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Individual Differences in Social Comparison: Development of a Scale of Social Comparison Orientation

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Development and validation of a measure of individual differences in social comparison orientation (the Iowa-Netherlands Comparison Orientation Measure [INCOM]) are described. Assuming that the tendency toward social comparison is universal, the scale was constructed so as to be appropriate to and comparable in 2 cultures: American and Dutch. It was then administered to several thousand people in each country. Analyses of these data are presented indicating that the scale has good psychometric properties. In addition, a laboratory study and several field studies are described that demonstrated the INCOM's ability to predict comparison behavior effectively. Possible uses of the scale in basic and applied settings are discussed.

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Few statements in social psychology have generated as much research interest as Hypothesis 1 of Festinger's (1954) social comparison theory: "There exists, in the human organism, a drive to evaluate his opinions and abilities" (p. 117). Although some might quibble with his use of the term *drive,* most psychologists would probably agree that the desire to learn about the self through comparison with others is universal. Interestingly, that does not appear to be the perception held by many people outside the discipline, at least not as it applies to themselves (Schoeneman, 1981). A number of social comparison researchers have noted a basic inconsistency in people's claims about their own social comparison habits that reflects a reticence to admit—or perhaps a lack of awareness of—the comparisons in which they have apparently engaged (Brickman & Bulman, 1977; Helgeson & Taylor, 1993; Hemphill & Lehman, 1991; cf. Wood, 1996). Many cancer patients in the classic work by Wood and Taylor, for example (Taylor, Wood, & Lichtman, 1983; Wood, Taylor, & Lichtman, 1985), initially denied engaging in social comparison with other cancer patients. Later in the same interview, however, these patients made statements that reflected some kind of self–other comparison (e.g., mentioning their coping abilities or strategies vis-à-vis others'; cf. Schulz & Decker, 1985).

As is the case with other social psychological phenomena, it is certainly possible that the extent to which individuals engage in social comparison is overestimated by social psychologists (in fact, such an overestimation is a social psychological phenomenon itself, a type of false consensus). Nonetheless, the evidence appears to suggest that virtually everyone engages in social comparison from time to time. Indeed, the process and the information it generates are thought to have basic evolutionary benefits. As P. Gilbert, Price, and Allan (1995) noted, the need to compare oneself with others is phylogenetically very old, biologically very powerful, and recognizable in many species. However, we believe that the extent to which people do so varies, perhaps considerably, from one individual to the next. That belief led to the efforts described in this article to develop a scale assessing individual differences in comparison orientation (CO). Before describing the scale, we present a brief overview of its theoretical background.

Comparison Motives

The primary goal of social comparison is to acquire information about the self. Recent theoretical discussions of the comparison process, however, have identified three specific underlying motives for comparison that have been generally accepted by social comparison researchers (e.g., Taylor, Wayment, & Carillo, 1995; Wood, 1989): self-evaluation, self-improvement, and self-enhancement.

Evaluation

Of the three motives, only self-evaluation is clearly derived from the original theory. Festinger focused his discussion of this self-evaluation motive on two dimensions, opinions and abilities. Subsequent researchers have expanded the definitions of these dimensions, however, suggesting that any aspect of the self—accomplishments, traits, possessions, or feelings—or, presumably, aspects of significant others (e.g., one's children) can be the basis of comparison. Festinger's distinction between the two types of dimensions remains important because the nature of the comparison processes for the two differs. With respect to abilities, the primary question to be asked is "How am I doing?" For opinions, the issue is more "What should I think or feel?" Both types of comparison were included in the scale developed here.

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Improvement

Festinger did not discuss improvement as a distinct motive for comparison (separate from self-evaluation). Nonetheless, the idea that people will use social information to facilitate self-improvement is definitely consistent with his notion of a "unidirectional drive upward" (Hypothesis 4), which he suggested may be culture specific and applies only to abilities. Thus, one reason people compare themselves with others is to learn more about their abilities and, in so doing, improve (cf. Brickman & Bulman, 1977; Taylor & Lobel, 1989). In constructing the scale, we viewed the improvement motive as generally being subsumed by the more basic evaluation motive (i.e., improvement is achieved through evaluation), and so we did not create separate items for improvement.

Enhancement

There was also no explicit discussion in Festinger's (1954) article of self-enhancement, typically defined as comparison intended specifically to enhance self-esteem or self-concept. One reason for this may be that self-enhancement is not seen as a consistent motive underlying social comparison; instead, it varies as a function of the context or environment in which the comparison occurs (e.g., Is the situation threatening?). Ironically, although not part of the original theory (its addition was attributable largely to the Suls & Miller, 1977, volume, especially Brickman and Bulman's chapter, and to Wills's, 1981, provocative article on downward comparison), this new motive has prompted much of the resurgence of interest in the theory over the last 15 years. This research has suggested that the desire or need for self-enhancement can affect the amount and direction of comparison (i.e., upward comparison vs. downward comparison) as well as its impact (Wills, 1991). Because of its situation-specific nature, however (cf. Gibbons, Blanton, Gerrard, Buunk, & Eggleston, in press), this motive is not addressed in the current discussion.[1]

What Prompts Social Comparison?

As D. T. Gilbert, Giesler, and Morris (1995) suggested recently, the process of social comparison is "spontaneous, effortless, and unintentional" and "relatively automatic" (p. 227; cf. Bandura & Jourdan, 1991; Wood, 1989). Nonetheless, it is also the case that circumstances and situations vary in the extent to which they promote a need for comparison-based information. Generally speaking, interest in social comparison is associated with uncertainty (Festinger, 1954; Taylor, Buunk, & Aspinwall, 1990; Wills & Suls, 1991). Thus, periods of stress, novelty, or change should temporarily increase the amount of comparison (Aspinwall, 1997; Buunk, 1994; Molleman, Pruyn, & Van Knippenberg, 1986; Schachter, 1959). Of course, there is also some risk that comparison with others under threatening circumstances can produce information that is unflattering to the self (i.e., the "pain" of social comparison mentioned by Brickman & Bulman, 1977), which is one reason why comparison activity is sometimes curtailed, eventually, by those not faring well (Buunk, Schaufeli, & Ybema, 1994; Gibbons, Benbow, & Gerrard, 1994). Similarly, situations that foster competition are likely to promote interest in social comparison for most people, whereas performance-based situations will promote it for some (Ruble & Frey, 1991).

Individual Differences

A Social Comparison Prototype?

A number of researchers have suggested that certain types of individuals may be more inclined to engage in social comparison than others (e.g., D. T. Gilbert et al., 1995; Hemphill & Lehman, 1991; Steil & Hay, 1997; Taylor, Buunk, Collins, & Reed, 1992). Perusing the social comparison literature in an effort to construct a distinct image of this "typical" comparer proved ineffective for us, however. What this review suggested is that essentially the same factors thought to be situational inducements to social comparison are also assumed to be related dispositionally; most of these factors involve uncertainty about the self. Thus, individuals with low self-esteem, whose self-concepts are particularly unstable or uncertain (Campbell, 1990; Swallow & Kuiper, 1988), are thought to be especially interested in social comparison (Wayment & Taylor, 1995; Wood & Lockwood, in press). Similarly, depressed persons have been shown to be more sensitive to and more interested in comparison with others (Ahrens & Alloy, 1997; Swallow & Kuiper, 1990), again, apparently because of uncertainty about themselves (Weary, Marsh, & McCormick, 1994). The same is true for people who are high in uncertainty about their own mood states (Marsh & Webb, 1996) and, more generally, for those who are high in neuroticism (Fujita, 1995; Lennox & Wolfe, 1984; Van der Zee, Buunk, & Sanderman, 1998), a trait that also has a significant uncertainty component (Costa & McCrae, 1992). In addition to low self-esteem, depression, and neuroticism, other studies have linked personality styles, such as stress reactions (Hemphill & Lehman, 1991) and coping strategy (Affleck & Tennen, 1991), with increased interest in comparison. None of these studies assessed individual differences in comparison, however.

A Preliminary Measure

One recent study did use a measure of CO as a predictor of behavior. Gibbons and Gerrard (1995) assessed elements of the prototype–willingness model of adolescent risk behavior (Gibbons & Gerrard, 1997), which concerns the impact of risk images on health risk behavior. The model suggests that adolescents who maintain more favorable risk images or prototypes (e.g., the "typical teenage drinker") are more likely to engage in the associated risk behavior. Moreover, the process of image influence is said to involve social comparison (i.e., self with the image). Theoretically, then, risk images should have more impact on those who are high in CO. In Gibbons and Gerrard (1995), social comparison tendencies were assessed using a three-item scale developed for that study (e.g., "How often do you compare yourself with other people in terms of social behavior?"). As expected, the social comparison scale did interact with prototype favorability in predicting change in risk behavior: Those with more favorable prototypes and higher social comparison scores were more likely to report increases in

[1] A related but separate scale has been constructed that is intended to assess the self-enhancement motive, specifically by measuring upward and downward comparison tendencies. Discussion of that scale is beyond the scope of this article, however, and so it is described in a separate article (Gibbons & Buunk, 1998).

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their risk behavior (e.g., reckless driving) over time.[2] Thus, these results provided some evidence of the existence of a social comparison disposition. They also suggest a need for the development of a valid scale to measure this individual difference.

A Social Comparison Scale?

The lack of a validated measure of CO is surprising given the significance of social comparison in social psychology from both a theoretical and an applied perspective. This belief was expressed by a number of psychologists in a recent volume on social comparison and health (Buunk & Gibbons, 1997). These researchers suggested that additional work on individual differences in CO is needed (e.g., Wills, 1997), especially as those differences interact with situational inducements such as the experience of illness (Suls, Martin, & Leventhal, 1997) and disease (Leventhal, Hudson, & Robitaille, 1997). As Diener and Fujita (1997) suggested, "Making positive or negative comparisons, or making any comparisons at all, may often be a function of one's personality" (p. 349; cf. Wheeler & Miyake, 1992). In short, the need for a measure of CO tendencies seemed apparent.

Scale Development and Reliability

Do People Admit Comparison?

The first, preliminary step was to try to determine whether respondents would acknowledge engaging in social comparison. As a means of addressing this question, two samples, one with 500 adolescents (*M* age: 14 years) and one with 692 college freshmen (*M* age: 18 years), were presented with a brief definition of academic social comparison ("When students get test scores back or receive grades on a project or paper, they often like to find out how other people did on that test or project [we call that social comparison] . . .") and then were asked to indicate how often they engaged in such comparison. Responses (slashes) were placed on a 133-mm scale with anchors of *never* and *a lot*. The mean values were well above the midpoint for both samples (*M*s = 91.2 and 96.7, *SD*s = 28.3 and 29.1). More important, virtually all of these young people indicated that they engaged in academic comparison at least some of the time. Within each sample, 80% responded above the midpoint of the scale. Thus, these young people did not appear to be reluctant to acknowledge or admit their comparison tendencies.

Item Generation

To create a social comparison scale, we followed a standard sequence (cf. Comrey, 1988; DeVellis, 1991). First, a group of social comparison researchers was asked to generate a list of items that reflected the two bases of comparison discussed previously, abilities and opinions. These items were written in English, then translated into and back-translated from Dutch by two of the researchers who were fluent in both languages. Thus, the items were constructed in such a manner that their connotations and denotations would be as comparable for members of both cultures as possible. This initial effort produced 34 items, including 7 upward comparison and 7 downward comparison items (Gibbons & Buunk, 1998; see Footnote 1). There were also 19 general items, which were intended to assess individual differences in the comparison of abilities and opinions. The 19 items were then administered to two samples in the United States and two samples in the Netherlands. Corrected item–total correlations along with subjective judgments were used to cull out 8 more items, leaving a final version of 11. These 11 items constitute the Iowa-Netherlands Comparison Orientation Measure (INCOM). The scale was eventually administered to 10 different samples in the United States (total $N > 4{,}300$), with about one third of the total completing it twice. At the same time, it was administered to 12 samples in the Netherlands ($N > 3{,}200$), 1 of which completed it twice. The validation analyses discussed subsequently were based on these 22 samples.

Descriptive Statistics

Means, standard deviations, and sample sizes are presented in Table 1 for both countries. The distribution of scores was normal. The mean item response was close to the midpoint of the scale (3.10 in the Netherlands and 3.60 in the United States), and the item standard deviations were fairly small (*M*s = 0.68 and 0.58, respectively). Among 2,500 American college students (combined sample, described later), kurtosis was .43 and skewness was −.42.

Factor Structure

Exploratory analyses. Exploratory principal-components analyses were conducted on the 11-item scale in samples from both countries.[3] The initial American sample consisted of 403 older adolescents (*M* age = 17 years). Two factors were extracted in this analysis, one with an eigenvalue of 4.17 and the other with an eigenvalue of 1.08; these factors explained 38% and 10% of the variance, respectively. A varimax rotation was then performed. The first factor, comprising 6 items (5 of which concerned performance; see Appendix), was labeled "ability." The second factor, labeled "opinions," included the remaining 5 items. As can be seen in the Appendix, none of this latter group included the word *compare* or *comparison*; 4 of the items concerned others' thoughts or opinions. This analysis was replicated with a later U.S. sample consisting of 847 college students that produced virtually identical results (eigenvalues: 3.77 and 1.21; explained variance: 34% and 11%). The same was true of the first Dutch college sample (N = 170; eigenvalues: 4.07 and 1.50; variance: 37% and 14%). The only exception in this latter case was that the 11th item loaded on the first factor. Additional analyses with the other samples (including the combined college sample described subsequently) produced the same basic two-factor structure.

[2] Four risk behaviors were assessed in this study. The Prototype × Social Comparison interaction was significant for one of them (reckless driving), and the Prototype × Social Comparison × Gender interactions were significant for two others (smoking and drinking), the predicted pattern being stronger for the male participants. Finally, for the fourth risk behavior (ineffective contraception), both the two-way and the three-way interactions were significant, the pattern again being stronger for the male participants.

[3] Analyses conducted on the entire set of 34 items revealed the same two factors with essentially the same composition, along with additional factors comprising the upward and downward comparison items (see Gibbons & Buunk, 1998).

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Table 1
Sample and Scale Descriptives: Iowa-Netherlands Comparison Orientation Measure

Sample	*N*	*M*	*SD*	α
The Netherlands				
1. Students	172	39.17	6.49	.80
2. Students	142	38.59	6.57	.82
3. Students	152	37.09	7.26	.82
4. Students	140	37.01	7.59	.84
5. Students	80	37.80	6.54	.80
6. Therapists	102	33.55	6.53	.81
7. Adults[a]	1,614	32.70	7.84	.83
8. Adults	329	32.80	6.70	.77
9. Adults[a]	244	31.68	7.26	.81
10. Adults	73	33.44	8.46	.84
11. Adults (some depressed)[b]	122	35.87	9.18	.84
12. Cancer patients	104	30.78	9.05	.85
United States				
1. Students (high school)	403	40.19	6.88	.83
2. Students	407	41.27	5.75	.78
3. Students	646	40.95	6.37	.81
4. Adolescents	220	40.05	6.38	.78
5. Students	446	40.43	6.27	.80
6. Students	847	39.08	6.57	.80
7. Students	816	39.26	6.41	.79
8. Students	172	39.80	6.70	.82
9. Adults (female)	222	36.96	6.70	.85
10. Adults (male)	185	35.33	6.35	.82

Note. All students in samples were college students, except for the first U.S. sample.
[a] Scales administered via interactive television (i.e., Telepanel; see Buunk & Van den Eijnden, 1997, for further description). [b] Included a substantial minority of depressed participants.

Confirmatory analyses. Although the analyses revealed two factors, there was also evidence that a single factor structure was viable: Before rotation, the subscales associated with the two factors (i.e., means of the six items and the five items) correlated .61, and all items loaded highly (>.46) on the primary factor. Consequently, an additional, confirmatory factor analysis (using LISREL 8; Jöreskog & Sörbom, 1993) was performed; this analysis tested a single-factor and then a dual-factor solution. A combined sample of Dutch and American college students (maximum age: 23 years) was created (N = 3,115), and then the analysis was conducted on the two groups together. Results indicated that the two-factor solution fit the data very well (goodness-of-fit index [GFI] and adjusted goodness-of-fit index [AGFI] both >.95). It also fit the data better than the one-factor solution, as indicated by a significant change in chi-square value, which dropped from 791.6 in the single-factor solution to 520.2 in the two-factor solution (with one degree of freedom, this drop was significant at $p < .001$). Once again, however, there was evidence of the viability of the single factor. Specifically, the correlation between the ability and opinion factors in the two-factor solution was very high (.79), the single-factor solution also fit the data well (GFI and AGFI both >.92), and all items loaded highly (>.31) on the single factor. In short, the confirmatory factor analysis indicated that the INCOM comprises two distinguishable factors that are very highly related.

Reliability

Internal consistency. Cronbach's alpha in the original sample was .83. All 11 items produced corrected item–total correlations greater than .36; elimination of any one of them reduced the alpha. The alpha was very consistent across the other samples (see Table 1), ranging from .78 to .85 in 10 American samples and from .78 to .84 in 12 Dutch samples, levels that are considered good (Nunnaly, 1978).

Temporal stability. Temporal stability was assessed on six different occasions in the American samples and once in the Dutch samples. These analyses produced correlations ranging from .71 (for 3–4 weeks) up to .60 (for 1 year) in the United States and a correlation of .72 (for 7.5 months) in the Netherlands. This level of stability is reasonable but not as high as that for some measures, which is to be expected given that the construct is sensitive to situational factors (described later) and therefore would be expected to change somewhat over time (see Kelly & McGrath, 1988).

Scale Validation

Construct Validity

A version of the known-groups validation technique was used in assessing construct validity. On the basis of previous research, we expected a difference between the two countries in terms of absolute level of CO. For example, in a recent study of American and Danish youths from rural areas (M age = 14 years), Gibbons, Helweg-Larsen, and Gerrard (1995) found that the American adolescents reported engaging in more social comparison than did the Danish adolescents ($p < .001$), as indicated by a two-item version of the three-item ad hoc scale used by Gibbons and Gerrard (1995). It was suggested that this finding was consistent with Hofstede's (1980) observation that the United States is more achievement oriented than are Northern European countries such as Denmark and the Netherlands.

To examine this hypothesis, we compared the American and Dutch samples within the age group that was the largest and most comparable: college students. A 2 × 2 (Country × Gender) analysis of variance (ANOVA) was conducted on the combined college-aged samples (mentioned earlier). As anticipated, the mean level of CO (see Table 2) was higher in the American than in the Dutch samples, $F(1, 3055) = 39.44$, $p < .001$. In addition, women reported a level of CO that was modestly but significantly

Table 2
Mean Iowa-Netherlands Comparison Orientation Measure Scores by Country and Sex: College Students

Country	Men	Women	Combined
The Netherlands			
M	36.78	38.67	38.05
SD	6.69	6.88	6.79
n	196	403	599
United States			
M	39.16	40.15	39.75
SD	6.42	6.37	6.39
n	1,063	1,397	2,460

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higher than that of the men (M = 39.84 vs. 38.80), $F(1, 3055)$ = 21.60, $p < .001$.

Trait Measures

Social orientation. Although there are currently no CO scales available, several scales exist that assess a related construct best labeled as social or other orientation (i.e., the extent to which individuals pay attention to and base their own behavior on the way others behave). Each of these scales was administered along with the INCOM to at least one sample, with the assumption that the correlations would be significant. As expected (see Table 3), moderately strong relations were found with interpersonal orientation (Swap & Rubin, 1983; r = .45) and public self-consciousness (Fenigstein, Scheier, & Buss, 1975; rs = .38 to .49). (The weighted average of these correlations, using r-to-z transformation, was .43.) The strongest correlations were with Lennox and Wolfe's (1984) Attention to Social Comparison Information (ATSCI) Scale (rs = .47 and .66). There were also somewhat weaker correlations with Clark, Ouellette, Powell, and Milberg's (1987) Communal Orientation Scale (r = .31) and Snyder's (1974) Self-Monitoring Scale (r = −.23).

Negative affectivity. In addition, the dispositional factors that have been suggested as correlates of CO, most of them related to negative affectivity, were modestly but in most cases significantly correlated with the INCOM. For depression, the correlations ranged from .13 for the Beck Depression Inventory (Beck, 1967) to .25 (M = .19) for the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). The correlation for social anxiety (Fenigstein et al., 1975) was .31, and the correlation for state–trait anxiety (Spielberger, Gorsuch, & Lushene, 1970) was .22.[4] Self-esteem was correlated (negatively) with the INCOM in 8 of the 10 American samples (weighted average = −.18) and in all 5 of the Dutch samples (weighted average = −.32) in which it was included. Finally, the INCOM was negatively related to optimism (Scheier & Carver, 1985) in two Dutch samples (−.22 and [see Footnote 4] −.36) but only weakly related in the American samples (weighted average = −.09).

Neuroticism. Although the relations between CO and both depression and low self-esteem were consistent with expectations and previous hypotheses, proponents of the Big Five personality structure (Costa & McCrae, 1985) have claimed that these two constructs are actually subsumed by a higher order factor: Neuroticism. In fact, Neuroticism, assessed using the NEO Personality Inventory and its Dutch version, the Five-Factor Personality Inventory (Hendriks, 1997), as well as the Netherlands Personality Questionnaire (Luteyn, Stearren, & VanDijk, 1985), correlated fairly highly with the INCOM (rs ranged from .28 to .37 [see Footnote 4]; weighted average = .31). To assess the relative relations between the three negative affectivity factors (Neuroticism, depression, and low self-esteem) and CO, we conducted commonality analyses (Pedhazur, 1982) on a subset of one of the American student samples that received all of these measures (n = 366). These analyses indicated the amount of variance in the INCOM explained by each factor by itself and in conjunction with each of the other factors. Results (see Table 4) indicated that although all three factors were correlated with CO, only Neuroticism had a significant unique relation, explaining 4.5% of the variance by itself. It would appear, then, that the oft-found (or presumed) relations between social comparison and both depression and self-esteem may be subsumed by their respective relations with neuroticism.

State Measures

We also assessed several state measures that we assumed would relate to an increased tendency in the need to know about the self. Significant but modest relations (see Table 3) were found with perceived stress (Cohen, Kamarck, & Mermelstein, 1983) and with negative affect (Watson, Clark, & Tellegen, 1988). There was only one instance (out of seven) in which the correlation with positive affect was significant. Finally, one of the Dutch samples, consisting of cancer patients awaiting or undergoing radiotherapy (Van der Zee, Buunk, & Sanderman, 1998; see Footnote 4), completed measures of health status and disease–treatment stress (de Haes, Van Knippenberg, & Neijt, 1990), both of which were related to the INCOM, as expected.

Discriminant Validity

The INCOM was also administered in the various samples with a number of other scales that, theoretically, should not correlate with CO (e.g., social support and need for cognition). As can be seen in Table 3, a few of these correlations were significant, but, generally speaking, there was little evidence of relations. One set of correlations worth noting involves life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985), which was typically not related to CO. Thus, those who indicated that they compared frequently with others were no more or less satisfied with their life situations than were those who did not compare often (cf. Diener & Fujita, 1997).

Comparison of Correlations for the Two Factors

To determine whether the two factors (ability and opinion) related differentially to the other scales, we calculated correlations separately between the two factors and all of the other scales in each country (more than 200 correlations). A review of these pairs of correlations indicated that the two subscales correlated very similarly with all of the scales with one exception: The ability subscale correlations were consistently about .20 or .25 higher (absolute value) than the opinion subscale correlations for the various negative affectivity scales (i.e., self-esteem, depression, and neuroticism). This was true in both countries. In other words, individuals who were low in self-esteem, high in depression, or high in neuroticism were more likely to engage in ability-based comparison but no more or less likely to engage in opinion-based comparison than those who were at the opposite levels of these dimensions. One possible explanation for this is that individuals who are high in neuroticism, who tend to have unstable self-concepts, are primarily interested in self-relevant information that is at least potentially verifiable. Comparison on abilities is more likely than comparison on opinions to provide that type of infor-

[4] The latter correlation involved the Dutch cancer patient sample (Van der Zee, Buunk, & Sanderman, 1998). The particular situation of this sample, consisting of cancer patients awaiting or undergoing radiotherapy, was unique relative to that of participants in the other samples.

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Table 3
Correlations of the Iowa-Netherlands Comparison Orientation Measure With Other Scales: Dutch and American Samples

Scale	Correlation(s)	Weighted average	Sample[a]
	Dutch samples		
Self-esteem (Rosenberg)	−.16* to −.51***	−.32	2, 3, 5, 8, 12
Social desirability (Marlowe–Crowne)	−.14		2
Neuroticism (Luteyn et al., 1985)	.37***		10
Big Five (Hendriks, 1997)			
Neuroticism	.32***, 37***	.34	2, 12
Extraversion	−.07, .09	.01	2, 12
Agreeableness	.14, −.24*	.09	2, 12
Conscientiousness	.17, −.25*	−.02	2, 12
Openness	−.34***, −.19*	−.28	2, 12
Depression (Beck Depression Inventory)	.13		11
Depression (CES-D)	.24***, .25*	.24	8, 12
Positive affect (PANAS)	.07, .15	.10	1, 10
Negative affect (PANAS)	.14*, .39***	.23	1, 10
Anxiety (State-Trait Anxiety Inventory)	.22*		12
Internal–external control (Rotter, 1966)	.13		6
Mastery (Pearlin & Schooler, 1978)	−.33***		12
Public self-consciousness (SCS)	.42***		4
Private self-consciousness (SCS)	.39***		4
ATSCI	.66***		2
Exchange orientation (Clark et al., 1987)	.28***		2
Communal orientation	.31**		2
Well-being (Diener et al., 1985)	−.19		4
Optimism (LOT)	−.22*, −.36***	−.28	2, 12
Need to evaluate (Jarvis & Petty, 1996)	−.15		1
Coping (active; Carver et al., 1989)	.09, .15	.12	10, 12
Health (ad hoc scales)	−.22*		12
Health uncertainty (de Haes et al., 1990)	.42***		12
Age (adults)	−.20***		7
Education (adults)	.00		7
	American samples		
Self-esteem (Rosenberg)	−.09 to −.23***	−.18	1–9
Social desirability (Marlowe–Crowne)	−.13**		6
Social desirability (Eysenck Lie)	.08*		5
Neuroticism (Eysenck)	.33***		5
Big Five (Costa & McCrae, 1992)			
Neuroticism	.28***		7
Extraversion	.02		7
Agreeableness	.08		7
Conscientiousness	.07		7
Openness	.07		7
Depression (Derogatis, 1983)	.22***		2
Depression (CES-D)	.14**		7
Positive affect (PANAS)	−.21* to −.01	−.07	1, 2, 4, 9, 10
Negative affect (PANAS)	.15* to .29***	.21	1, 2, 4, 9, 10
Social anxiety (SCS)	.31***		6
Public self-consciousness (SCS)	.38*** to .49***	.43	1, 2, 4, 6
Private self-consciousness (SCS)	.22* to .43***	.32	1, 2, 4, 6
ATSCI	.47***		7
Interpersonal orientation (Swap & Rubin, 1983)	.45***		3
Self-monitoring (Snyder, 1974)	−.23***		6
Well-being (Diener et al., 1985)	−.13* to .03	−.07	1, 2, 4
Optimism (LOT)	−.07 to −.12*	−.09	1, 2, 6, 7
Need for cognition (Cacioppo & Petty, 1982)	−.08* to −.15**	−.12	3, 5, 6
Perceived stress (Cohen et al., 1983)	.20**, .25**	.23	9, 10
Social support (Cutrona & Russell, 1987)	.13*		1
Impulsivity (Wills et al., 1994)	.04		1
Erotophobia (White et al., 1977)	.02, −.02		3, 5
Negative life events (Sarason, Sarason, Potter, & Antoni, 1985)	.04 to .09		1, 2, 9, 10
Health (ad hoc scales)	.05 to .10	.06	1, 2, 9, 10
Religion (ad hoc scales)	−.03 to .06	.03	1, 2, 9, 10
Education (adults)	−.09, .10	.00	9, 10
Age (adults)	.00, .17	.09	9, 10
Financial status (ad hoc scales)	−.07		10

Note. CES-D = Center for Epidemiologic Studies Depression Scale; PANAS = Positive and Negative Affect Scales; SCS = Self-Consciousness Scale; ATSCI = Attention to Social Comparison Information Scale; LOT = Life Orientation Test.
[a] See Table 1 for sample numbers and descriptions.
* $p < .05$. ** $p < .01$. *** $p < .001$.

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Table 4
Commonality Analysis for the Iowa-Netherlands Comparison Orientation Measure With Neuroticism, Self-Esteem, and Depression

Factor	Variance Explained (%)
Depression (unique)	0.0
Self-esteem (unique)	0.0
Neuroticism (unique)	4.5
Depression and self-esteem (shared)	0.0
Depression and Neuroticism (shared)	0.8
Self-esteem and Neuroticism (shared)	1.9
All (shared)	1.0
Total	8.3

Note. The analysis involved American Sample 7 (see Table 1; among all participants who completed the four scales).

mation. Although this pattern is of interest, we did not anticipate it, and we consider it to be beyond the scope of this article. Future studies might further examine this difference, however.

Social Desirability

As noted earlier, previous researchers have suggested the existence of normative sanctions against acknowledging or admitting social comparison (Hemphill & Lehman, 1991; Wood, 1996). Thus, there was some reason to expect a negative relation between the INCOM and measures of social desirability. In fact, these correlations were also small. The correlation with the Marlowe–Crowne scale (Crowne & Marlowe, 1960) was nonsignificant in the Netherlands (−.14) and weak in the United States. ($rs = -.12$, $p < .05$). The correlation with the Eysenck Lie scale (Eysenck & Eysenck, 1975) was .08. Thus, concerns that responses on the INCOM might be strongly influenced by social desirability motives appeared unfounded.

Criterion-Related Validity

Four studies have been conducted that have assessed the criterion-related validity of the INCOM. The first was conducted specifically for that purpose and is described in full detail here. The other three are described in more detail elsewhere and so are discussed only briefly.

Study 1: Social Comparison After Test Performance

The first study was an experimental laboratory investigation of social comparison behavior after test performance. A variation of a procedure seen in several previous laboratory studies (e.g., Pyszczynski, Greenberg, & LaPrelle, 1985) was used in which participants received bogus feedback on a test they had taken and then were given an opportunity to see the test scores of previous test takers. The prediction was that those with high INCOM scores would be more interested in seeing how others performed than would those with low scores.

Method: Participants and procedure. Participants were students enrolled in lower level psychology courses at Iowa State University who took part in mass pretesting sessions at the beginning of the semester in which the INCOM was included. Fifty students, 25 each from the top and bottom thirds of the INCOM distribution (scores of less than 36 or greater than 43), were called and asked to come to the laboratory. From this group, 2 individuals were eliminated because they had trouble with the computer, and 10 others were eliminated as a result of suspicion of the feedback.[5] This left a total of 19 low CO students (10 men, M INCOM score = 32.2, and 9 women, M score = 32.3) and an equal number of high CO students (9 men, M score = 46.8, and 10 women, M score = 47.5).

The cover story suggested that the study was intended to assess the relation between two constructs. Each construct was to be measured separately, the first by a test called the Wilder Proximal Parts Test and the second by computer. The Wilder was a bogus scale created for the study that contained five sections (e.g., vocabulary and "emotional maturity") with a total of 35 items.

Participants took part in groups of 4. After having the 4 people introduce themselves, the experimenter escorted them to separate cubicles where they received instructions for the rest of the study through an intercom. They were given 13 min to work on the Wilder and then waited for 3 min while the test was supposedly scored. Each participant received a score of 37 and was told individually that she or he had done "pretty well," somewhat above average. Participants were then told that they would pair up for the second part of the study, which would occur in sequence, with one person working on the computer first while the other waited, after which the two roles would switch. The third part supposedly involved the two of them having a discussion together about several relevant topics. Each participant was then informed that his or her partner had been selected to do the next part first. This left about 8 min during which the first two of the three social comparison measures were collected.

These first two social comparison measures were assessed on the computer using the Micro Experimental Laboratory (MEL) program (Schneider, 1988). Participants were told that while they waited for their partner to finish, they could, if they wanted, look at information on the computer about how others had done on the Wilder test. There were 14 screens full of such (bogus) information. The first 7 contained information on mean scores for different groups of participants (e.g., all college students or male students from Iowa State). The second group of 7 screens contained the participant's score as well as information on the individual scores of the last 10 groups of participants, listed by identification number. After demonstrating use of the computer, the experimenter departed, leaving the participant alone. The MEL program then measured time spent viewing each of the screens.

The last screen reminded the participant that the third part of the study involved a discussion with his or her partner on several issues relevant to the two constructs and then indicated that participants would be able to choose the discussion topics. To do that, they were to open the folder in front of them and answer the questions contained therein. Each question pertained to a possible discussion topic, followed by a scale ranging from 1 (*not at all interested*) to 7 (*very interested*). The first item, which comprised the third dependent measure, was a face-valid indicator of social comparison interest; the topic was "performance on tests." The next three were filler items (e.g., politics).

Results and discussion. As a result of their open-ended nature, the exposure time data were skewed and, therefore, subjected to a natural log transformation. Then a 2 (sex) × 2 (high–low social comparison group) multivariate analysis of variance was conducted on the three primary dependent measures, which were the mean (transformed) exposure times for the two sets of normative information on the Wilder test and the response on the first discussion topic question (see Table 5). This analysis revealed a main effect of social comparison group, $F(3, 28) = 5.55$, $p < .004$,

[5] Most of the suspicious participants had been involved in a study with a similar (bogus feedback) deception in the same laboratory within a few days before their participation in this study.

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Table 5
Mean Exposure Time to Previous Performance Information and Interest in Discussing Test Performance With Partner as a Function of Gender and Comparison Orientation (CO) Level: Study 1

	CO level					
	Low			High		
Measure	Male	Female	Combined	Male	Female	Combined
Exposure time: Section 1[a]						
M	3.52	3.13	3.33	4.07	4.01	4.04
SD	0.63	0.91	0.78	0.33	0.76	0.58
n	10	9	19	9	10	19
Exposure time: Section 2[b]						
M	1.90	1.86	1.88	2.97	3.07	3.02
SD	1.13	1.12	1.13	0.56	1.03	0.82
n	10	9	19	9	10	19
Performance discussion[c]						
M	4.14	4.44	4.31	4.50	5.60	5.11
SD	0.69	1.42	1.14	0.76	1.08	1.08
n	7	9	16	8	10	18

[a] Mean exposure time (in seconds) to the first set of screens with information about previous groups' test performances. [b] Mean exposure to the second set of screens with information about previous individuals' test performances. [c] Interest in discussing test performance with partner (scale = 1–7).

in the anticipated direction. There was no main effect of sex, and there was no interaction ($ps > .13$). Univariate ANOVAs indicated that the high CO group mean was higher than the low CO group mean on each of the three measures, $Fs(1, 34) = 10.26$ and 12.44, $ps < .003$, and $F(1,30) = 4.90$, $p < .04$, respectively. Finally, the correlation with INCOM score was significant for the two exposure times, $rs(36) = .33$ and .48, $ps < .05$ (two-tailed), and marginal for the topic preference item ($r = .27$, $p = .12$). Thus, the desire to look at previous participants' test performance and the desire to discuss current performance with the partner were associated with scores on the INCOM, as expected.

Study 2: Social Comparison and Reactions to Downward Comparison

In this study, three experiments were conducted that examined the impact of encouraged downward comparison on couples' satisfaction with their relationships (Oldersma, Buunk, & De Dreu, 1997). Two of the experiments included the INCOM. In the first of the two, members of couples (*M* age = 41 years) in the control condition were asked to generate as many reasons as they could why their partner was a good (relationship) partner. Those in the experimental condition were encouraged to compare their partner with other partners. Specifically, they were told to generate reasons why their partner was better than most partners. Before doing this, they answered questions on relationship distress. Afterward, participants were asked to indicate how satisfied they were with their relationship. As expected, CO tendency and relationship stress together moderated the impact of social comparison on relationship satisfaction. That is, downward comparison had a more positive impact on those members who were (a) experiencing discontent with their relationship (i.e., were threatened; cf. Aspinwall & Taylor, 1993; Gibbons & Boney-McCoy, 1991) and (b) high in CO tendencies. These participants reported the greatest increase in relationship satisfaction after the comparison opportunity. The second experiment involved college students (*M* age = 22 years) and a very similar procedure, and it produced essentially the same results. Once again, CO interacted with comparison opportunity and relationship discontent in predicting alleviation of this discontent. Thus, relationship-distressed individuals who were high in CO reported the largest increase in relationship satisfaction after the comparison.

Study 3: Social Comparison and Responses to Vivid Comparison Information

In two studies, health care workers (i.e., sociotherapists treating criminal offenders, along with nurses) were confronted with a vivid description of either an upward comparison or a downward comparison target (Buunk et al., 1998). In the first study, conducted with nurses at an academic hospital, level of professional burnout (e.g., perceptions of personal accomplishment at work) was first assessed, and then participants were presented with a (bogus) description of a colleague followed by a mood assessment. The description, which was based on actual in-depth interviews with members of the target population, indicated that the colleague was performing either very well or poorly at her job. As predicted, CO, occupational burnout, and comparison direction together moderated the impact of comparison on mood. That is, burnout and CO did not have main effects on responses to upward comparison, nor was there an interaction effect (cf. Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Van der Zee, Buunk, & Sanderman, 1998). However, confrontation with a downward comparison target generated the most negative affect among those who were (a) high in professional burnout (i.e., had a low professional self-concept) and (b) high in CO.

The second study, among sociotherapists, produced essentially the same results. Again, CO had no main or interaction effects on

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responses to upward comparison, whereas affective responses to downward comparison varied as a function of CO. Specifically, among individuals who were higher in burnout, downward comparison generated more negative affect if they were also high in CO; burnout was more or less unrelated to negative affect among those low in CO.

Similar results were obtained in a recent study that also involved computer-based social comparison information (as in Study 1 of this article), this time among a sample of cancer patients (Van der Zee, Oldersma, Buunk, & Bos, 1998). The information was in the form of transcripts of interviews with other cancer patients in which they discussed how well they were coping with their illness. As expected, those patients with high INCOM scores chose to read more comparison information and showed more affective reaction to that information than did those with lower INCOM scores.

Study 4: Social Comparison as a Moderator of the Influence of Risk Images on Behavior

The fourth study (Gerrard, Gibbons, Reis-Bergan, Buunk, & Blanton, 1998) involved a conceptual replication and extension of a study mentioned earlier (Gibbons & Gerrard, 1995) in which a three-item social comparison scale was shown to moderate the impact of risk prototypes on changes in risk behaviors. This time the INCOM was used, along with a measure of alcohol prototypes, to predict changes in alcohol consumption among a sample of more than 400 adolescents (*M* age at Time 1 = 16 years). In both cases, prototypes interacted with CO as expected; specifically, risk prototypes predicted increases in risk behavior only for those participants who were high in CO.

Discussion

Using measures that previous studies have shown to be indicative of comparison activities, such as exposure to (performance) comparison information and changes in affect after comparison opportunities, these four studies provided evidence that individuals who were high in CO were engaging in more social comparison than were those who were lower on the scale. As a group, then, the studies attest to the criterion-related validity of the INCOM.

General Discussion

The structure of the INCOM was generally consistent with previous discussions of social comparison processes dating back to Festinger (1954). The first scale factor reflected an interest in performance or ability-related comparison, whereas the second factor reflected interest in comparison based more on opinions. Although the two factors were discriminable, we would caution researchers against using them independently in the future for two reasons. First, although the two-factor structure emerged across numerous samples, a single-factor structure also fit the data fairly well. Second, the two factors did correlate highly with one another, and so we believe they are measuring the same basic underlying process. In fact, we view the two types of comparison—abilities and opinions—as two sides of the same coin: seeking information from others to increase self-understanding. For these reasons, we would recommend that researchers use all 11 items whenever possible. If space is a problem, however, the first factor items will do a reasonable job as a proxy for the entire scale (the mean correlation of the 6 items with the total was .92 across the 22 samples, all $rs > .90$). This would be especially true in situations in which the basis of comparison is strictly or primarily abilities or performance.

Scale Characteristics and Relations With Other Measures

Other orientation. The scale correlated weakly or not at all with a variety of individual-differences measures that, theoretically, should have been distinct (e.g., impulsivity, religiosity, and life satisfaction). More informative is the evidence of convergent validity provided by the correlations with other theoretically relevant measures. First, there is an element of conformity and other orientation in social comparison, and that orientation is reflected in the INCOM's relations with scales such as the Public Self-Consciousness Scale and the ATSCI (which appears to be a measure of other orientation and conformity; see Bearden & Rose, 1990). At the same time, there is more to social comparison than simply other orientation; it is a perspective on others vis-à-vis the self. In fact, none of these other scales assess this primary social comparison motive of self-evaluation per se, which is probably why the correlations with them were moderate.

Negative affectivity. A second consistent relation was that between the INCOM and various measures of negative affectivity, both state and trait. The former relations suggest that the disposition itself is sensitive to acute situational factors (as Festinger, 1954, suggested), probably more so than a number of other more stable traits, such as extraversion. Further evidence of this is the INCOM's test–retest reliability, which, although acceptable, was modest. The desire to socially compare should increase during periods of heightened uncertainty, and there are many situational factors that could increase self-uncertainty. As a result, even though the trait may be fairly stable, it will reflect temporary contextual influences.

Neuroticism. The negative affectivity trait that had the strongest relation with the INCOM was Neuroticism (cf. P. Gilbert & Allan, 1994; Van der Zee, Buunk, & Sanderman, 1998; Van der Zee, Buunk, Sanderman, Botke, & Van der Bergh, in press). In fact, the commonality analysis indicated that the (positive) relations between social comparison and the other negative affectivity traits (low self-esteem, depression, and anxiety) were attributable to their relations with Neuroticism (others have suggested a similar hierarchical structure for these three traits relative to Neuroticism; e.g., Watson, Clark, & Harkness, 1994). Given that a primary component of Neuroticism is uncertainty about the self (Costa & McCrae, 1992), its relation with social comparison is theoretically consistent.

Social desirability. Generally speaking, we did not detect much of the reticence to acknowledge social comparison behavior that others have noted or inferred (Hemphill & Lehman, 1991; Taylor et al., 1983; Wood, 1996). First, the correlation between the INCOM and the social desirability scales was low. Second, most participants appeared quite willing to acknowledge their comparison tendencies. The mean response on the academic comparison frequency item ("How often do you compare your test scores with others?") was well above the midpoint. Moreover, the mean response on the 5-point scales for the 11 items was typically between 3.0 and 3.5, which, although not hearty endorsement, is not

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denial either (keeping in mind that the scale is worded somewhat in the extreme, with terms such as *never* and *always*). One reason for this may have to do with the preface to the scale, in which we attempted to sanction and normalize the behavior (as others have suggested; cf. Wood, 1996). The most notable exception to this tendency toward acknowledgment was in the Dutch cancer patient sample, which had the lowest mean. It may not be coincidental that most of the previous studies detecting social comparison reticence involved people with serious health problems as well (Helgeson & Taylor, 1993; Hemphill & Lehman, 1991; Schulz & Decker, 1985; Wood et al., 1985). Instead, it may be that social comparison among those with serious illness is thought to be inappropriate, is actually reduced, or both. This issue will most likely attract future empirical attention in studies using the INCOM.

Downward comparison. Interestingly, the mean item response on the downward comparison scale (Gibbons & Buunk, 1998) was quite a bit lower (typically at 2.7) than that on the INCOM, which is consistent with a belief that people are less willing to admit this particular kind of comparison (Hemphill & Lehman, 1991; Wills, 1981). Of course, it may also be the case that downward comparison is simply less common than social comparison in general (Gibbons et al., 1997) or upward comparison (the item mean on the upward comparison scale was 3.1). Once again, the INCOM and the two directional-comparison scales should facilitate future attempts to address these types of questions.

Cross-cultural differences. As suggested in a previous study (Gibbons et al., 1995), the U.S. sample was more comparison oriented than was a comparable Northern European sample. Other than this overall mean difference, however, there were relatively few distinctions between the two countries in terms of scale characteristics. This speaks to the universality of the trait, as suggested earlier, and to the utility of the measure. As one would hope with any scale, the INCOM should prove to be a good barometer of cultural and ethnic differences in social comparison behavior rather than just a consequence of such differences.

Summary. The prototypical image of a high comparer suggested by the various relations of the INCOM with other scales is of an individual (in either culture) who (a) is interpersonal more than introspectively oriented, being sensitive to the behavior of others, and (b) has a degree of uncertainty about the self, along with an interest in reducing this self-uncertainty and, in so doing, improving. Of course, typicality is not universality, and these related attributes are just that; together, they do not explain more than 25% of the variance in the INCOM. Thus, the scale does appear to be assessing a unique and distinct trait that is manifested in a number of predictable and observable behaviors.

Scale Uses

We see three primary research areas in which the scale can be used: basic, applied, and intervention.

Basic research. Social comparison is not an easy construct to measure in laboratory settings. The automaticity of the process (cf. D. T. Gilbert et al., 1995; Wood, 1996) makes control or manipulation of comparison in the laboratory difficult. Moreover, the reticence to admit social comparison, mentioned earlier, tends to undermine the credibility of self-reports of comparison activity or, actually, lack of activity (i.e., denial). As a result, many social comparison researchers have relied on indirect assessments, either by varying comparison opportunities (e.g., target availability or affiliation preferences) or by inferring comparison activity from other observable reactions, such as mood change or changes in self-assessments. A reliable CO scale provides another tool—albeit also indirect—for assessing social comparison processes. If individuals known to be high in social comparison tendencies report more reaction (e.g., mood change) in the presence of a comparison opportunity but not in its absence, then a researcher's confidence that comparison has, in fact, occurred would be significantly increased. Such was the case in the studies described in the Criterion-Related Validity section of this article. More generally, being able to discriminate among those who do and those who do not engage in a particular process should facilitate efforts to determine what it is they are doing (in other words, to understand the process itself).

Applied research. There are a myriad of applied empirical questions involving comparison processes as well. Many of them, although certainly not all, involve issues in health psychology (cf. Buunk & Gibbons, 1997). For example, social comparison is thought to be an integral part of the coping process for such stressors as pain, surgery, and illness (e.g., Kulik & Mahler, 1997), and it is thought to be involved in pain assessment and illness interpretation (Leventhal et al., 1997). The same is true regarding decisions involving medical care (Suls et al., 1997). Social comparison is also believed to be an important element in the etiology of depression (Ahrens & Alloy, 1997) and other emotional problems, such as professional burnout (Buunk & Ybema, 1997; Buunk et al., 1998). In each instance, the existence of a valid measure of social comparison tendencies should serve to further understanding of the various behaviors in question. In addition, to the extent that comparison processes influence academic performance and learning, as appears to be the case (Blanton, Buunk, Gibbons, & Kuyper, in press; Gibbons et al., in press), one would assume that educators and education researchers would find a measure of social comparison useful.

Interventions. Another type of applied usage involves the design of more effective interventions. Research on health-risk behaviors (Gibbons & Gerrard, 1997), for example, has shown that risk images or prototypes have a stronger impact on the associated health behaviors of young people who are high in social comparison tendencies (as was shown again with alcohol consumption in Gerrard et al., 1998, discussed earlier). Comparison with risk images is also related to adults' success in smoking cessation (Gibbons & Eggleston, 1996). In addition, these influential images have been shown to be malleable (cf. Eggleston, 1997), which means that the opportunity is there to change the related behaviors through image alteration. Knowing ahead of time which adolescents or adults are most likely to respond to such efforts should prove useful. Similarly, research by Klein and his colleagues (Klein, 1997; Klein & Weinstein, 1997) has shown that both perceptions of risk or danger and the subsequent willingness to take these risks are influenced by self–other comparisons (cf. Misovich, Fisher, & Fisher's, 1997, discussion of perceptions of AIDS risk, in particular). Efforts to alter these perceptions or to disabuse young people of potentially dangerous cognitive misperceptions that are socially based (e.g., optimistic bias; Perloff & Fetzer, 1986; Weinstein, 1980) should also be facilitated by the ability to ascertain ahead of time who compares extensively and who does not.

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Finally, for a number of health behaviors (e.g., recovery from cardiac surgery; Berkhuysen, 1994), as well as learning new coping skills, social comparisons may actually interfere in that individuals focus too much on how they are doing vis-à-vis others rather than on their own improvements. Identifying individuals with high comparison tendencies may be useful in developing specific interventions. In short, given the fact that CO is not a completely fixed characteristic, it might even be possible to develop interventions that reduce, in some situations, the tendency to compare oneself with others. Given the ubiquity of the construct being measured, we believe the utility of the scale that measures it should be significant as well.

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(*Appendix follows*)

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Appendix

Items and Factor Loadings for the Iowa-Netherlands Comparison Orientation Measure

Item	Factor 1	Factor 2
1. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing	.78	.01
2. I always pay a lot of attention to how I do things compared with how others do things	.67	.12
3. If I want to find out how well I have done something, I compare what I have done with how others have done	.61	.12
4. I often compare how I am doing socially (e.g., social skills, popularity) with other people	.60	.29
5. I am not the type of person who compares often with others (reversed)	.57	.45
6. I often compare myself with others with respect to what I have accomplished in life	.54	.30
7. I often like to talk with others about mutual opinions and experiences	.10	.76
8. I often try to find out what others think who face similar problems as I face	.30	.74
9. I always like to know what others in a similar situation would do	.34	.61
10. If I want to learn more about something, I try to find out what others think about it	.12	.57
11. I *never* consider my situation in life relative to that of other people (reversed)	.15	.51

Note. Loadings were based on a principal-components analysis with varimax rotation on the first American sample (N = 403 adolescents; M age = 17 years). Items were preceded by the statement "Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly 'good' or 'bad' about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like to ask you to indicate how much you agree with *each* statement below, by using the following scale." The accompanying 5-point scale ranged from *I disagree strongly* (1) to *I agree strongly* (5).

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