals judged themselves as less vulnerable to negative life events than vague or unfamiliar others, but similar in vulnerability to known, close others, indicating that specificity of the target has an important influence on the social comparison findings that are observed.

## Discussion

It was predicted that social comparison ratings would be a function of the similarity of the comparison-other to the self-schema, with the self-schema conceptualized in terms of affect-relevant content. Considerable support was obtained for this schema similarity hypothesis: Social comparisons for both dysphoric and nondysphoric subjects were not consistently favorable, unfavorable, or evenhanded. Rather, both groups appeared to

be sensitive to the characteristics of others and used this contextual information appropriately when forming comparative judgments.

Similar results were obtained in a study which involved giving ambiguous feedback to depressed and nondepressed subjects, and subjects chose the cues that best described their performance (Dykman et al., 1989). Neither group was exclusively biased or unbiased in their choice of feedback cues; rather, both groups demonstrated positive, negative, and unbiased responding, with the direction and degree of bias being a systematic function of the match between the average content of the feedback and the content of subjects' self-schemas.

This schema approach suggests that what differs between dysphoric and nondysphoric subjects' cognitions is not *how* they think or process information, but the *content* of their self-schemas and the processed information (Dykman et al., 1989; Hollon & Garber, 1988). No social comparison differences between dysphoric and nondysphoric individuals were observed when the content of the two groups' self-schemas did not differ (depression-irrelevant items). In contrast, items that do discriminate the content of dysphoric and nondysphoric self-schemas (depression-relevant and nondepression-relevant) did result in social comparison differences.

## STUDY 2

Study 1 demonstrated that dysphoric and nondysphoric subjects' social comparisons were a function of the similarity between the self-schema and the comparison-other. Given, however, that nondysphorics perceived themselves to be most similar to the average nondepressed college student (see also Tabachnik et al., 1983), no comparison-other was more positive than nondysphorics' self-schema. Thus, it was impossible to demonstrate nondysphoric *unfavorable* social comparisons, as would be predicted by the schema similarity hypothesis (see also Wheeler, 1966). In Study 2, similarity of self and other was manipulated in a more fine-grained way by including five comparison-others who varied in how negatively or positively they were represented: very negative, moderately negative, neutral, moderately positive, and very positive.

In Study 1, the content of subjects' self-schemas was assumed to be related to the severity of depressive symptoms as assessed by the BDI. In Study 2, however, a special self-schema questionnaire assessed the degree of depressive/nondepressive content in subjects' self-schemas. This method was preferred because the items on the self-schema questionnaire were more relevant to the social comparison task, and provided a more accurate

way to assess the similarity between the self and comparison-other. On a final social comparison questionnaire in which both self and other were rated, we expected dysphoric and nondysphoric subjects to make positive, negative, or evenhanded social comparisons depending on the similarity between self and other.

## Accuracy of Social Comparison

Several investigators have addressed the notion of accuracy of social comparison, suggesting that accurate comparisons are useful and necessary because they provide feedback regarding existing self-evaluations, and allow one to act according to one's abilities (Jones & Regan, 1974; Mettee & Smith, 1977; Swallow & Kuiper, 1988; Wilson, 1973). In general, the findings from Study 1 suggest that both dysphorics and nondysphorics make social comparison judgments in an accurate manner based on the similarity of the comparison-other to their self-schemas. One piece of evidence from Study 1, however, suggests that there may be dysphoric–nondysphoric group differences in accuracy: Dysphoric subjects rated comparison-others less favorably on depression-relevant items than nondysphorics.

In Study 1, the only information provided about the comparison-others were general labels (e.g., "average college student"), and thus, one could only determine accuracy of subjects' other-perceptions in a general sense. However, when presented with a more detailed description of comparison-others, would subjects accurately perceive the comparison-other?

To examine this question, a critical feature of Study 2 was that detailed information about the comparison-other was provided. One aspect of accuracy in social comparison is whether individuals make ratings for the comparison-other that match the objective information (Kruglanski, 1989). To assess accuracy in the present study, subjects completed self-ratings on items that assess the self across depressed, nondepressed, and depression-irrelevant content domains. During a second session, subjects received information about the comparison-other, which consisted of the identical "self" questionnaire, ostensibly filled out by the comparison-other. Thus, subjects had *objective* item-by-item evidence regarding the similarity of the self and the comparison-other. Subjects then completed a social comparison questionnaire in which they simultaneously rated themselves and the comparison-other on a set of similar items. Difference scores were obtained by subtracting the values provided by the experimenter for the objective comparison-other from subjects' ratings for the comparison-other;

this difference score represented the degree of accuracy in subjects' perception of the comparison-other.

Based on Study 1 findings, it was predicted that dysphorics would rate others less favorably than was objectively true, particularly on DR items. This prediction is also consistent with the downward comparison theory hypothesis that dysphoric individuals should select downward comparison information to enhance their self-esteem (e.g., Wills, 1991). In the present study, dysphoric individuals may selectively attend to negative or unfavorable information about others, which may lead them to rate others less favorably than is objectively true.

## Method

### Subjects

Northwestern University undergraduates ($n$ = 269; 136 females, 133 males) participated and received course credit. The first session occurred in the context of group testing, and subjects completed the BDI and the self version of the social comparison questionnaire in random order. In order to obtain a measure of self-schema from subjects' ratings on the self questionnaire, responses to DR and NDR items were summed, and a difference scores was obtained (NDR–DR). A median split using these difference score was computed to create the low (dysphoric) self group ($n$ = 135, $M$ = 19.40, $sd$ = 19.33, range = –67 to 46), and the high (non-dysphoric) self group ($n$ = 135, $M$ = 66.51, $sd$ = 13.98, range = 47 to 100).

### Materials

*Social Comparison Questionnaires.* Two questionnaires were created from the items used in Study 1. Each version consisted of 54 items that included depression-relevant, nondepression-relevant, and depression-ir-relevant items. One version was used as the self version, on which subjects rated themselves and received information about a comparison-other. The second version was used as the social comparison questionnaire; for each item subjects first rated themselves then the comparison-other on 8-point Likert scales (*not at all True* to *Completely True*).

*Comparison-Other Manipulation.* In order to provide information about the comparison-other, the self version of the questionnaire was presented to subjects as if it had been completed by another student. Five

comparison-others were used, ranging from very negative to very positive. In order to help subjects form an impression of this comparison-other as a real person, they were given a brief biography that provided a picture and some demographic information. Biographies depicted a male or female; subjects made same-sex comparisons.

Subjects' self ratings for DR and NDR items from group testing were used to create fictitious item ratings for the five comparison-others. A quintile split of subjects' NDR–DR self ratings was computed, and the mean NDR-DR score from each quintile served as the NDR-DR score for the five comparison-other questionnaires. Ratings for DR an NDR items were made to sum to the NDR–DR score within each quintile in order to create the five comparison-others. For example, the mean NDR-DR score for the highest quintile of self-ratings was 83, and, therefore, ratings for the very positive other questionnaire summed to create an NDR–DR score of 83. Ratings for DI items were identical on all of the comparison-other versions, and represented the mean for each of these items across all groups from the initial group testing sample.

### Procedure

Subjects were recruited to participate in a group testing session at the beginning of the school term and completed the BDI and self version of the questionnaire as part of a larger packet of questionnaires. Subjects were placed in the appropriate subject group (low/dysphoric, high/non-dysphoric) based on the median split of the NDR–DR scores from this initial self questionnaire. Also from these self data, a quintile split based on the NDR–DR scores provided information for developing the five comparison-other questionnaires (described above).

Following completion of the initial group testing session, subjects were randomly assigned to a comparison-other group [very positive (VPOS): $n = 51$, 27 females, 24 males; moderately positive (MPOS): $n = 55$, 27 females, 28 males; neutral: $n = 54$, 27 females, 27 males; moderately negative (MNEG): $n = 53$, 27 females, 26 males; very negative (VNEG): $n = 55$, 28 females, 27 males]. In the second session subjects completed the BDI and some additional questionnaires. Information about the comparison-other was then provided, including the biography and the self questionnaire, ostensibly filled out by the other student. Subjects were told to study the information, and that they would need to know the information for a later part of the session. Subjects then completed the social comparison questionnaire in which they made ratings for both themselves and the comparison-other.

# Results

All statistical tests were two-tailed. The degrees of freedom varied for certain analyses because some subjects failed to respond to some items. For these analyses, there were no main effects or interactions involving subject gender (all $p > .05$), and thus the results reported here were collapsed across this variable.

Subjects' NDR–DR difference scores from the self questionnaire indicated that, on average, subjects comprising the low self-schema group were most similar to the moderately negative other, and high self-schema subjects were most similar to the moderately positive other. Based on the schema similarity hypothesis, low subjects should have been evenhanded when comparing to the moderately negative other, but should have rated themselves favorably relative to the very negative other, and rated themselves increasingly more unfavorably relative to the neutral, moderately positive, and very positive others. Subjects in the high group should have been evenhanded when comparing themselves to the moderately positive other, but should have rated themselves less favorably relative to the very positive other, and rated themselves increasingly more favorably relative to the neutral, moderately negative, and very negative comparison-others.

## Direction of Social Comparisons

Self minus other difference scores from the social comparison questionnaire were used as the measure of social comparison. There were significant interactions for self–other difference scores involving comparison-other and item content $[F(8, 498) = 16.09, p < .01]$ and subject group and item content $[F(2, 249) = 42.48, p < .01]$. These interactions replicated the findings observed in Study 1, and suggest that the similarity of the comparison-other to the self on schema-relevant dimensions influences subjects' social comparison judgments.[5]

As can be seen in Fig. 3, the subject group and comparison-other effects occurred only for DR and NDR content but not DI content. For DR content, the main effects of comparison-other and subject group were significant $[F(4, 250) = 29.00$ and $F(1, 250) = 56.92$, respectively, $p < .01$ for both]. Similarly for NDR content, results indicated main effects of com-

[5]It is important to note that when the Beck Depression Inventory was used to classify subjects into dysphoric and nondysphoric groups, the same main effects and interactions were observed. This was true for classification based on a median split of BDI scores, as well as when more stringent criteria were used (nondysphoric: BDI $\leq$ 4; dysphoric: BDI $\geq$ 10), as in Study 1. Results are reported for subject group based on self-schema scores from the self questionnaire because this classification was more relevant to the social comparison task.
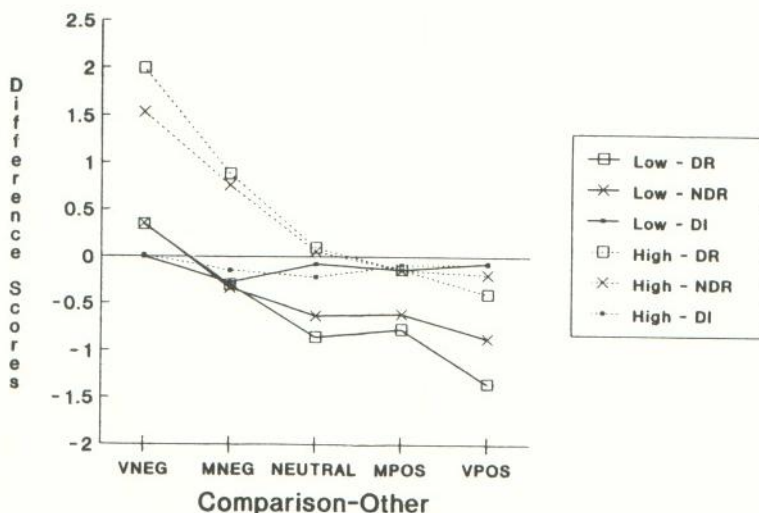
**Fig. 3.** Self minus other difference scores as a function of comparison-other, item content, and subject group (Study 2). DR = depression-relevant; NDR = nondepression-relevant; DI = depression-irrelevant; VNEG = very negative; MNEG = moderately negative; MPOS = moderately positive; VPOS = very positive.

parison-other $[F(4, 250) = 22.55, p < .01]$ and subject group $[F(1, 250) = 45.44, p < .01]$. There were no main effects or interaction of subject group and comparison-other for DI items, all $p > .10$.

For both DR and NDR content, positive scores indicated favorable social comparisons and negative scores represented unfavorable comparisons. Low self-schema subjects rated themselves less favorably than the very positive, moderately positive, and neutral others, and slightly less favorably than the moderately negative other, but rated themselves slightly more positively than the very negative other. In contrast, high self-schema subjects rated themselves *less favorably* than the very positive other for DR content, but were evenhanded when comparing to the moderately positive and neutral others, and rated themselves more positively than the moderately negative and very negative others. That high self-schema subjects demonstrated unfavorable social comparisons when comparing to the very positive other provides further support for the schema similarity hypothesis, and extends the findings for direction of social comparison observed in Study 1. For NDR content, high self-schema subjects were evenhanded when comparing themselves to very positive, moderately positive, and neutral others, and rated themselves more positively than the moderately negative and very negative others.
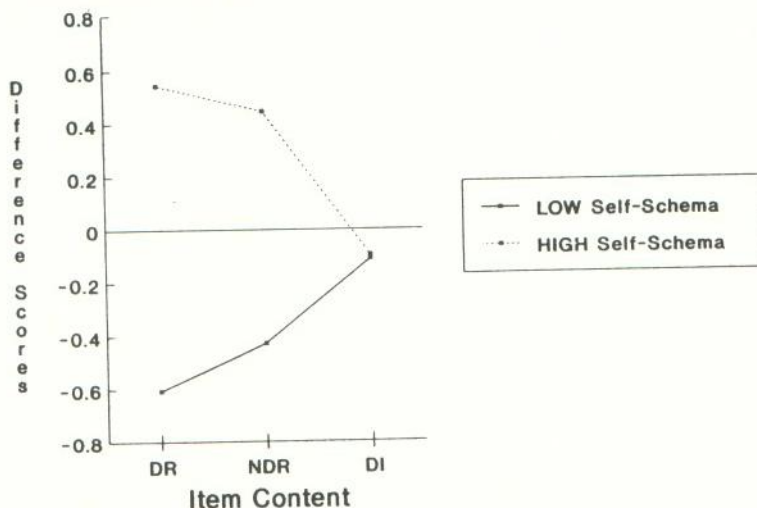
Fig. 4. Self minus other difference scores as a function of item content and subject group (Study 2). DR = depression-relevant; NDR = nondepression-relevant; DI = depression-irrelevant.

## Social Comparisons and Centrality of Item Content

Using the self–other difference scores as the measure of social comparison, low–high group differences for social comparison were observed for DR items, $F(1, 250) = 56.92$, $p < .01$, and NDR items, $F(1, 250) = 45.44$, $p < .01$ (see Fig. 4). There were no differences between Low and High subjects for DI items, $F < 1$. These findings are consistent with the notion that items that were more central to the self-schemas of low and high subjects would result in social comparison group differences.[6]

## Accuracy of Subjects' Ratings of Comparison-Others

Difference scores were obtained by subtracting the objective values provided by the experimenter from subjects' ratings for the comparison-

[6]In contrast to the findings for Study 1, there was an effect of item content for low self-schema subjects' social comparisons collapsed across comparison-other condition. In this study there were three comparison-others who were more favorable than low subjects' self-schema, and only one less favorable comparison-other. Thus, collapsing across the comparison-other variable would produce a social comparison difference score that was negative, on average (as observed). The conclusion, however, remains unchanged: Not specifying the comparison-other (e.g., by collapsing across comparison-other, thus creating "a more positive average other," in this case) influenced the social comparison effects that were observed.

other; this difference score represented the degree of accuracy in subjects' perception of the comparison-other. Positive scores indicated that the comparison-other was rated more favorably, whereas negative scores indicated that the comparison-other was rated less favorably than was objectively true. Scores of zero indicated accurate ratings of the comparison-other.

It was predicted that subjects with dysphoric self-schemas (low subjects) would rate the comparison-others less favorably than was objectively true. This was not supported; the main effect of subject group on accuracy difference scores was not significant, $F < 1$ (low: $M$ accuracy = .02; high: $M$ accuracy = .06).

In general, subjects' accuracy ratings were influenced by item content $[F(2, 156) = 256.30, p < .001]$, as all subjects' ratings were generally less favorable for DR content and more favorable for NDR and DI content than was objectively true for the comparison-others ($M$ DR accuracy = −.418; $M$ NDR accuracy = +.315; $M$ DI accuracy = +.160). Thus, subjects appeared to be more extreme in their ratings of others relative to the objective information.

## GENERAL DISCUSSION

### Schema Similarity in Social Comparison

Results of the two studies supported the schema similarity prediction that social comparison ratings would be a function of the similarity of the comparison-other to subjects' self-schemas. The findings from Study 2 extended these results by demonstrating unfavorable social comparisons by nondysphoric subjects. Predictions based on Beck's cognitive theory of depression were not supported, as dysphorics were not consistently unfavorable in their social comparisons, but were sensitive to contextual social comparison information. Neither group appeared to be biased. Rather, the difference between dysphoric and nondysphoric subjects was not *how* they thought or processed information (a bias interpretation), but the *content* of their self-schemas and the processed information (Dykman et al., 1989; Hollon & Garber, 1988).

These studies demonstrate that dysphoric individuals are capable of making self-favoring social comparisons, suggesting that the grass *isn't* always greener on the other side for dysphoric subjects. Simply by manipulating the comparison-other who was rated, subjects demonstrated favorable, unfavorable, or evenhanded social comparisons. Thus, mixed findings observed in previous studies may be due to differences and ambiguities in the targets selected for comparison. More importantly, group dif-

ferences between dysphoric and nondysphoric subjects occurred primarily because of dysphorics' unfavorable *self*-ratings, not their comparison-other ratings. The resulting social comparisons only differed as a function of group because the social comparisons were "anchored" to these different self-ratings.

## Accuracy of Social Comparison

In Study 2, accuracy was operationalized in terms of the correspondence between subjects' judgments and the information provided about the comparison-others by the experimenter. Results did not support the prediction that dysphoric individuals would rate others less favorably than objectively true, although subjects may have experienced heightened demands for accuracy due to the detailed nature of the information available. Other evidence suggests that when less detailed information about others is presented, dysphoric subjects rate others more negatively relative to themselves (Albright & Clements, 1992).

Accuracy ratings were most influenced by item content; all subjects' ratings of the other were generally less favorable for negative content and more favorable for positive content than was objectively true. This bias may operate through an availability process (Tversky & Kahneman, 1973), in which negative items access or make available a representation of the other in which the negative features are salient, leading to inaccurately unfavorable ratings about the comparison-other. In contrast, positive items may make available a representation of the other that is relatively favorable, leading to judgments about the other that are more favorable than is objectively true. These findings suggest that subjects' social comparisons may be easily influenced by the comparison dimensions (see also Wood, 1989), indicating the need for care in the control and measurement of comparison dimensions that are used.

## Comparison Dimensions: Relevance, Importance, and Confidence

In the current studies, the social comparison items were designed to vary along the dimension of relevance to self; depression- and nondepression-relevant items were included to be relevant to dysphoric and non-dysphoric subjects' self-schemas, whereas depression-irrelevant items were not relevant. These irrelevant items, however, were also neutral in valence (neither positive nor negative). Thus, it is not clear from the present studies whether relevance or valence is more important for social comparison differences. More recent data, however, suggest that when irrelevant items

that have positive and negative valence are used, social comparisons for these irrelevant items follow the same pattern as positively and negatively valenced relevant items (Albright & Henderson, 1992). These findings suggest that relevance may be less important for social comparison than the valence of the comparison dimensions. An alternative interpretation is that during social comparison *any* valenced information may become "relevant" to the self-concept. To the extent that social comparison involves determining one's relative standing, any valenced information that implies "better than" or "worse than" may become important, even if the dimension is not especially relevant to the self-concept.

As noted earlier, the depression- and nondepression-relevant and depression-irrelevant items were also rated by two additional samples for (1) the importance of each characteristic to the self, and (2) subjects' confidence in their self ratings for each characteristic. While no dysphoric–nondysphoric group differences were observed, content of the items had an effect for each type of rating. Nondepression-relevant content was rated as more important and self-ratings for these items were made with less confidence, whereas depression-irrelevant content was rated as less important and self-ratings were made with greater confidence.

Depression- and nondepression-relevant items were used because these were considered to be relevant or important to dysphoric and nondysphoric subjects' self-schemas. These items were not necessarily important to subjects' self-descriptions, however, as the mean importance ratings were 3.19 and 3.92, respectively, on a 0 to 5 scale (with 5 indicating *Very Important*). Depression-irrelevant items were rated as low in importance ($M = 2.42$). To the extent that subjects may be motivated to self-enhance during social comparisons on *important* self-dimensions, our findings of relatively objective social comparisons may be due to the only moderate importance of the items. In contrast, subjects were highly confident in their self-ratings across *all* the item content (means > 4.20 for each item content on a 0 to 5 scale with 5 indicating *Very Confident*). Festinger (1954) recognized that uncertainty of one's standing relative to others influences the motivation for social comparison. Thus, if subjects were relatively certain about their self-ratings (and certain about the comparison-others' standing on the dimensions, given the objective information provided), there may have been little motivation to generate inaccurate (e.g., self-enhancing) social comparisons. Additional research involving clearly important dimensions for which subjects are uncertain about their standing may generate self-enhancing or self-derogating comparative ratings rather than relatively objective comparisons.

## *Implications for Clinical Depression*

A limitation of the present studies is the use of dysphoric students, and it is important to test whether these findings generalize to depressed individuals. Depressives may be capable of favorable, unfavorable, and evenhanded comparisons, but because their self-schemas are overwhelmingly negative (Kuiper & Derry, 1980), there may be few opportunities for them to compare to others who are *more* negative. Thus, given the effort that may be involved in seeking information about more negative comparison-others (recall the "selection" dependent measure used in downward social comparison studies), depressives may be choosing, consciously or unconsciously, situations or positive comparison-others that perpetuate unfavorable social comparisons. Thus, a contributory factor in depression may be a relative inability to create favorable social comparison contexts (see also DeVellis et al., 1990; Swallow & Kuiper, 1992).

In sum, differences between dysphoric and nondysphoric subjects' social comparisons were solely a function of different self-ratings for the two groups. There were few group differences for subjects' ratings of others, nor were there group differences in the comparison process—the assessment of similarity between self and other. Dysphoric and nondysphoric subjects in the present studies did not make pervasively unfavorable or favorable social comparisons, but rather, social comparisons were a function of the similarity between self and other. That favorable, unfavorable and evenhanded social comparisons could be observed by manipulating the identity of the comparison-other suggests that mixed findings for previous social comparison research may be attributed to differences and ambiguities in the comparison-others used. Given that dysphoric individuals seem capable of making favorable social comparisons, future research that addresses why depressives generally fail to do so should provide valuable insight into the maintenance, and possibly etiology, of depression.

### REFERENCES

Albright, J. S., & Clements, C. M. (1992, May). *Social comparison and perceptions of others: Depressive self-enhancement.* Paper presented at the annual meeting of the Midwestern Psychological Association, Chicago.

Albright, J. S., & Henderson, M. J. (1992, August). *Comparative ratings and selection in depressive and nondepressive social comparison.* Paper presented at the annual meeting of the American Psychological Association, Washington, DC.

Alloy, L. B., Albright, J. S., & Clements, C. M. (1987). Depression, nondepression, and social comparison biases. In J. E. Maddux, C. D. Stoltenberg, & R. Rosenwein (Eds.), *Social processes in clinical and counseling psychology* (pp. 94-112). New York: Springer-Verlag.

Beck, A. T. (1967). *Depression: Clinical, experimental and theoretical aspects.* New York: Harper & Row.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders.* New York: International Universities Press.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford Press.

Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry, 4,* 53-63.

Clements, C. M., Alloy, L. B., Greenberg, M. S., & Kolden, G. (1987). *Depression, anxiety and self-schemata: A test of Beck's content-specificity hypothesis.* Unpublished manuscript, Northwestern University.

DeVellis, R. F., Holt, K., Renner, B. R., Blalock, S. J., Blanchard, L. W., Cook, H. L., Klotz, M. L., Mikow, V., & Harring, K. (1990). The relationship of social comparison to rheumatoid arthritis symptoms and affect. *Basic and Applied Social Psychology, 11,* 1-18.

Dykman, B. M., Abramson, L. Y., & Albright, J. S. (1991). Effects of ascending and descending patterns of success upon dysphoric and nondysphoric subjects' encoding, recall, and predictions of future success. *Cognitive Therapy and Research, 15,* 179-199.

Dykman, B. M., Abramson, L. Y., Alloy, L. B., & Hartlage, S. (1989). Processing of ambiguous and unambiguous feedback by depressed and nondepressed college students: Schematic biases and their implications for depressive realism. *Journal of Personality and Social Psychology, 56,* 431-445.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7,* 117-140.

Freud, S. (1957). Mourning and melancholia. In J. Strachey (Ed.), *The complete psychological works of Sigmund Freud.* (Vol. 14). London: Hogarth Press. (Originally published 1917).

Gibbons, F. X. (1986). Social comparison and depression: Company's effect on misery. *Journal of Personality and Social Psychology, 51,* 1-9.

Gibbons, F. X., & Gerrard, M. (1989). Effects of upward and downward social comparison on mood states. *Journal of Social and Clinical Psychology, 8,* 14-31.

Gibbons, F. X., & Gerrard, M. (1991). Downward comparison and coping with threat. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 317-345). Hillsdale, NJ: Erlbaum.

Gibbons, F. X., McCoy, S. B. (1991). Self-esteem, similarity, and reactions to active versus passive downward comparison. *Journal of Personality and Social Psychology, 60,* 414-424.

Goethals, G. R., Messick, D. M., & Allison, S. T. (1991). The uniqueness bias: Studies of constructive social comparison. In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 149-176). Hillsdale, NJ: Erlbaum.

Greenberg, M. S., & Alloy, L. B. (1989). Depression versus anxiety: Schematic processing of self- and other-referent information. *Cognition and Emotion, 3,* 207-223.

Hollon, S. D., & Garber, J. (1988). Cognitive therapy. In L. Y. Abramson (Ed.), *Social cognition and clinical psychology: A synthesis* (pp. 204-253). New York: Guilford Press.

Jones, S. L., & Regan, D. T. (1974). Ability evaluation through social comparison. *Journal of Experimental Social Psychology, 10,* 133-146.

Kendall, P. C., Hollon, S. D., Beck, A. T., Hammen, C. L., & Ingram, R. E. (1987). Issues and recommendations regarding use of the Beck Depression Inventory. *Cognitive Therapy and Research, 11,* 289-299.

Kovacs, M., & Beck, A. T. (1977). Empirical-clinical approach toward a definition of childhood depression. In J. G. Schulterbrandt & A. Raskin (Eds.), *Depression in childhood: Diagnosis, treatment and conceptual models.* New York: Raven Press.

Kruglanski, A. W. (1989). The psychology of being "right": The problem of accuracy in social perception and cognition. *Psychological Bulletin, 106,* 395-409.

Kuiper, N. A., & Derry, P. A. (1980). The self as a cognitive prototype: An application to person perception and depression. In N. Cantor & J. F. Kihlstrom (Eds.), *Personality, cognition, and social interaction* (pp. 215-232). Hillsdale, NJ: Erlbaum.

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 experimental perspectives* (pp. 69-101). Washington, DC: Hemisphere.

Perloff, L. S., & Fetzer, B. K. (1986). Self-other judgments and perceived vulnerability to victimization. *Journal of Personality and Social Psychology, 50,* 502-510.

Swallow, S. R., & Kuiper, N. A. (1988). Social comparison and negative self-evaluations: application to depression. *Clinical Psychology Review, 8,* 55-76.

Swallow, S. R., & Kuiper, N. A. (1992). Mild depression and frequency of social comparison behavior. *Journal of Social and Clinical Psychology, 11,* 167-180.

Tabachnik, N., Crocker, J., & Alloy, L. B. (1983). Depression, social comparison and the consensus effect. *Journal of Personality and Social Psychology, 45,* 688-699.

Taylor, S. E. (1983). Adjustment to threatening events. *American Psychologist, 38,* 1161-1

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency probability judgments. *Cognitive Psychology, 5,* 207-232.

Wheeler, L. (1966). Motivation as a determinant of upward comparison. *Journal Experimental Psychology, 2*(Suppl. 1), 27-31.

Wills, T. A. (1981). Downward comparison principles in social psychology. *Psycholog Bulletin, 90,* 245-271.

Wills, T. A. (1991). Similarity and self-esteem in downward comparison. In J. Suls & T Wills (Eds.), *Social comparison: Contemporary theory and research* (pp. 51-78). Hillsd NJ: Erlbaum.

Wilson, S. R. (1973). Ability evaluation and self-evaluations as types of social compariso *Sociometry, 36,* 600-607.

Wood, J. V. (1989). Theory and research concerning social comparisons of personal attribu *Psychological Bulletin, 106,* 231-248.

Wood, J. V., & Taylor, K. L. (1991). Serving self-relevant goals through social comparis In J. Suls & T. A. Wills (Eds.), *Social comparison: Contemporary theory and research* ( 23-49). Hillsdale, NJ: Erlbaum.