A drug called comparison
Brenninkmeyer, V.

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CHAPTER 5

Burnout, social comparison orientation and the affective consequences of social comparison information

Abstract - Two studies were conducted to determine the affective consequences of upward and downward social comparison among individuals high and low in burnout. Study 1 employed a retrospective measure to assess affective reactions to social comparison. As expected, individuals high in burnout responded less positively to upward, and more negatively to downward comparison. An identical pattern was observed in Study 2, in which individuals were confronted with a scenario describing either a well or poorly functioning colleague. Study 2 further showed that with increasing levels of burnout, individuals identified less with the upward target and more with the downward target. Identification was an important mediator for the positive affective consequences of upward comparison. Moreover, especially among those high in social comparison orientation, i.e., with a strong dispositional tendency to compare themselves with others, identification with the upward target was accompanied by positive affect.

Burnout is a societal problem of great and growing concern. The current prevalence of burnout in our society can be regarded as high, and, judging from the rising levels of occupational stress, the future does not appear promising either (see Schaufeli & Enzmann, 1998). Moreover, burnout may entail, among other things, job dissatisfaction, reduced commitment, absenteeism, and turnover (see Burke & Richardson; Schaufeli & Enzmann, 1998). For this reason, burnout affects not only the individuals afflicted by it, but also the recipients of their care (e.g., clients, patients, and pupils), and eventually the society, which has to bear the costs of disability pensions and replacement of burnt-out individuals.

Burnout, a state of mental exhaustion due to chronic stress in the work situation, is generally considered as a syndrome consisting of three aspects (Maslach & Jackson, 1981). The first and most central aspect is emotional exhaustion (Shirom, 1989). Individuals in a state of burnout experience a depletion of emotional resources and feel ‘empty’ or ‘worn out’. The second aspect of burnout is depersonalization, a negative, cynical attitude toward one’s work or toward the recipients of one’s care (e.g., pupils or clients). The third aspect of burnout is reduced personal accomplishment, the tendency to evaluate one’s accomplishments at work negatively.

Burnout has been explored in numerous studies in a variety of populations and has been found to be associated with, among other things, external control, neuroticism, workload, role conflict, and lack of feedback from superiors (for recent overviews, see Schaufeli & Enzmann, 1998; Schaufeli & Buunk, 1996). There is increasing evidence that burnout is a syndrome that is distinct from other mental health problems such as depression (Brenninkmeijer, Van Yperen, & Buunk, 2001a).

The question addressed in the present research was whether individuals high in burnout interpret information about others differently, and relate it in a different way to themselves, than individuals low in burnout. In other words, we investigated social comparison processes among individuals with varying degrees of burnout. It might strike some as odd to treat burnout as a predictor rather than an outcome in itself. However, to gain more insight into the concept of burnout, such an approach is not uncommon. For instance, in depression research it is examined how individuals high and low in depression differ in their beliefs and their reaction to situations (e.g., Ahrens & Alloy, 1997).

In general, there is considerable evidence that social comparison processes may play an important role among people facing mental and physical health problems (e.g., Affleck & Tennen, 1991; Buunk & Gibbons, 1997; Van der Zee, Oldersma, Buunk, & Bos, 1998; Wood, Taylor & Lichtman, 1985). Social comparison processes may be particularly relevant for individuals suffering from burnout because burnout develops and persists, unlike for instance depression, mainly in the context of the working environment (see also Buunk & Schaufeli, 1993). At the workplace, social comparison is a quite prevalent phenomenon (e.g., Goodman, 1977). From a theoretical perspective, the aim of this study was to provide knowledge about the role of burnout in the interpretation of social comparison information and about its differential effect on positive and negative affect.

In the present studies, the participants were teachers, because burnout constitutes a serious problem in education. In Europe, it is estimated that 60 to 70% of the teachers experience frequent stress and that roughly 30% of the teachers show signs of burnout (Rudow, 1999). In terms of the risk of developing burnout, teaching seems even to be a more hazardous profession than other types of ‘people work’ (De Heus & Diekstra, 1999). In addition, it can be assumed that teaching gives ample opportunity for social comparison. In the staff room, for instance, teachers exchange
information about their lessons and students, thereby revealing information about their functioning.

It has been increasingly acknowledged that social comparison may originate from a number of distinct motives. An important motive for social comparison, apart from self-evaluation (Festinger, 1954) and self-improvement (Berger, 1977; Collins, 1996; Wood, 1989), is self-enhancement (Thornton & Arrowood, 1966; Wills, 1981; Wood, 1989). To enhance oneself, one may compare oneself with worse-off others. Many studies indicate that individuals experiencing health problems have a preference for downward comparisons, supposedly to enhance their subjective well-being by realizing that things could be worse (for a review, see Tennen, Mckee, & Affleck, 2000). Downward comparison is not the only route to self-enhancement, however. As already noted by Wheeler (1996), individuals with a strong desire for success tend to compare upward to prove that they are nearly as good as a superior other. Hence, upward comparison too may be used as a means to enhance oneself.

Crucial to self-enhancement are identification and contrast processes. According to Buunk and Ybema’s Identification-Contrast Model (1997), individuals generally strive for a sense of relative superiority, which Buunk and Ybema consider as “the translation of the physical struggle among primates for social dominance in a group” (p. 368). To obtain this sense of superiority, individuals would generally attempt to identify upward and to contrast downward. Upward identification refers to a focus on similarities with a better-off other and to the belief that one could reach, or that one has reached, the other’s position. This would foster positive feelings and a sense of self-worth. Similarly, one may try to enhance oneself by contrasting with worse-off others, that is, by focusing on differences with a worse-off other and by viewing the other’s position as avoidable. Thus, individuals may try to look for similarities with excellent colleagues and search for differences with poor colleagues in order to feel good about themselves.

Although individuals may generally try to enhance themselves, social comparison may often not have the desired, self-enhancing effect. In many situations, one cannot help but identify downward, rather than upward, and to contrast upward, rather than downward. Hence, social comparison may frequently entail negative effects, as Brickman and Bulman (1977) pointed out in their paper with the revealing title “Pleasure and Pain in Social Comparison”. A school reunion, for example, may be painful for the less successful people because their self-esteem may be harmed, whereas
successful people may feel distressed by seeing their worse-off former classmates. Brickman and Bulman (1977) illustrated this last type of experience by describing how Bulman felt while interviewing paralyzed victims of serious accidents: “The net effect ... was to depress the interviewer by increasing her sense of the vulnerability of her own life (pp. 169-170)” (see also Wills, 1991). In a similar vein, Buunk and Ybema (1997) described how upward contrast may make one’s inferiority salient, whereas downward identification may hurt by having individuals realize what they share with an unfortunate other.

It is assumed here that individuals in a state of burnout will be especially vulnerable to the possible detrimental effects of social comparison. That is, they may be less able to use social comparison information in beneficial ways and may experience a decline in mood following comparison with others. This assumption is based on the finding that individuals in a state of burnout are characterized by a low level of mental health as exemplified by a high level of stress (Schaufeli & Buunk, 1996), a low level of perceived control (for a review, see Glass & McKnight, 1996), and a high level of neuroticism (Deary, Blenkin, Agius, Endler, Zealley, & Wood, 1996). Individuals high in stress generally report less favorable feelings after social comparison, and this seems in part due to their lower levels of control (Ybema & Buunk, 1995). Individuals low in perceived control may feel that reaching the position of a better-off other or avoiding the position of a worse-off other is beyond their power. Indeed, in their review, Major, Testa, and Bylsma (1991) provide some evidence that individuals low in perceived control tend to interpret social comparison information in a more negative way than individuals high in perceived control. Similarly, individuals high in neuroticism seem to be particularly prone to focus on negative features of social comparison information (e.g., Van der Zee, Buunk & Sanderman, 1998). These individuals are marked by high levels of self-consciousness and strong feelings of anxiety, depression, and hostility (McCrae & Costa, 1990). They also appraise stressors as more stressful, they are less confident about their coping ability, they make more use of maladaptive coping strategies, and they think less rationally than individuals low in neuroticism (Gunthert, Cohen, & Armeli, 1999; Pacini & Epstein, 1999).

Although it may be assumed that individuals high in burnout generally respond less favorably to social comparison information, recent studies examining the affective consequences of social comparison in relation to
mental health suggest that it is important to distinguish between positive and negative affect. For example, a study by Ybema, Buunk, and Heesink (1996) among individuals who had lost their job showed that increasing levels of stress lowered the degree of positive affect after confrontation with a better-off comparison target and increased the degree of negative affect after confrontation with a worse-off comparison target. A study by Buunk, Ybema, Gibbons, and Ipenburg (2001) showed that increasing levels of burnout led to less positive affect after comparison with a better-off other. In a similar vein, Van der Zee, Buunk et al. (1998) found that, with increasing levels of neuroticism, cancer patients responded with less positive affect to confrontation with an upward comparison target and with more negative affect to a downward comparison target. It should be noted however, that in both studies upward comparison induced also more negative affect among individuals low in control or high in neuroticism.

In general, there is considerable evidence that the experience of negative affect is not necessarily the opposite of the experience of positive affect (Ashby, Isen, & Turken, 1999; Watson, Wiese, Vaidya, & Tellegen, 1999; but see also Feldman Barrett & Russell, 1998). Positive affect is related to the approach of situations that provide an opportunity for pleasure and reward and it is directed towards obtaining the resources necessary for survival, such as food and sex, whereas negative affect is connected with vigilance, withdrawal, and the avoidance of dangerous situations (e.g., Tomarken & Keener, 1998). Because upward identification is directed toward success and improvement, it can be expected that upward identification induces mainly positive affect. In contrast, downward identification represents what should be avoided and does not offer a position one could strive for, and may thus primarily evoke negative affect. Accordingly, it is hypothesized that upward comparison evokes less positive affect and downward comparison more negative affect as individuals are higher in burnout (Hypothesis 1). Thus, unlike Wills (1981), who underscored the beneficial consequences of downward comparison in his downward comparison theory, we do not assume that downward comparison is inherently related to more positive or less negative affect. Downward comparison is expected to be beneficial only when individuals contrast themselves with the worse-off other, which may be quite difficult for individuals with mental health problems, including burnout symptoms. This may be particularly true when they are faced with concrete rather than abstract downward comparison information (Buunk & Ybema, 1997).
Various social comparison researchers (e.g., Brickman & Bulman, 1977; Hemphill & Lehman, 1991) have suggested that individuals may vary in their need to compare themselves with others and that comparison information may be more important for some individuals than for others. Recent research indicates that individuals do indeed differ in their need for social comparison and that this dispositional need, the so-called social comparison orientation (SCO), influences responses to comparison information. Gibbons and Buunk (1999) have developed a scale, the Iowa Netherlands Comparison Orientation Measure (INCOM), to measure SCO. Several studies using the INCOM have indicated that the effects of social comparison information are more pronounced among individuals with a strong SCO (Buunk, Oldersma, & De Dreu, 2001; Van der Zee, Oldersma, et al., 1998). For instance, in the study by Van der Zee, Oldersma et al. (1998), individuals were more affected by comparison information when they had a strong need for comparison information. In addition, SCO moderated the link between neuroticism and affect following social comparison information. Therefore, it is expected that upward and downward comparison will have stronger affective consequences as individuals are higher in SCO (Hypothesis 2) and that social comparison orientation will enhance the effect of burnout on the affective responses to upward and downward comparison (Hypothesis 3). Hence, SCO is expected to have a main effect and to interact with burnout in determining the affective consequences of social comparison information.

After Study 1, in which we retrospectively investigated the affective responses to upward and downward comparison, we designed an experiment (Study 2) to investigate the mediating role of identification-contrast processes. In this study, teachers were confronted with a scenario about a well functioning or a poorly functioning teacher, after which affect and identification-contrast processes were assessed separately. Thus, the mediating role of identification-contrast in the relationship between burnout and the affective responses to social comparison, as inferred from the Identification-Contrast Model, could be examined. In addition, as recommended by Wood (1996), the experiment was designed to validate the results of the retrospective study.
Study 1

Method

Participants and procedure

Our sample consisted of 156 teachers in secondary education. The mean age of the participants was 45 years ($SD = 8.7$) and 58% of the sample was male. The average experience as a teacher was 19 years ($SD = 9.8$). Participants were given a questionnaire that they could fill out at home and subsequently return in a postage-free envelope.

Burnout. Burnout was measured with a Dutch version of the Maslach Burnout Inventory for teachers (MBI-NL-Le, Schaufeli & Van Horn, 1995), which consists of three subscales: Emotional Exhaustion, Depersonalization, and Personal Accomplishment (cf. Maslach & Jackson, 1981). Burnout, as measured with the MBI, can be distinguished from more general physical and psychological symptoms (see Schaufeli, Daamen, & Van Mierlo, 1994). The internal consistency of the subscales for exhaustion, depersonalization, and personal accomplishment was .88, .66, and .81, respectively. The relatively low internal consistency of depersonalization was in line with several other studies (e.g., Van Horn, Schaufeli, & Enzmann, 1999; VanYperen, 1996). Because our primary interest concerned the effects of burnout in general, and not those of the separate dimensions of burnout, we recoded the personal accomplishment items and then summed all the items of the MBI to one burnout measure. Cronbach’s alpha for this total scale was .87. To get an indication of the burnout percentage in our sample, we used a criterion developed by Brenninkmeijer and VanYperen (1999). Brenninkmeijer and VanYperen investigated how burnout could be most accurately assessed in a non-clinical sample by comparing the scores on the three burnout subscales of 44 persons who were performing well with the scores of 29 persons diagnosed as burnt-out by clinicians. For a non-clinical population, the ‘Exhaustion + 1’ criterion resulted in a low (6.8%) chance of falsely labeling a person as burnt-out. According to this criterion, a person should be considered burnt-out when he or she not only scores high (75th percentile or higher) on emotional exhaustion, but also high (75th percentile or higher) on depersonalization or low (25th percentile or lower) on personal accomplishment. In this sample, in which participants were compared to a Dutch norm group of 916
teachers working in secondary education (Schaufeli & Van Horn, 1995), this criterion resulted in a burnout percentage of 20.6%.

**Social comparison orientation.** Social comparison orientation (SCO), that is, the dispositional tendency to compare oneself with others, was measured with the Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999). This scale consists of 11 items, such as “I always like to know what others in a similar situation would do” and “I never consider my situation in life relative to that of other people”. The items are responded to on a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The psychometric qualities of the scale are good. Previous research has provided evidence of the construct, discriminant, and concurrent validity of the scale. Its internal consistency is high (Cronbach’s α > .80) and its test-retest reliability (over eight months) was .72. In the present sample, Cronbach’s alpha was .82.

**Identification-Contrast Scale.** A modified version of the Identification-Contrast Scale (Van der Zee, Buunk, Sanderman, Botke, & Van den Bergh, 2000) was used to assess retrospectively how teachers respond to comparisons with better-off and worse-off others. This scale reflects the assumption that feelings in response to social comparison are, as proposed by the Identification-Contrast Model, the result of either an identification or contrast process. The scale is an expansion of the work of Buunk, Collins, Taylor, VanYperen and Dakof (1990) and more particularly of Buunk, Ybema, Van der Zee, Schaufeli, and Gibbons (2001), who examined the positive and negative affective consequences of both upward and downward comparison among nurses in a state of burnout. Whereas Buunk et al. (1990) and Buunk, Ybema, Van der Zee et al. (2001) used only one item to assess each type of affect, the Identification-Contrast Scale consists of four subscales, each containing three items: positive affect from upward comparison, positive affect from downward comparison, negative affect from upward comparison, and negative affect from downward comparison. A factor analysis showed that the list encompasses two factors: positive interpretation (i.e., positive affect from upward and downward comparison) and negative interpretation (i.e., negative affect from upward and downward comparison). Because the items were originally developed for cancer patients, we reformulated the items slightly. Items measuring positive affect from upward comparison were: “When I see teachers who are functioning better than I am, I realize that it is possible to improve”; “When I meet teachers who are performing better than I am, it makes me
happy because I realize that it is possible for me to improve”; “When I think of teachers who are functioning better than I am, I have hope that my performance will improve”. Positive affect from downward comparison was measured with the following items: “When I see teachers who are functioning worse than I am, I am happy that I am doing so well myself”; “When I think of teachers who are functioning worse than I am, I feel relieved about my own performance”; and “When I meet teachers who are performing worse than I am, I realize how well I am doing”. Negative affect from upward comparison was measured with the following items: “When I see teachers who are doing better than I am, I find it threatening to notice that I am doing not so well”; “When I think of teachers who are functioning better than I am, I feel frustrated about my own performance”; and “When I meet teachers who are doing better than I am, I sometimes feel depressed because I realize that I am not doing so well”. Items measuring negative affect from downward comparison were: “When I see teachers who are doing worse than I am, I experience fear that my performance will decline”; “When I meet teachers who are performing worse than I am, I am sometimes afraid that my future will be similar”; and “When I think of teachers who are doing worse than I am, I am sometimes afraid that I will go the same way”. Items could be answered on a 5-point scale ranging from not at all (1) to strongly (5). We computed the scores on each subscale by taking the mean of the three items in the subscale. The internal consistency of the scales was good: Cronbach’s alphas were .93, .86, .85, and .83, respectively. For upward comparison, negative and positive affect did not correlate ($r = .01, \text{ns}$), whereas for downward comparison the correlation appeared to be significant ($r = .34, p < .01$).

**Results**

The four subscales in the Identification-Contrast Scale were hierarchically regressed on burnout, social comparison orientation (SCO), and the interaction between these two variables. To reduce collinearity between the variables and their products, we standardized all variables, but not their products (Aiken & West, 1991). Standardizing variables also facilitates the interpretation of results: With standardized variables, the unstandardized regression coefficients reflect the relative contribution of the predictors, controlling for differences in variance (Aiken & West, 1991).
Table 1. Results of hierarchical regression of positive and negative affect as a response to upward and downward comparison (Study 1).

<table>
<thead>
<tr>
<th></th>
<th>Upward comparison</th>
<th>Downward comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive affect</td>
<td>Negative affect</td>
</tr>
<tr>
<td></td>
<td>R^2</td>
<td>B</td>
</tr>
<tr>
<td>Step 1: Main effects</td>
<td>.09**</td>
<td>.33**</td>
</tr>
<tr>
<td>Burnout</td>
<td>-.17*</td>
<td>.39**</td>
</tr>
<tr>
<td>SCO</td>
<td>.28**</td>
<td>.35**</td>
</tr>
<tr>
<td>Step 2: Interaction effect</td>
<td>.04*</td>
<td>.02*</td>
</tr>
<tr>
<td>Burnout × SCO</td>
<td>-.17*</td>
<td>.13*</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

Table 1 shows that burnout had significant main effects on negative affect as a response to downward comparison, on negative affect from upward comparison, and on positive affect from upward comparison, but not on positive affect from downward comparison. Hence, in line with Hypothesis 1, the higher individuals were in burnout, the more they responded with negative affect to downward comparison and the less they responded with positive affect to upward comparison. In addition, individuals high in burnout responded also more negatively to upward comparison, but they did not respond less positively to downward comparison.

Table 1 also shows that, as predicted in Hypothesis 2, high-SCO individuals reported more affect, positive and negative, from social comparison in general. In addition, burnout and SCO had significant interaction effects on positive affect (see Figure 1) and negative affect from upward comparison. Inspection of the simple slopes (see Aiken & West, 1991) revealed that both positive and negative affect from upward comparison were more strongly related to burnout among high-SCO individuals (B = -.33, p < .01 and B = .51, p < .01, respectively) as compared to low-SCO individuals (B = .02, ns and B = .25, p < .01, respectively). Hence, Hypothesis 3, which stated that SCO would enhance the effect of burnout on the affective responses to upward and downward comparison, was therefore supported with respect to upward comparison.
Study 2

Introduction

Study 1 retrospectively assessed affective responses to social comparison and indicated that individuals high in burnout interpreted downward comparison in a more negative way and upward comparison in a less positive way than individuals low in burnout. We also found that SCO moderated the effect of burnout on the affective responses to upward comparison, but not to downward comparison. That is, especially among individuals with a strong SCO, upward comparison induced less positive and more negative affect as burnout was higher.

A second study was designed to further explore the mediating role of identification and contrast processes on the affective consequences of social comparison. In this study, we used an experimental paradigm and we assessed identification-contrast processes and affect separately. With this paradigm, we could determine to what extent identification-contrast processes are responsible for the more negative interpretation of downward comparison information and the less positive interpretation of upward comparison information.
comparison information among individuals in a state of burnout. In addition, as suggested by Wood (1996), it would be possible to determine whether an experimental method yields conclusions about the affective consequences of social comparison information similar to those of a retrospective method. We confronted individuals with a scenario about a well functioning or a poorly functioning colleague, after which we measured positive and negative affect, as well as the identification with the comparison target. This experimental paradigm, using scenarios containing comparison information, has been used in earlier studies (e.g., Gibbons & Gerrard, 1989; Van der Zee, Buunk et al., 1998; Ybema & Buunk, 1995). Similarly as in Study 1, it was expected that as levels of burnout increased, individuals would display more negative affective reactions following downward social comparison and less positive affective reactions following upward comparison (Hypothesis 1). In addition, based on Study 1 and the study by Van der Zee, Oldersma et al. (1998), we expected that the influence of burnout on the responses to upward comparison would be more pronounced among teachers with a strong SCO (Hypothesis 2).

As individuals high in burnout are expected to report less favorable affective reactions to social comparison than individuals low in burnout, the Identification-Contrast model (Buunk & Buunk, 1997) suggests that individuals high in burnout will identify and contrast themselves in a less self-serving way than individuals low in burnout. Phrased differently, one of the reasons that individuals high in burnout are expected to report more negative affect after downward comparison and less positive affect after upward comparison may be that they tend to identify more with others who are worse off and less with others who are better off. Hence, it is expected that, with increasing levels of burnout, individuals will identify less (i.e., contrast more) with a better-off other and will contrast less (i.e., identify more) with a worse-off other (Hypothesis 3). Moreover, as can be seen in Figure 2, it is hypothesized that the less favorable affective responses to comparison information among individuals with a high level of burnout will be the result of (i.e., will be mediated by) identification-contrast processes (Hypothesis 4).

An important theoretical question is at what point in the interpretation of comparison information social comparison orientation (SCO) plays a role. In methodological terms, the question is which paths in our mediational model (see Figure 2) are moderated by social comparison orientation. There are two possible ways in which SCO may influence the affective
consequences of comparison information. One possibility is that SCO influences the affective consequences by intensifying identification-contrast processes. In other words, identification and contrast processes may be more pronounced among individuals with a strong SCO. The other possibility is that SCO influences the affective consequences of identification and contrast; that is, SCO may act upon the amount of positive and negative affect derived from upward and downward identification and contrast. In Study 2, we explored whether SCO influences either identification and contrast processes, or the affective consequences of these processes, or both.

![Predicting mood following upward and downward social comparison.](image)

**Figure 2.** Predicting mood following upward and downward social comparison.

**Method**

**Participants and procedure**

The sample included 190 teachers in secondary education. The mean age of the participants was 44 years ($SD = 9.2$) and 60% of the sample was male. The average experience as a teacher was 18 years ($SD = 9.6$).
Participants were given a questionnaire that they could fill out at home. This questionnaire consisted of two sections. The first section consisted of several measures (see also Brenninkmeijer et al., 2001a), including measures of burnout and social comparison orientation.

**Burnout.** Similarly as in Study 1, we measured burnout with the Dutch version of the Maslach Burnout Inventory for teachers (MBI-NL-Le, Schaufeli & Van Horn, 1995). In this sample, the internal consistency of the subscales for exhaustion, depersonalization, and personal accomplishment was .91, .61, and .84, respectively. Again, the personal accomplishment items were reversed and then all items were added up to one burnout measure (Cronbach’s \( \alpha \) .85). In this sample, the ‘Exhaustion + 1’ criterion (see Study 1) yielded a burnout percentage of 15.3%.

**Social comparison orientation.** The measure of social comparison orientation (SCO) was the same as in Study 1, i.e., the Iowa-Netherlands Comparison Orientation Measure (INCOM; Gibbons & Buunk, 1999). In the current sample, Cronbach’s alpha was .85.

**Experimental manipulation.** The second part of the questionnaire was an experimental section in which we gave participants social comparison information (see Appendix, page 90) and in which we assessed their reaction to the comparison information offered. Participants were randomly assigned to conditions. Participants in the upward comparison condition read a scenario about a well functioning teacher named Wil, which is a gender-neutral name in the Netherlands. This teacher was highly inspiring, always came up with exciting educational material, and gave pupils a lot of personal attention. In the downward comparison condition, participants were given a scenario about a poorly functioning teacher. This teacher was not very inspiring, did not come up with exciting material, and did not give the pupils a lot of personal attention. The scenarios were based on an earlier experiment in which teachers generated behaviors of superior or inferior teachers (Brenninkmeijer, VanYperen, & Buunk, 2001b). In a pretest among 30 teachers in secondary education, we checked whether individuals perceived the upward scenario as more upward than the downward scenario. Individuals randomly received either the upward or downward scenario (i.e., the design was between-subjects), after which they were asked how they rated their own functioning compared to the target. This item could be answered on a 5-point scale ranging from much less good (coded as 1) to much better (coded as 5). It appeared that individuals rated their own functioning compared to the target as lower when they compared
upward rather than downward ($t(28) = -10.56, p < .01$). Furthermore, they rated their own functioning as worse than the upward target and as better than the downward target. Both means ($M_{\text{upward}} = 2.00, SD = 0.54$ and $M_{\text{downward}} = 4.17, SD = 0.59$) differed significantly from 3 ($t(14) = -7.25$ and $7.69, ps < .01$), which is the point at which one perceives oneself as equally good as the target. In the final study, the scenario was followed by several measures that assessed the participants’ reaction to the comparison information. The measures in the experimental section included affect and identification-contrast, which could be answered on a 5-point scale ranging from not at all (1) to very much (5).

**Affect.** Positive and negative affect were each measured with three questions. The items measuring positive affect were: “To what extent does this fragment give you a positive feeling?”; “To what extent do you find this fragment inspiring?”; and “To what extent do you find this fragment hopeful?” The negative-affect items were: “To what extent does this fragment give you a negative feeling?”; “To what extent do you find this fragment discouraging?”; and “To what extent do you find this fragment threatening?” Cronbach’s alphas for positive and negative affect were .85 and .74, respectively. Positive and negative affect correlated on in the downward condition -.43 ($p < .01$) and in the upward condition -.45 ($p < .01$).

**Identification-contrast.** Identification-contrast with the comparison target was measured with three items relating to identification and two items relating to contrast. The items measuring identification were as follows: “Do you recognize something of yourself in Wil?”; “Do you think you resemble Wil?”; and “Do you think that in the future you will reach (or will keep) Wil’s position?” The remaining two items measured contrast and were: “Do you think that Wil is another kind of person than you?” and “Do you see a contrast between you and Wil?” Because identification refers to a focus on similarities with the comparison target and to the belief that one may attain the position of the target, it seems to be the opposite of contrast, which refers to a focus on differences with the comparison target and to the belief that one will not reach the position of the target. As such, identification and contrast can be considered as the two poles of a continuum, and accordingly, we recoded items measuring contrast, so that a high score on the identification-contrast measure signifies high identification and low contrast. In a principal components factor-analysis, one factor emerged with an Eigenvalue greater than 1 (3.62), explaining
72.5% of the variance. Accordingly, the internal consistency of the scale was very high (Cronbach’s $\alpha .90$)

**Results**

*Affective consequences.* To assess the influence of burnout and the moderating role of SCO on the affective consequences of social comparison information (see Hypotheses 1 and 2), we regressed positive and negative affect on comparison direction (coded as -1 for the downward condition and +1 for the upward condition), burnout, SCO, and the interactions between these variables.

*Table 2.* Results of hierarchical regression of positive affect, negative affect and identification-contrast on burnout, SCO and comparison direction (Study 2).

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<th></th>
<th>Positive affect</th>
<th>Negative affect</th>
<th>Identification-Contrast</th>
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<tr>
<td></td>
<td>$R^2$</td>
<td>$B$</td>
<td>$R^2$</td>
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<tr>
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<td>SCO</td>
<td>.12*</td>
<td>.05</td>
<td>.10</td>
</tr>
<tr>
<td>Comparison direction</td>
<td>.64**</td>
<td>-.59**</td>
<td>.66**</td>
</tr>
<tr>
<td><strong>Step 2: Two-way interactions</strong></td>
<td>.04**</td>
<td>&lt;.01</td>
<td>.11**</td>
</tr>
<tr>
<td>Burnout × SCO</td>
<td>-.12*</td>
<td>-.06</td>
<td>-.04</td>
</tr>
<tr>
<td>Burnout × Comparison direction</td>
<td>-.15**</td>
<td>.06</td>
<td>-.33**</td>
</tr>
<tr>
<td>SCO × Comparison direction</td>
<td>.06</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td><strong>Step 3: Three-way interaction</strong></td>
<td>.01*</td>
<td>&lt;.01</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Burnout × SCO × Comparison direction</td>
<td>-.11*</td>
<td>.10</td>
<td>-.03</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

Table 2 shows that upward comparison induced more positive and less negative affect than downward comparison. Furthermore, individuals with a strong SCO reported more positive affect following social comparison.
In addition, we found a main effect of burnout on negative affect, indicating that with increasing levels of burnout, individuals reported more negative affect after both upward and downward comparison. Increasing levels of burnout also led to less positive affect, but this effect was qualified by a significant interaction between burnout and comparison direction (see Figure 3). It appeared that it was only after upward comparison that individuals experienced less positive affect with increasing levels of burnout ($B_{\text{upward}} = -.29, p < .01$ vs. $B_{\text{downward}} = -.01$, ns). Hence, the prediction that individuals high in burnout would report more negative affect after downward comparison and less positive affect after upward comparison (Hypothesis 1) was confirmed. In line with Study 1, no interaction was found between burnout and comparison direction on negative affect. This means that not only after downward comparison, but also after upward comparison, individuals reported more negative affect with increasing levels of burnout.

![Figure 3](image-url)  
*Figure 3. Positive affect as a function of burnout and comparison direction.*

Table 2 also shows an interaction effect between SCO and burnout on positive affect, but this effect was qualified by a three-way interaction. It appeared that it was only in the upward comparison condition that the
interaction between burnout and SCO was significant ($B_{\text{upward}} = -.19$, $p < .01$ vs. $B_{\text{downward}} = .03$, $ns$). As Figure 4 shows, only among high-SCO individuals, upward comparison generated less positive affect as burnout was stronger ($B_{\text{high-SCO}} = -.47$, $p < .01$ vs. $B_{\text{low-SCO}} = -.09$, $ns$). Thus, the expectation that SCO would enhance the link between burnout and affect following upward comparison (Hypothesis 2) was confirmed with regard to positive affect.

![Figure 4](image.png)

*Figure 4.* Positive affect after upward comparison as a function of burnout and social comparison orientation.

**Identification-contrast.** To determine whether burnout influenced identification-contrast processes (see Hypothesis 3), identification-contrast was regressed on burnout and comparison direction. Table 2 shows that, over all, individuals identified more with the upward target than with the downward target. In addition, and as expected in Hypothesis 3, we found a two-way interaction (see Figure 5), indicating that individuals in the upward condition identified less as burnout levels increased ($B = -.38$, $p < .01$), whereas individuals in the downward condition identified more as burnout levels increased ($B = .28$, $p < .01$).
Because burnout had significant associations with identification-contrast, as well as with positive affect in the upward condition ($B = -.29$, $p < .01$) and negative affect in both conditions ($B = .39$, $p < .01$), we examined to what extent identification-contrast mediated the effects of burnout. To test whether indeed the less favorable affective responses to comparison information among individuals high in burnout were the result of (i.e., were mediated by) identification-contrast processes (Hypothesis 4), we performed regression analyses in which we entered identification-contrast and burnout simultaneously (see Baron & Kenny, 1986). These analyses were performed for both conditions separately. When the effect of identification-contrast is significant and renders the effect of burnout non-

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One may wonder, as a reviewer noted, how informative it is to know that individuals in a state of burnout, who are characterized by reduced personal accomplishment, identify less with a high performing target and more with a poorly performing target. However, it appeared that this results cannot be attributed to the influence of personal accomplishment alone: Identical analyses were performed for each burnout subscale separately and revealed similar interactions of comparison direction with emotional exhaustion, depersonalization, and personal accomplishment ($B = -.26$, $B = -.32$, and $B = .30$, respectively, all $ps < .01$).
significant, identification-contrast fully mediates the relationship. When it only reduces the effect of burnout, partial mediation holds. As shown in Table 3, identification-contrast had a significant main effect on positive affect in the upward condition, indicating that positive affect was higher as upward identification was stronger. The effect of burnout was no longer significant, which suggests that identification-contrast fully mediated the effect of burnout on the experience of positive affect following upward comparison. The effect of burnout on negative affect after upward comparison and downward was slightly reduced and the effects of identification-contrast were significant, pointing to a partially mediating role of identification-contrast.

**Table 3.** Results of regression of positive and negative affect after upward comparison and downward comparison on burnout and identification-contrast (Study 2).

<table>
<thead>
<tr>
<th></th>
<th>Upward comparison</th>
<th>Downward comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive affect</td>
<td>Negative affect</td>
</tr>
<tr>
<td>R²</td>
<td>B</td>
<td>R²</td>
</tr>
<tr>
<td>Step 1: Main effects</td>
<td>.48**</td>
<td>.22**</td>
</tr>
<tr>
<td>Burnout</td>
<td>-.02</td>
<td>.20**</td>
</tr>
<tr>
<td>Identification-contrast</td>
<td>.72**</td>
<td>-.21**</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

To test whether SCO moderated the relationship between burnout and identification-contrast (see Figure 2), we regressed identification-contrast on burnout, SCO, comparison direction, and the interactions between these variables, which showed that SCO was not a moderator (see Table 2). Although we did not find significant three-way interactions of SCO, identification-contrast, and comparison direction on positive and negative affect (for both variables R² < .01, ns), we tested whether SCO moderated the links between identification-contrast and affect by regressing in each condition positive and negative affect on identification-contrast and SCO.
Table 4. Results of hierarchical regression of positive and negative affect after upward and downward comparison on identification-contrast and SCO (Study 2).

<table>
<thead>
<tr>
<th></th>
<th>Upward comparison</th>
<th>Downward comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive affect</td>
<td>Negative affect</td>
</tr>
<tr>
<td></td>
<td>$R^2$     B</td>
<td>$R^2$     B</td>
</tr>
<tr>
<td>Step 1: Main effects</td>
<td>.48**   .18**</td>
<td>.02       .04</td>
</tr>
<tr>
<td>Identification-contrast</td>
<td>.73**</td>
<td>-.33**</td>
</tr>
<tr>
<td>SCO</td>
<td>.05       .14</td>
<td>.05       .08</td>
</tr>
<tr>
<td>Step 2: Interaction effect</td>
<td>.03*</td>
<td>.02</td>
</tr>
<tr>
<td>Identification-contrast $\times$ SCO</td>
<td>.18*</td>
<td>-.11</td>
</tr>
</tbody>
</table>

* p < .05; ** p < .01

(see Table 4). The two-way interaction on positive affect following upward was significant, indicating that identification-contrast with the upward target was more strongly related to positive affect among high-SCO individuals ($B = .95, p < .01$) than among low-SCO individuals ($B = .59, p < .01$). It appeared that especially among high-SCO individuals, upward identification was accompanied by positive affect. Our final model concerning the experience of positive affect from upward comparison is depicted in Figure 6.

![Figure 6](image_url)
Discussion

Burnout

Two studies were conducted to determine the affective consequences of upward and downward comparison information among individuals with different levels of burnout. In Study 1, we investigated retrospectively how individuals responded to comparison with better-off and worse-off others. This study confirmed our expectation that individuals interpreted downward comparison information more negatively and interpreted upward comparison information less positively as their burnout levels increased. An identical pattern emerged in Study 2, in which we confronted individuals with a scenario about a well or poorly functioning colleague. With increasing levels of burnout, individuals reported more negative affect after downward comparison and less positive affect after upward comparison. As such, our findings underline that positive and negative affect reflect different psychological processes (cf. Watson et al., 1999). More specific, they are congruent with the notion that positive affect is associated with the approach of rewarding situations, whereas negative affect is associated with withdrawal from threatening situations. Because positive affect is related to opportunities and obtaining resources, upward comparison will induce mainly positive feelings, especially in the case of identification with the better-off other. Downward comparison does not indicate something to strive for, but rather something to avoid, and will therefore evoke primarily negative affect, especially in the case of identification with the worse-off other.

The fact that the two rather different methods yielded similar conclusions about the affective consequences of social comparison substantiates the validity of the two paradigms and the reliability of our results. Moreover, the findings are in line with research employing other, though related, aspects of mental health, including stress, neuroticism, and perceptions of control, and conducted in different populations (Van der Zee, Buunk et al., 1998; Ybema & Buunk, 1995). Hence, there is increasing converging evidence that a variety of measures assessing (a lack of) mental health influence the capacity to use social comparison information in a self-serving way and, in particular, the ability to derive positive affect from upward comparison and to avoid negative affect from downward comparison.
Both studies indicate, however, like the studies of Van der Zee, Buunk, et al. (1998) and Ybema and Buunk (1995), that individuals high in burnout responded more negatively to upward comparison as well. Hence, these individuals seem to perceive upward comparison as a danger or threat, perhaps because it made them aware of their inferiority or their low personal accomplishment. As noted by numerous authors, being outperformed by a superior other may pose a threat to one’s self-esteem and may therefore evoke a negative mood and a low sense of well-being (e.g., Buunk & Ybema, 1997; Diener & Fujita, 1997; Morse & Gergen, 1970).

The finding that downward comparison generated less positive affect and more negative affect than upward comparison, irrespective of the individual’s level of burnout, is in contrast with Wills’ downward comparison theory (1981), which emphasizes the beneficial effects of downward comparison for individuals experiencing a decline in well-being. It might be that Wills’ downward comparison theory applies only under certain conditions. Buunk and Ybema (1997) noted that individuals may profit more from downward comparison with an abstract person (e.g., in the form of a test score) than with an actual person. As mentioned earlier, Bulman (Brickman & Bulman, 1977) reported that interviewing paralyzed individuals depressed her and reminded her of her own vulnerability. She seemed to realize that misfortune could also happen to her. Furthermore, according to Gibbons and Gerrard (1991; see also Aspinwall & Taylor, 1993), downward comparison information would be beneficial only for individuals whose well-being is both permanently and temporarily threatened. This suggests that individuals in a state of burnout may benefit from downward comparison only when their well-being is even further endangered, such as when receiving a bad evaluation.

Identification-Contrast

Identification-contrast processes are considered important in determining the affective consequences of social comparison (e.g., Buunk & Ybema, 1997): Identification with an upward target and contrast with a downward target may ameliorate mood and foster a sense of relative superiority, whereas downward identification and upward contrast may have detrimental effects. In Study 2, we utilized a scale that assessed identification-contrast separately from affect to investigate how identification-contrast processes are related to burnout and to the affective consequences of social comparison. We expected that individuals in a state
of burnout would identify themselves in a less self-serving manner. In line with our expectation, and with the findings of Buunk, Ybema, Van der Zee et al. (2001), we found that individuals high in burnout identified less (i.e., contrasted more) upward and contrasted less (i.e., identified more) downward. One possible explanation for this effect would be that individuals in a state of burnout are characterized by low levels of perceived control and high levels of neuroticism. A sense of control and a low degree of neuroticism may be essential for perceiving the position of a better-off other as attainable and the position of a worse-off other as avoidable. Indeed, in a study by Van der Zee, Buunk et al. (1998), neuroticism appeared to be related to less upward identification and more downward identification. Hence, it seems that individuals low in burnout, rather than those high in burnout, are characterized by high expectations about their own performance. Or perhaps individuals in a state of burnout have adjusted their previously high expectations to their actual functioning. It is often assumed that unrealistically high expectations trigger the development of burnout, although the empirical evidence for this assumption is not conclusive (Schaufeli & Enzmann, 1998).

Identification-contrast processes were expected to mediate the affective responses among individuals high and low in burnout. With respect to negative after upward and downward comparison, identification seemed to mediate only partly the effect of burnout. Hence, although individuals high in burnout identified and contrasted themselves in a less adaptive way, this was not the only reason that they experienced negative feelings after comparison. With respect to the positive affective consequences of upward comparison, identification fully mediated the effect of burnout. That is, those high in burnout derived less positive affect from upward comparison because they identified less with the better-off other. This finding is analogous to the results in the Ybema and Buunk study (1995), in which identification mediated the relationship between perceived control and the amount of positive affect following upward comparison. In addition, the results are in line with Collins (2000), who suggests that individuals with low self-esteem may not expect to be similar to upward targets and may therefore not assimilate with these targets. Thus, several studies indicate that individuals high in burnout or low in self-esteem have a reduced capacity to identify with better-off others. Nonetheless, in a study by Brown, Novick, Lord, and Richards (1992), individuals low in self-esteem showed a relatively strong motivation to enhance themselves when
confronted with an upward target with whom they shared a distinctive similarity. Hence, individuals low in self-esteem or high in burnout may find it difficult to fulfill their need for self-enhancement by identifying upward, unless perhaps similarities with an upward target are striking or are pointed out to them. Another possibility would be that individuals may find it easier to identify upward when they are given the opportunity to choose or to cognitively construct the upward targets themselves (cf. Buunk, Oldersma et al., 2001). Thus, in a future experiment, self-enhancement may be induced among individuals in a state of burnout by having them think about similarities between themselves and better-off, self-chosen others (cf. Stapel & Koomen, 2001).

An alternative interpretation for the finding that individuals high in burnout reported less upward identification would be that upward identification might serve as a buffer against burnout. That is, these individuals may be in a state of burnout just because they are not able, for some reason, to identify with better-off others. Upward identification might foster feelings of superiority and might protect one against burnout. That is, individuals might derive a sense of self-efficacy from upward identification or might learn how to deal with difficulties (Bandura, 1982) and may in this way escape burnout (see also Ybema & Buunk, 1995). However, we did not design our experiment to examine this reasoning and the results are, as could be expected, more in line with our former interpretation. Further, prospective research would be necessary to examine the relationship between upward identification in general and the development of burnout symptoms.

**Social comparison orientation**

In both studies, we expected that the affective consequences of comparison information would be more pronounced among individuals with a high SCO, that is, among individuals with a strong dispositional need to compare themselves with others. It appeared that the affective reactions to upward comparison were moderated by SCO: The higher individuals were in burnout, the less positively and the more negatively they interpreted upward comparison information (Study 1) and the less positive affect they derived from upward comparison (Study 2), but only, or particularly, if they were high in SCO. Although the retrospective study suggests that both positive and negative responses to upward comparison are moderated by SCO, the experimental study indicates that after forced upward comparison,
this is true only for the experience of positive affect. Both studies indicate, however, that SCO does not moderate reactions to downward comparison. One possible, although purely hypothetical explanation for the absence of a moderating effect on the responses to downward comparison would be that teachers may have a lower interest in downward comparison because of the learning environment in education. Teachers may focus more on information that could help improve their performance rather than on information that just makes them feel good about their performance. Hence, upward comparison may affect teachers, especially those with a high need for this information, more than downward comparison.

In Study 2, we also investigated the mechanism through which SCO influences the experience of positive affect after upward comparison. Is it by enhancing identification-contrast processes or by intensifying the affective consequences of identification-contrast? Rather than intensifying identification and contrast processes, SCO appeared to enhance the amount of positive affect derived from upward identification. This finding is theoretically quite important because it suggests that not everyone may profit to the same extent from upward identification: In particular those with a strong dispositional need for social comparison information derived positive affect from upward identification. As these individuals seem to be characterized by feelings of uncertainty (see Gibbons & Buunk, 1999), upward comparison may reassure them that they are indeed nearly as good as the upward target, whereas this information may add little to the sense of certainty of highly confident individuals (but see Buunk et al., 1990).

It should be mentioned that the amount of explained variance in our studies, in particular the variance explained by the interaction effects, was not very high. However, studies using ANOVA generally do not report $R^2$ and calculation of $R^2$ often reveals values equal, or lower than our own. More importantly, a critical remark is warranted on the use of explained variance as a measure of the importance of the findings (O’Grady, 1982; Rosenthal & Rubin, 1979). Rosenthal and Rubin (1979) have shown that explained variance can be a deceptive measure, by giving an example of a fictitious experiment ($N = 100$) in which a variable has important effects (30 vs. 70% survival following treatment), but accounts only for 16% explained variance. In addition, several features of our studies may have accounted for the low explained variance (O’Grady, 1982): For instance, we used experimental designs, which generally explain less variance than correlational studies, and we used a modest number of predictors, which
also limits the amount of explained variance (O’Grady, 1982). In sum, a low amount of explained variance does not necessarily imply that the relevance or importance of the results is limited as well.

**Practical implications**

Individuals are often confronted with information about others, for instance, via the media, or through friends, colleagues, and family (see Brickman & Bulman, 1977). In the work situation, one may receive information about how others are functioning on a daily basis (e.g., Goodman, 1977). Our findings indicate that these others may be perceived as stressors, that is, individuals may experience a decline in mood when confronted with these others. The effects of comparison information may therefore accumulate into a stressor of importance, particularly for those with a strong need to compare themselves with others. In this way, social comparison may lead to distress and may generate feelings of burnout, which constitutes a serious problem in many Western and non-Western countries. Although we recognize the influence of organizational stressors such as a lack of autonomy, ineffective leadership, and role ambiguity, we believe that a social comparison perspective has significant promise for studying well-being, stress, and burnout (Snyder, Tennen, Affleck, & Cheavens, 2000). Specifically, in the individual treatment of burnout, which should be combined with interventions at an organizational level when complaints are shared by others (e.g., VanYperen & Snijders, 2000), attention should be given to dysfunctional social comparison processes. People who are negatively affected by social comparison information may learn to use social comparison information in a more self-serving way, for instance, by focusing on similarities with better-off others. As such, social comparison may be changed from a source of distress into a tool for self-enhancement.
Appendix

Scenario containing downward (between brackets) and upward (in italics) social comparison information (Study 2).

Wil Heesink is a [poorly] exceptionally well functioning teacher. For instance, pupils think that Wil teaches in a [rather uninspiring] highly inspiring way and [seldom] always comes up with ‘exciting’ material. Wil [does not give] gives much personal attention to pupils and [does not show] shows much interest in the background of the pupils. Furthermore, Wil keeps order [poorly] well and [fairly often bursts] does not burst out toward pupils. So not surprisingly, pupils [fairly often] seldom play truant during Wil’s lessons and they find the atmosphere during class [unpleasant] very pleasant. Wil [does not spend] spends very much attention to the general knowledge of pupils and the final examination grades of Wil’s pupils are in general [below] far above the national average. Furthermore, Wil can be described as someone who works with [little] much accuracy and conscientiousness. Tests for example, are [not] quickly corrected and the preparation of lessons is [poor] good. Moreover, Wil is [not] actively engaged in school matters and is therefore [often not] always informed about the latest developments. Wil is [hardly ever] frequently asked to be a member of a committee.