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# A SOCIAL COMPARISON SCALE: PSYCHOMETRIC PROPERTIES AND RELATIONSHIP TO PSYCHOPATHOLOGY

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**Summary**—This paper describes the development of a social comparison scale using the semantic differential approach. It also explores the relationship between this social comparison scale and psychopathology. The dimensions of social comparison measured here are derived from evolution theory and focus primarily on judgements of social rank, judgements of relative attractiveness and judgements of group fit. The factor structure of the scale appears consistent with theoretical predictions. Evidence suggests that social rank and attractiveness dimensions may be more salient for a clinical group, while group fit judgements become less important.

Festinger (1954) highlighted social comparison as a key variable in social relating and developed the first comprehensive theory of social comparison. Since then various modifications to his theory have been made (Wheeler, 1991). It is known to play an important role in the behaviours expressed between individuals and groups (Suls & Wills, 1991). Social comparison can be directed upwards or downwards, to self-enhance, self-improve or avoid shame (Suls & Wills, 1991; Wood, 1989). Baumeister, Tice and Hutton (1989) suggested that high self-esteem people socially compare to draw attention to their talents and abilities, while low self-esteem people opt for damage limitation, self-protection and minimizing exposure of their weak points, i.e. they are shame avoidant. Wood, Giordano-Beech, Taylor, Michela and Gaus (1994) found that high self-esteem people lose interest in social comparison when they succeed; that is they have little interest in comparing themselves with others who are inferior. However, low self-esteem people do seem to enjoy comparing themselves with inferior others when they succeed because it offers a "safe opportunity to revel in their success" (Wood *et al.*, 1994, p. 729).

There is also evidence that when people do more poorly than expected they change their social comparison strategies. They become more self-protective (shame avoidant), tend to demote the importance or relevance of dimensions/domains of their poor performances, and avoid upward comparisons (Gibbons, Benbow & Gerrad, 1994). There have been many therapeutic observations suggesting that a tendency to compare self unfavourably with others, to view self as inferior in some way, is associated with a variety of psychological difficulties including depression (Beck, Rush Shaw & Emery, 1979; Swallow & Kuiper, 1988), social anxiety (Beck, Emery & Greenberg, 1985; Gilbert & Trower, 1990), shame (Kaufman, 1989), stress and seeking social support (Buunk & Hoorens, 1992; Furnham & Brewin, 1988), envy and jealousy (Salovey, 1991), low-self-esteem (Coopersmith, 1967) assertive and submissive behaviour and neuroticism (Gilbert & Allan, 1994).

One approach to social comparison has been to consider its adaptive function in the formation of dominance hierarchies and group cohesiveness. Parker (1974, 1984) argued that it was adaptive for animals to evaluate, in advance of any agonistic encounter, the probability of winning. This avoids an animal continually challenging those who could easily defeat it but challenge those where there was a chance of winning. This leads to the basic evolved rule of 'challenge those weaker and submit to those stronger' (Hinde, 1987) and judgements of stronger and weaker depend on social comparison. In so far as favourable or unfavourable social comparisons can be linked to the preparedness to challenge and engage in confident displays, social comparison can act as a confidence and self-esteem modulator (Gilbert, 1992; Gilbert, Price & Allan, in press a; Price, Sloman, Gardner, Gilbert & Rhode, 1994).

Social comparison, serving the formation of social ranks, tends to use dimensions such as *inferior–superior, weaker–stronger*. However, in humans there appear to be two primary dimensions

of social rank derived from: (1) comparisons of relative strength, power and aggressiveness (i.e. the ability to win fights and conflicts and meet challenges); and (2) social attractiveness and talent [i.e. the ability to win contests where others are choosing in one's favour; being chosen for a team, a job, or as a friend or lover (Barkow, 1980; Kemper, 1990; Gilbert, 1992)].

In contrast to social comparison used to evaluate one's relative rank and social standing, humans also make comparisons of relative similarity to others (e.g. of age, gender. religious or political values, and experiences). Brewin and Furnham (1986) found that depressed individuals did not share or reveal certain types of their experiences to others for fear of scorn and being seen as different from others, of not fitting in. Indeed, clinical observation suggests that common social comparisons depressed people make are feeling an outsider, not like others and not fitting in. Here the dimension of comparison appears to be *same–different* rather than inferior–superior. The degree of 'fit' of a member to their group is important to rank and popularity (Abrams, Cochrane, Hogg & Turner, 1990; Wright, Giammarino & Parad, 1986). Thus, the importance of the evolved need for kinship, being like others, and sense of belonging (Bailey, 1988; Bailey, Wood & Nava, 1992) may be important in social comparison. Indeed, the motivation to belong, be like others, can have powerful effects on social behaviour and values (Argyle, 1991; Wolfe, Lennox & Cutler, 1986). Some of the stress of making unfavourable social comparisons may well arise from the potential loss of a sense of kinship and affiliation, associated with fear of rejection, marginalisation, becoming an outsider and loss of support. Birtchnell (1993) has suggested that in contrast to rank judgements are judgements of social distance and closeness. It is possible that closeness–distance evaluations may relate to judgements of 'fitting in,' with others and being like others.

### *Aims of study*

Using these observations and findings this study set out to achieve two aims. First to develop a simple social comparison scale that could tap social rank related comparisons (e.g. inferior–superior), social attractiveness comparisons, and comparisons of being accepted by others, an insider or outsider. The second aim was to explore the association of such a scale with measures of psychopathology.

## METHOD

### *Subjects*

Two groups of *S*s were used for this study. The first was 263 university undergraduates and postgraduates (99 men, 164 women). The mean age was 23.4 years (SD = 8.8). All *S*s were given the social comparison scale, and 180 of these *S*s (79 men, 101 women; mean age 22.4 years, SD = 5.5) also completed the SCL-90-R. The second group was a clinical group consisting of 32 patients (16 males and 16 females) who were attending a day hospital. Diagnoses of these *S*s was of non-psychotic depression and anxiety disorders. Mean age was 38.9 years (SD 10.78). These patients completed the social comparison scale and the SCL-90-R.

### *Measures*

*Social Comparison Scale.* It was decided to begin development of this scale using a sematic differential methodology (Osgood, Suci & Tannenbaum, 1957). This involves presenting *S*s with an incomplete sentence followed by a series of bipolar constructs. Although social comparison needs to be measured in the interpersonal domains relevant to the person (for example, being less able at football may be an irrelevant comparison for one person, but very salient for another in whom sporting ability was important to self-esteem) global evaluations for comparisons, such as inferior–superior and likable–unlikable appear generally salient for most people.

In an earlier version of this scale (Gilbert & Allan, 1994; Gilbert, Allan & Trent, in press b) five social comparisons on key, global dimensions, considered relevant to relative judgements of rank and status were constructed. *S*s were asked to complete the sentence "In relationship to others I generally feel..." by putting a mark on a ten point scale anchored with each of the following bipolar constructs: inferior–superior, less competent–more competent, likeable–less likeable, less reserved–more reserved, left out–accepted. This set of items was referred to collectively as social comparison (rank).

Table 1. Factor loadings for the social comparison scale (student group $N = 263$)

| Item | Factor 1 | Factor 2 |
|---|---|---|
| Inferior–superior | 0.77 | |
| Incompetent–competent | 0.84 | |
| Unlikeable–likeable | 0.55 | 0.51 |
| Left Out–accepted | | 0.71 |
| Different–same | | 0.81 |
| Untalented–more talented | 0.76 | |
| Weaker–stronger | 0.70 | |
| Unconfident–more confident | 0.75 | |
| Undesirable–more desirable | 0.59 | 0.58 |
| Unattractive–more attractive | 0.57 | 0.57 |
| Outsider–insider | | 0.81 |
| Eigenvalue | 5.91 | 1.28 |
| Variance (%) | 53.7 | 11.7 |

Only one bipolar construct of same–different was included. The Cronbach alpha for the aggregated five item (rank) scale was 0.87 and test–retest reliability at four months 0.84 (Gilbert *et al.*, in press b).

In the new expanded scale reported here, constructs were chosen in discussion with other clinicians about the salient dimensions used by patients. The primary concerns were to keep the scale relatively short but to try to tap judgements concerned with rank (inferior–superior), attractiveness, and how as a person judges themselves to fit in with or be like others (same–different, insider–outsider). It is likely that there are other salient dimensions that have not been included. However, the aim was to explore the value of using the semantic differential approach to social comparison. If this methodology was found to be useful other researchers could adapt the scale to include their own constructs.

*SCL-90-R.* The SCL-90-R is a much used, self-report clinical rating scale. It consists of 90 items answered on a five-point scale, ranging from 'not at all' to 'extremely' (0–4) in terms of how much the person was distressed by that problem during the past 7 days. The measure yields nine scale scores: Somatization, Obsessive–Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. Here, the total score is the Global Severity Index (GSI) which equals the total score for all items divided by number of items answered. As reviewed by Derogatis (1983), the GSI provides a good single measure of psychological disturbance.

## RESULTS

All analyses were carried out using the SPSS package. There were two phases to the analyses. First. an analysis of the factor structure and internal reliability of the scale in both a clinical group and an undergraduate group. At the beginning of this research, despite suggestions from theory, it was unclear whether the dimensions chosen to explore rank and those concerned with 'fitting in' with others and feeling accepted, would emerge as separate factors. Second, an exploration of the association between the social comparison scale and the SCL-90-R.

### *Factor structure of the social comparison scale*

For the student population the factor structure of the social comparison scale was explored as follows. All inter-item correlations were positive and significant at the 0.05 level except item 4 (less reserved–more reserved) which was dropped from subsequent analyses as it appeared to be more a measure of introversion. This suggests that different domains of social comparison are differentially associated. The distribution of scores for each of the remaining 11 items were inspected for skewness and found to be satisfactory. The Cronbach alpha for the 11 item scale was 0.91.

A principal components analysis with varimax rotation was carried out with a cut of 0.5 for the inclusion of a variable in the interpretation of a factor. This analysis produced a solution with two factors having eigenvalues greater than one. These two factors accounted for 65.4% of the variance in the factor space (see Table 1). All eleven items loaded above the cut off on one of the two factors.

The solution was interpreted as follows. Factor 1 consisted of items as suggested by evolution theory. These items seem particularly related to rank constructs. They were, inferior–superior, incompetent–

Table 2. Factor loadings for the social comparison scale (clinical group N = 32)

| Item | Factor 1 | Factor 2 | Factor 3 |
|---|---|---|---|
| Inferior–superior | | | 0.77 |
| Incompetent–competent | | | 0.81 |
| Unlikeable–likeable | | 0.79 | |
| Left out–accepted | 0.81 | | |
| Different–same | 0.95 | | |
| Untalented–more talented | | | 0.59 |
| Weaker–stronger | | | 0.69 |
| Unconfident–more confident | 0.77 | | |
| Undesirable–more desirable | | 0.79 | |
| Unattractive–more attractive | | 0.87 | |
| Outsider–insider | 0.70 | | |
| Eigenvalue | 5.70 | 1.49 | 1.07 |
| Variance (%) | 51.9 | 13.5 | 9.8 |

competent, untalented–more talented, weaker–stronger and unconfident–more confident. We thus refer to this factor as a rank factor. Social attractiveness has been related to social rank in that the more attractive individuals tend to be chosen over and above the less attractive. Indeed, attractiveness items of likeable, desirable and attractiveness loaded on rank. However, they also loaded on Factor 2 which includes items of outsider, left out, and different. These items we hypothesised were judgements of fit and acceptance within a social group. So the solution suggests two clear factors of rank and social group fit, with items measuring social attractiveness loading on both. For this reason we chose to treat the social attractiveness items separately thus giving us a pure factor for rank and a pure factor for group fit, and also allowing us to explore the contribution of attractiveness items by themselves to psychopathology.

For the clinical population the factor structure of the social comparison scale was explored in an identical manner as above. Given that the number of patients is rather small the results should be treated as exploratory and with caution. As before, a principal components analysis with varimax rotation was carried out with a cut of 0.5 for the inclusion of a variable in the interpretation of a factor. This analysis produced a solution with three factors having eigenvalues greater than one. These three factors accounted for 75.2% of the variance in the factor space (see Table 2). All eleven items loaded above the cut off on one of' the two factors. The Cronbach alpha for the 11 item scale was 0.88.

This factor structure is more consistent with theoretical predictions, in that rank, group fit, and attractiveness emerged as separate factors. The one caveat to this was that the item of confidence loaded on group fit rather than rank as it had in the student population.

*Pschopathology measures and the social comparison scale*

Table 3 presents the means and standard deviations for all measures. The clinical group score higher

Table 3. Means and SD's of SCL-90-R and social comparison scale totals

| | Student group ($N = 180$) | | Clinical group ($N = 32$) | |
|---|---|---|---|---|
| | Mean | SD | Mean | SD |
| Somatization | 0.54 | 0.53 | 1.15 | 0.76 |
| Obsessive–compulsive | 0.67 | 0.64 | 1.95 | 0.98 |
| Interpersonal sensitivity | 0.77 | 0.60 | 1.93 | 0.94 |
| Depression | 0.73 | 0.67 | 2.04 | 0.84 |
| Anxiety | 0.45 | 0.54 | 1.72 | 1.02 |
| Hostility | 0.57 | 0.63 | 1.14 | 0.98 |
| Phobic anxiety | 0.17 | 0.32 | 1.31 | 1.05 |
| Paranoid ideation | 0.60 | 0.61 | 1.63 | 0.96 |
| Psychoticism | 0.39 | 0.43 | 1.18 | 0.83 |
| SCL90 total (G.S.I.) | 0.57 | 0.46 | 1.63 | 0.76 |
| Social comparison Scale total (11 items) | 64.67 | 11.65 | 38.90 | 13.47 |

Table 4. Correlations of social comparison scale (total and sub-factors) with SCL-90-R in student group ($N = 180$)

| | Social comparison (11 item total) | SC rank | SC group fit | SC attractiveness |
|---|---|---|---|---|
| Somatization | −0.08 | −0.13 | −0.05 | −0.12 |
| Obsessive–compulsive | −0.13 | −0.16* | −0.17* | −0.10 |
| Interpersonal sensitivity | −0.24** | −0.22** | −0.26*** | −0.24** |
| Depression | −0.28*** | −0.27*** | −0.25** | −0.23** |
| Anxiety | −0.11 | −0.15* | −0.18* | −0.06 |
| Hostility | −0.26*** | −0.18* | −0.33*** | −0.23** |
| Phobic anxiety | 0.00 | 0.01 | −0.16* | −0.05 |
| Paranoid ideation | −0.12 | −0.06 | −0.19* | −0.17* |
| Psychoticism | −0.26*** | −0.20** | −0.33*** | −0.22** |
| SCL90 total (G.S.I.) | −0.22** | −0.21** | −0.27*** | −0.18* |

*$P < 0.05$; **$P < 0.01$; *** $P < 0.001$.

levels of psychopathology on all measures derived from the SCL-90-R and report more negative social comparisons than the student sample.

In order to introduce a consistency of the items for each factor, rank, attractiveness, and group fit, the items were chosen in accord with the two factor solution found for the students but with the attractiveness items used as separate factor. Table 4 presents Pearson product moment correlations for the SCL-90-R with the social comparison measures for the student group.

It can be seen that the factors of social comparison are correlated significantly with measures of psychopathology, apart from somaticism. Interestingly, in most cases the factor we have called 'group fit' has a slight, though non-significant, higher association with psychopathology than the 'rank' factor. This may be a spurious observation, although it may also reflect the importance of fitting in with the social group in a student environment. Of note is that feeling different from others (not fitting in and an outsider) is correlated at 0.33 with both hostility and psychoticism.

Table 5 presents Pearson product moment correlations for the SCL-90-R with the social comparison measures for the clinical group.

Two things stand out from this pattern of correlations. Firstly, on the whole, the size of correlations increase between social comparison and psychopathology in the clinical group compared to the student group. This was also found by Gilbert *et al.* (in press a). Secondly, social comparisons of group fit are all non-significant. It is as if rank and attractiveness become more salient social comparisons than those of group fit. This would obviously need replicating in a larger study, but may point to the fact that the relevance of social comparison depends on one's social environment and degree of psychopathology.

## *Discussion*

This study is a preliminary exploration of the value of using a semantic differential methodology to explore social comparison. In general, the data suggests this is a useful approach. The items included in this study were derived from theoretical and clinical observations. Included in the scale are rank items, items concerned with attractiveness, and items concerned with feeling different and being an

Table 5. Correlations of social comparison scale (total and sub-factors) with SCL90-R in clinical group ($N = 32$)

| | Social comparison (11 item total) | SC rank | SC group fit | SC attractiveness |
|---|---|---|---|---|
| Somatization | −0.22 | −0.30 | −0.04 | −0.21 |
| Obsessive–compulsive | −0.30 | −0.50** | −0.09 | −0.24 |
| Interpersonal sensitivity | −0.46* | −0.49** | −0.17 | −0.53** |
| Depression | −0.39* | −0.47** | −0.07 | −0.44* |
| Anxiety | −0.29 | −0.40* | −0.04 | −0.36* |
| Hostility | −0.03 | −0.17 | 0.21 | −0.19 |
| Phobic anxiety | −0.38* | −0.52** | −0.11 | −0.32 |
| Paranoid ideation | −0.32 | −0.29 | 0.02 | −0.48** |
| Psychoticism | −0.22 | −0.33 | 0.02 | −0.39* |
| SCL90 total (G.S.I.) | −0.35 | −0.42* | −0.02 | −0.36* |

*$P < 0.05$; **$P < 0.01$; *** $P < 0.01$.

outsider. It was found that in students this theoretical distinction between comparisons of rank and comparisons of group fit did emerge as separate factors. However, attractiveness seems to play a role in both types of judgement. It is conceivable that judgements of fitting in and judgements of relative social rank within a group may use similar types of socially relevant information. This may be especially true in the context of student life. A preliminary factor analysis of the patient group did suggest a three factor solution with attractiveness emerging as a separate factor.

With regard to the role social comparison plays in psychopathology, in a student group all three types of comparison correlate significantly with measures of psychopathology. However, in a clinical group social comparison related to rank (e.g. inferior–superior) and attractiveness become more important than group fit.

A number of cautions should be exercised in interpreting the results of this study. As noted earlier, other equally salient dimensions of social comparison may have been omitted, for example closeness–distance (Birtchnell, 1993; Gilbert *et al.*, in press a). Also, this study only used a small number of patients and certainly requires replication with a larger sample. Nevertheless, two findings are of interest. First, the items of inferiority, incompetence, untalented and weakness were consistently located on a separate factor in both the student and clinical groups. Similarly for left-out, different, and outsider. This is the first study to explore how different types of social comparisons, derived from evolution theory, relate to measures of psychopathology. To the best of our knowledge, there has been no study to date which has investigated differences in rank and group fit judgements. Secondly, these findings suggest that the patterns of social comparisons and their impact on psychopathology do vary according to whether one is studying a pathological or non-pathological group and warns against extrapolating too freely from student to clinical groups.

Social comparisons are important social judgements and often the focus of clinical intervention. A semantic differential approach to its measurement seems useful and could be adapted to explore various dimensions that other researchers see as relevant to psychopathology. This study presents preliminary support for the idea that rank and social 'fitting in' are salient dimensions .

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