

## **Social Comparison, Perceived Control, and Occupational Burnout**

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Deux études transversales ont porté sur 72 officiers des douanes (recherche no. 1) et sur cent officiers de police (recherche no. 2) dans le but d'approfondir la relation entre la direction de la comparaison sociale et des variables comme le burnout, des plaintes relatives à la santé ou la satisfaction liée au travail. La comparaison sociale a été mesurée par la fréquence avec laquelle les sujets disaient se comparer avec des salariés mieux et moins bien lotis sur plusieurs dimensions professionnelles. On a mené des analyses de corrélation plusieurs et de médiation pour mettre à l'épreuve deux hypothèses complémentaires. Premièrement, la comparaison ascendante était supposée être positivement liée au contrôle perçu et à la satisfaction professionnelle, et négativement aux ennuis de santé et au burnout. Deuxièmement, le contrôle perçu devait avoir un impact sur la relation entre la direction de la comparaison et des variables comme le burnout, les plaintes relatives à la santé ou la satisfaction liée au travail. Les résultats des deux études ont partiellement validé ces attentes et montré que seule la composante émotionnelle du burnout, l'épuisement émotionnel, était affectée par la direction de la comparaison sociale et médiatisée par le contrôle perçu.

Two cross-sectional studies were conducted among 72 customs officers (Study 1) and 100 police officers (Study 2) to examine the relationship between the direction of social comparison and outcomes such as occupational burnout, health complaints, and job satisfaction. Social comparison was measured by the frequency at which participants reported that they compared themselves with better-off and worse-off employees on several work-related dimensions. Correlation and mediation analyses were conducted to test two complementary hypotheses. Firstly, upward comparison was expected to be positively related to perceived control and job satisfaction, and negatively related to health complaints and occupational burnout. Secondly, perceived control was expected to mediate the relationship between comparison direction and psychological outcomes such as burnout, health complaints, and job satisfaction. The results of both studies partially supported these predictions and showed that only the emotional component of burnout—emotional exhaustion—was affected by social comparison direction and mediated by perceived control.

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## SOCIAL COMPARISON, PERCEIVED CONTROL, AND OCCUPATIONAL BURNOUT

Work plays an important role in the lives of most people. At the workplace, people may acquire prestige and self-esteem. The work environment thus represents an important life domain for adults in that it contributes to overall personal satisfaction. Nevertheless, because of its central role in life, work can also create frustration, stress, and various other psychological outcomes. Indeed, the work environment may contain a variety of objective stressors such as physical, chemical, and biological hazards. It may also contain more subjective stressors such as uncertainty about the future, responsibility-related pressures, role conflict, interpersonal clashes, and so on (e.g. Cooper, 1998; Levi, 2000; Quick, Quick, Nelson, & Hurrell, 1997). These stressors may lead to a variety of psychological outcomes, including health complaints, depression, anxiety, dissatisfaction, and so forth (Warr, 1987). Occupational stress is among the most frequent reactions that people report. A specific category of stress called *occupational burnout* is examined more closely in the present research to determine its relationship with other variables such as social comparison and perceived control.

A number of studies using separate designs have investigated the relationship between occupational burnout and social comparison (e.g. Buunk, Ybema, Gibbons, & Ipenburg, 2001), social comparison and perceived control (e.g. Major, Testa, & Bylsma, 1991), and occupational burnout and perceived control (e.g. Chwalisz, Altmaier, & Russell, 1992; see also Bandura, 1997). The main goal of the studies conducted here was to go further into examining the relationship between these variables in cross-sectional surveys involving threatened populations. Because a serious limitation of cross-sectional survey research is the problem of interpreting causal relationships, an additional goal was to perform a set of mediation analyses in order to pinpoint any causal relationships between the variables of interest.

Traditionally, occupational burnout is defined in terms of three components. *Emotional exhaustion* (i.e. the depletion or draining of emotional resources) has been shown to be its major characteristic among human service professionals such as nurses, policemen, and teachers (e.g. Shirom, 1989). The other two components are *depersonalization* and *reduced personal accomplishment* (e.g. Maslash & Jackson, 1981, 1986; Maslash, 1978, 1993). The former reflects a negative, callous, and cynical attitude towards the recipients of one's care. The latter reflects the tendency to negatively self-evaluate one's accomplishments at work. In summary, emotional exhaustion is the core element of burnout and is accompanied by two kinds of negative attitudes: client-directed (depersonalization) and self-directed (reduced sense of personal accomplishment).

Researchers have tried to identify the factors that affect occupational burnout, and other psychological outcomes such as health complaints and job satisfaction, in order to better understand the phenomenon and thereby reduce psychological distress. It is recognized today that a number of work-related stress and health problems are caused by social factors. One of the important social factors related to occupational burnout, health complaints, and job satisfaction is thought to be self-comparison with others. Indeed, a number of studies have demonstrated that social comparisons are prominent in populations facing a threat (Buunk & Gibbons, 1997) and may be a critical means of producing or coping with stress on the job (e.g. Buunk & Schaufeli, 1993; Buunk, Schaufeli, & Ybema, 1994; Buunk & Ybema, 1997; Geurts, Buunk, & Schaufeli, 1994). The direction of the comparison, i.e. whether the comparison concerns someone who is better off or worse off than oneself (termed upward and downward comparison, respectively), has been a central concept in social comparison research (Latané, 1966; Hakmiller, 1966; Suls & Miller, 1977; Suls & Wills, 1991; Suls & Wheeler, 2000). Upward and downward comparisons are generally determined by self-motives (Helgeson & Mickelson, 1995; Wood, 1989; Wood & Taylor, 1991). For example, the self-improvement motive is known to engage individuals in upward comparison and, in return, this direction of comparison is known to have an impact on outcomes such as affect, well-being, self-esteem, and behavior (e.g. Aspinwall & Taylor, 1993; Buunk, 1994; Gibbons & Gerrard, 1989; Morse & Gergen, 1970; Reis, Gerrard, & Gibbons, 1993). In experiments in which threatened participants were exposed to comparison targets, the general pattern tended to be that upward comparisons induced more positive affect than downward ones, and that downward comparisons induced more negative affect than upward ones (e.g. Aspinwall & Taylor, 1993; Buunk et al., 2001; Collins, 1996; Van der Zee, Buunk, & Sanderman, 1998). It has also been demonstrated that the consequences of a social comparison may be strongly determined by the control individuals feel they have over the comparison dimension or the situation<sup>1</sup> (e.g. Buunk, 1995; Buunk, Collins, Taylor, Van Yperen, & Dakof, 1990; Major et al., 1991).

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<sup>1</sup> Control is often defined as “the perceived ability to significantly alter events” (Burger, 1989, p. 246) and sometimes as having many facets, as in “the expectation of having the power to participate in making decisions in order to obtain desirable consequences and a sense of personal competence in a given situation” (Rodin, 1990, p. 4). In itself, the sense of personal competence is very similar to beliefs about personal mastery, which is one aspect of Bandura’s (1986, 1997) self-efficacy construct. Among other things, Bandura (1986, 1997) advanced that individuals possess beliefs that enable them to exercise control over their thoughts, feelings, and actions. Despite the heterogeneity in the constructs researchers use to describe control (see Skinner, 1996), we define perceived control as an *individual’s belief* in his or her ability to effect a change in a desired direction and to improve oneself (see Greenberger & Strasser, 1986).

Some research has demonstrated that comparison with more fortunate people produces more positive affect than downward comparison when the individual's perceived control over the dimension is high (e.g. Testa & Major, 1990). Other research has suggested that upward comparison targets may be regarded as models that individuals use to determine whether they can improve a situation (Collins, 1996; Nosanchuk & Erickson, 1985) and, when comparing upward, improve themselves (e.g. Blanton, Buunk, Gibbons, & Kuyper, 1999; Huguet, Galvaing, Monteil, & Dumas, 1999; Seta, 1982; Vrugt & Koenis, 2002). For example, Vrugt and Koenis (2002) recently demonstrated that upward comparison produced higher personal goals, which predicted the future scientific productivity of academic staff members. Thus, unlike downward comparisons, upward comparisons may provide information that is directly useful in the service of self-improvement (e.g. Helgeson & Mickelson, 1995; Wood, 1989; see Collins, 1996, for a review). Undoubtedly, the self-improvement motive requires feeling that one has minimal control over the situation. Consequently, perceived control, a necessary condition for improving oneself, should be stronger when individuals compare with more fortunate models. In another theoretical perspective, Bandura's (1986, 1997) *Social Cognitive Theory* (SCT) provided some arguments supporting this idea. This theory suggests (among other things) that vicarious experiences influence variables like perceived control (or self-efficacy beliefs) and stress. According to SCT, vicarious experience refers to the human ability to improve from the observation of models. Different procedures have been used to explicitly create vicarious experiences (e.g. bogus feedback, structured teaching environment, influence of supervisor or co-worker support) and examine their impact upon individuals. The present research goes further into this issue by examining vicarious experience in a more subtle way through social comparisons in everyday informal contact with co-workers. It is reasonable to assume that a subtle vicarious experience through comparisons with a successful model produces greater perceived control over self-improvement, and consequently, less occupational burnout. It is predicted that people who frequently compare upward will develop a higher level of perceived control and better outcomes than those who compare downward, because upward comparisons provide successful models (e.g. Bandura, 1986) and information that is directly useful to improving oneself (e.g. Collins, 1996; Wood, 1989). Thus, it is expected that upward comparison will be positively related to perceived control and job satisfaction, and negatively related to health complaints and occupational burnout. Moreover, because social comparison is related to perceived control (e.g. Major et al., 1991), and perceived control is related to occupational burnout (e.g. Bandura, 1997; Chwalisz et al., 1992), an additional and exploratory goal of the present study was to determine whether the relationship between comparison and burnout can be mediated by the individual's perceived control.

In order to test these predictions, a first cross-sectional study was conducted on a sample of customs officers. Then, a second study using a similar methodology was conducted on a sample of police officers. Customs and police officers are civil servants who must deal with the security-related problems of the general public on a daily basis (e.g. Burke, 1989; Cannizzo & Liu, 1995; Kroes, 1985; Oligny, 1991; Steams & Moore, 1990). Like all security and law-enforcement personnel, they experience a certain level of burnout in their work. The working conditions of customs officers and policemen are difficult. They are similar to those of a variety of populations, for which comparisons with others provide a way to cope with threat (see Buunk et al., 2001; Buunk & Gibbons, 1997). As in such populations, civil servants are likely to compare with others on several attributes to cope with threat. In the present study, we focused on job characteristics (e.g. work environment, physical safety, autonomy, diversity of tasks, and social atmosphere) as dimensions of comparison, because of both their centrality at the workplace and their relevance to occupational identity. Occupational burnout among civil servants was expected to be strongly related to self-comparisons with co-workers on job characteristics, and although exploratory, this relationship was expected to be mediated by the officers' perceived control.

## STUDY 1

### Method

*Participants and Procedure.* The participants were 72 customs officers (53 males and 19 females) from several administrative bodies in France. Among the participants called and asked to participate in a "study about occupational stress," only 22% refused. The average age was 32.9 years ( $SD = 6.64$ , range 22–55) and the mean duration of employment was 8.61 years ( $SD = 5.40$ , range 1–23). The sample consisted of 64 regular customs officers, 6 sergeants, 1 lieutenant, and 1 captain. Among the respondents, 25.2% held a high school diploma, 17.2% were single, 68.4% were married, and 14.4% were divorced, separated, or widowed. All participants were office workers, worked the day shift in urban environments, and were not permitted to use deadly force with a firearm. As part of their daily work, customs officers must attempt to detect illegal activities, drugs, firearms, and other goods. Much of the work they do involves contact with the public.

A questionnaire was filled out during normal working hours, under the supervision of an assistant. Completion time was approximately 30 minutes, and participants were assured of anonymity.

*Measures.* *Social comparison* was measured on a modified version of the scale used by Geurts et al. (1994) composed of 11 items representing various

job characteristics, including (a) work environment (e.g. noise and heat), (b) physical safety (e.g. protection against danger), (c) autonomy and freedom on the job, (d) diversity of tasks, (e) participation in decision making, (f) rewards (e.g. salary and other compensation), (g) prospects for promotion, (h) benefits (e.g. vacation and training opportunities), (i) social atmosphere (contacts with co-workers and direct superiors), (j) supervision (the way one feels treated by superiors), and (k) the work situation in general. For each of the 11 job characteristics, the participants were asked how frequently they compared themselves to other employees who were more or less fortunate than themselves within the organization. They responded on a 5-point scale ranging from 1 = *On this aspect of my job, I frequently compare myself with worse-off employees* to 5 = *On this aspect of my job, I frequently compare myself with better-off employees*. The internal consistency of the scale was good ( $\alpha = .81$ ). These 11 items were chosen because of their lack of controllability. A pre-test was run on five judges taken from the same population and blind to the hypotheses to determine whether the job characteristic could be classified into distinct categories (controllable or uncontrollable). Cohen's kappa revealed a lack of consensus among the judges ( $k = .23$ ). Thus, the job characteristics used in the present study cannot be considered as intrinsically controllable or uncontrollable. Instead, they seem to be dependent upon each individual's subjective sense of personal control.

*Perceived control* was measured with 12 items referring to personal mastery or perceived constraints. Personal mastery pertained to one's sense of efficacy or effectiveness in attaining goals. Perceived constraints pertain to the extent to which one believes there are obstacles or factors beyond one's control that interfere with goal attainment. The personal mastery items were (1) "I can do just about anything I really set my mind to," (2) "When I want to do something, I usually find a way to succeed at it," (3) "Whether or not I am able to get what I want is in my own hands," and (4) "What happens to me in the future mostly depends on me." The perceived constraint items were (1) "Other people determine most of what I can and cannot do," (2) "There is little I can do to change many of the important things in my life," (3) "I often feel helpless in dealing with life's problems," (4) "What happens in my life is often beyond my control," (5) "There are many things that interfere with what I want to do," (6) "I have little control over the things that happen to me," (7) "There is really no way I can solve all the problems I have," and (8) "I sometimes feel I am being pushed around in my life." Responses were given on a 5-point scale (1 = *I strongly disagree*, 5 = *I strongly agree*). The eight perceived constraint items were reverse scored for the statistical analyses. The internal consistency estimate ( $\alpha$  coefficient) of the 12 items taken together was .79. The responses for all items were pooled and averaged to provide a single composite score that ranged from 1.0 to 5.0. Higher scores reflect greater perceived control.

*Job satisfaction* was measured on three items: (1) "I am satisfied with my job," (2) "I find my job very pleasant," and (3) "I am happy to do this job." Responses were given on a 5-point scale ranging from *Not at all true* (1) to *Very true* (5). Internal consistency was good ( $\alpha = .75$ ).

*Health complaints* were assessed in terms of six health problems: extreme tiredness, headache, stomach pains, insomnia, trouble breathing, and difficulty concentrating. The participants had to indicate how often they experienced each one (1 = *Never* to 5 = *Very often*). The internal consistency estimate of the six items taken together was .74.

*Burnout* was measured using a French version of the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981, 1986). This is a 22-item scale which produces three scores: emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items). According to a psychometric study by Girault (1989), the validity and reliability of the French version are comparable to the original MBI values. Some examples of questions on the emotional exhaustion subscale are: "I feel fatigued when I have to get up in the morning to face another day on the job," and "Working directly with people puts too much stress on me." Some examples of questions on the depersonalization subscale are: "I feel some clients blame me for some of their problems," and "I have become more calloused toward people since I took this job." Some examples of questions on the personal accomplishment subscale are: "I feel I have a positive influence on other people's lives through my work," and "I have accomplished many worthwhile things in this job." The questionnaire required the participants to mark how often they experienced each of the situations on a rating scale ranging from 1 (*Never*) to 7 (*Always*). In this study, the internal consistency (Cronbach's  $\alpha$ ) of each of the three subscales was satisfactory: emotional exhaustion ( $\alpha = .81$ ), depersonalization ( $\alpha = .72$ ), and personal accomplishment ( $\alpha = .83$ ). Three separate scores were calculated for each participant by summing their responses on each subscale: an emotional exhaustion score (range 1–63), a depersonalization score (range 1–35), and a personal accomplishment score (range 1–56).

## Results

*Intercorrelations.* Relationships between these factors were analyzed by examining their correlations. This analysis was supplemented by a series of regression analyses in order to test various mediation models. Table 1 presents the Pearson correlation coefficients between the different variables in the study, as well as some descriptive data (means and standard deviations).

As Table 1 shows, the three MBI subscales were partly related to each other. Emotional exhaustion was positively correlated with depersonalization ( $r = .35$ ). However, personal accomplishment was not related to emotional exhaustion or depersonalization ( $r = .03$  and  $r = .14$ , respectively). As predicted,

TABLE 1  
Descriptive Data (Means and Standard Deviations) and Intercorrelations between Perceived Control, Social Comparison, Health Complaints, Satisfaction, and Burnout among Customs Officers

	Mean	SD	1	2	3	4	5	6
1. Perceived control	3.58	0.59						
2. Social comparison <sup>(1)</sup>	3.29	0.62	.30**					
3. Health complaints	2.29	0.65	-.40***	-.21*				
4. Satisfaction	2.91	0.76	.24*	.26**	-.38***			
5. Emotional exhaustion	21.78	8.58	-.31**	-.31**	.61***	-.47***		
6. Depersonalization	12.33	5.43	-.08	-.14	.24*	-.05	.35**	
7. Personal accomplishment	33.85	8.58	.21*	.08	-.13	.28**	.03	.14

<sup>(1)</sup> Higher scores reflect greater frequency of upward comparison; lower scores reflect greater frequency of downward comparison.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 72$ .

social comparison was positively related to perceived control ( $r = .30$ ) and job satisfaction ( $r = .26$ ), and negatively related to health complaints ( $r = -.21$ ) and emotional exhaustion ( $r = -.31$ ). Social comparison was not significantly correlated with depersonalization or personal accomplishment ( $r = -.14$  and  $r = .08$ , respectively). Perceived control was correlated with all variables except depersonalization: the higher the perceived control, the fewer health complaints and the less emotional exhaustion ( $r = -.40$  and  $r = -.31$ , respectively), and the greater the feelings of satisfaction and personal accomplishment ( $r = .24$  and  $r = .21$ , respectively).

An additional, exploratory goal of this study was to find out whether perceived control can be a mediator between social comparison and psychological outcomes such as burnout, health complaints, and job satisfaction. Analyses were conducted to test a set of mediation models.

*Mediation Analyses.* To test a mediation model, Baron and Kenny (1986) suggested computing a series of regressions in which the following conditions should be tested. First, all variables entered into the equations must be correlated. In step 1, the predictor must predict the mediator variable, the predictor must predict the outcome variable, and the mediator variable must predict the outcome variable; in step 2, the effect of the predictor variable on the outcome variable must be eliminated or reduced once the mediator variable is included in the model equation. As Table 1 shows, the five variables were intercorrelated. In the first regression, perceived control was regressed on social comparison; in the second set of regressions, health complaints, emotional exhaustion, and satisfaction (outcome variables) were regressed separately on social comparison (predictor); in the last set,



TABLE 2  
 Mediated Relationship between Social Comparison and Psychological Outcomes  
 (Satisfaction, Health Complaints, and Emotional Exhaustion) via Perceived  
 Control among Customs Officers (Study 1)

<i>Measures</i>	<i>Predictor variables</i>		<i>F</i>	<i>df</i>	<i>R</i> <sup>2</sup>	<i>Adj. R</i> <sup>2</sup>	$\Delta R^2$
	<i>Social Comparison</i> <sup>(1)</sup>	<i>Perceived Control</i>					
Perceived control	.27**		5.32	1	.07	.06	
Satisfaction							
Step 1	.33**		5.17	1	.07	.05	
Step 2	.19	.24*	3.90	2	.10	.07	.02
Health complaints							
Step 1	-.21*		3.12	1	.04	.03	
Step 2	-.10	-.40***	7.47	2	.18	.15	.12
Emotional exhaustion							
Step 1	-.31***		7.73	1	.09	.08	
Step 2	-.24*	-.40***	6.45	2	.16	.13	.05

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

<sup>(1)</sup> Higher scores reflect greater frequency of upward comparison; lower scores reflect greater frequency of downward comparison.

each of these outcome variables was regressed on both social comparison and perceived control (mediator). As can be seen in Table 2, the results of the first regression analysis showed that social comparison had a direct effect on perceived control. The second set of regressions showed that social comparison had a direct effect on satisfaction, health complaints, and emotional exhaustion (step 1). When perceived control and social comparison were simultaneously entered into the regression (step 2), the direct effect of social comparison on satisfaction was no longer significant, nor was its direct effect on health complaints. Nevertheless, the mediator effect of perceived control was less robust for emotional exhaustion because the regression coefficient, although smaller, remained significant ( $\beta = -.24, p < .03$ ).

In sum, the effect of social comparison upon health complaints and satisfaction was mediated by perceived control. However, for unclear reasons, the mediating effect was not as strong between social comparison and emotional exhaustion. To find out whether this pattern of results reflects a significant change in beta following the introduction of the mediator, Sobel's  $z$ -test was performed (Sobel, 1982). Theoretically, an indirect effect is significant at the .05 level if Sobel's  $z$ -test is larger than 1.96 in absolute value, and at the .01 level if it is larger than 2.58 (see Kenny, 1998). In the present study, the indirect effects of social comparison on satisfaction and health complaints were both significant at the .05 level ( $z = 1.98$  and  $z = 2.31$ , respectively).

Additional analyses were conducted to test two alternative mediation models. In the first model, perceived control and social comparison were considered as the independent variable and mediator, respectively. When both variables were simultaneously entered into the regression on step 2, the direct effect of perceived control on psychological outcomes remained significant at the .05 level ( $\beta = .20$  for job satisfaction;  $\beta = -.38$  for health complaints;  $\beta = -.25$  for emotional exhaustion). In the second mediation model, each psychological variable (emotional exhaustion, health complaints, and job satisfaction) was treated separately as an independent variable; social comparison was systematically considered as the mediator and perceived control as the outcome variable. The analyses did not reveal any significant effects, suggesting that emotional exhaustion, health complaints, and job satisfaction do not influence perceived control by way of the social-comparison direction.

These additional results demonstrate that neither perceived control nor psychological variables affected the chosen direction of comparison, and inversely, that participants who frequently chose upward comparison tended to have a high level of perceived control whereas those who preferred downward comparison tended to have a low level of perceived control. Consequently, social comparison in itself does not seem to produce psychological reactions, but the relationship between comparison and those reactions appears to be mediated by the individual's perceived control.<sup>2</sup>

## Discussion

This first cross-sectional study was undertaken in order to examine the relationship between social comparison, perceived control, and psychological outcomes such as occupational burnout, health complaints, and job satisfaction. The study examined this issue in a sample of customs officers. This type of security personnel is known to experience a certain amount of burnout.

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<sup>2</sup> A hierarchical regression analysis was conducted to test a moderator model in which perceived control was treated as a moderator instead of a mediator. First, the social-comparison effect and the perceived control effect (continuous variables) were input into the regression equation. Next, the interaction term was entered. The results yielded a significant joint contribution of the main social-comparison and perceived control effects on job satisfaction,  $R^2 = .14$ ,  $F(2, 71) = 5.52$ ,  $p < .006$ . This effect was clearly the result of the social comparison ( $\beta = .29$ ,  $p < .01$ ): the higher the frequency of upward comparison, the higher the job satisfaction. Entering the two-way interaction into the regression equation did not yield a significant increase in the explained variance,  $R^2 = .15$ ,  $F(3, 71) = 3.87$ ,  $p < .01$ . Similar patterns were observed on the other dependent variables except for the main effects on health complaints and emotional exhaustion ( $R^2 = .18$ ,  $F(2, 71) = 7.61$ ,  $p < .001$  and  $R^2 = .13$ ,  $F(2, 71) = 5.21$ ,  $p < .008$ , respectively). In both cases, these effects were the result of perceived control: the higher the perceived control, the lower the health complaints and the emotional exhaustion ( $\beta = -.38$ ,  $p < .001$  and  $\beta = -.27$ ,  $p < .02$ , respectively).

Indeed, they are public service workers, and as such, frequently have to deal with the problems of the general public. Taken together, the results of this study (although correlational) showed that the customs officers who frequently compared themselves with worse-off employees on job characteristics reported low perceived control and were dissatisfied. Inversely, frequent upward comparisons were related to few health complaints and little emotional exhaustion.

More interestingly, the relationship between social comparisons and the psychological outcomes of interest here was mediated by perceived control. Social comparison direction induced variability in perceived control, which in turn affected psychological reactions. These results suggest that social comparison itself does not produce affective reactions, but that such reactions are determined by the perceived control induced by the social comparison direction. As a whole, those who frequently compare upward seem to generate a higher level of perceived control, and consequently, are more satisfied and feel less stressed at work. The opposite seems to be true for those who frequently compare downward. Because the alternative mediation models did not yield significant results, perceived control can be considered as a mediator between social comparison and psychological outcomes. In other words, it seems that frequent upward comparison produces positive reactions while frequent downward comparison produces negative reactions, and that the relationship between direction of comparison and psychological outcomes is mediated by the individual's perceived level of control. People who frequently compare upward may develop more perceived control and think that their situation can be improved; as a result, they have positive psychological reactions. In contrast, people who frequently compare downward may develop less perceived control and think that their situation cannot be improved; as a result, they have negative psychological reactions. As shown by Helgeson and Mickelson (1995), in threatening situations, upward comparison is related to the self-improvement motive, and we can assume that to satisfy such a motive, individuals need to feel they have control over the situation. In other words, perceived control, a necessary condition for improving oneself, is stronger when individuals compare with more fortunate models, because such models may provide useful information that serves the self-improvement motive.

The above results partially validated our predictions, because only the emotional component of burnout—emotional exhaustion—was affected by social comparison direction and mediated by perceived control. Emotional exhaustion has been considered as the major characteristic of occupational burnout. Because depersonalization and reduced personal accomplishment are not regarded as negative emotions but rather as negative attitudes toward one's clients and oneself, respectively, they are less related to social comparison than emotional exhaustion, a more direct indicator of emotional distress (e.g. Buunk, 1994). This result is consistent with social comparison

studies demonstrating that comparisons with others influence one's emotional reactions to a situation (e.g. Schachter & Singer, 1962).

The second study was conducted to replicate these first results with another, somewhat similar sample of security personnel.

## STUDY 2

The procedure and measures were identical to those used in Study 1. Only the experimental population varied. The participants were 100 police officers (82 males and 18 females) from several districts in France. Among the participants called and asked to participate in a "study about occupational stress," 28% refused. The average age and the mean duration of employment were 34.2 years ( $SD = 6.8$ , range 22–51) and 12.1 years ( $SD = 6.5$ , range 1–29), respectively. The sample consisted of 85 regular police officers, 8 sergeants, 5 lieutenants, and 2 captains. Among the respondents, 22.7% held a high school diploma, 19.6% were single, 65.1% were married, and 15.3% were divorced, separated, or widowed. A large majority of the participants were office workers and worked the day shift (89.7%) in urban environments; a minority worked the night shift (10.3%). Unlike the customs officers, all the police officers were permitted to use deadly force with a firearm to defend their own life or that of another party. Police officers are assigned areas where their job is to maintain public safety and order, and enforce laws and regulations. They also investigate crimes and accidents, arrest criminal suspects, and participate in crime prevention, public information, and safety programs. Police work can be very dangerous and stressful. In addition to the obvious dangers of confrontations with criminals and urban violence, officers need to be constantly alert and ready to cope with a number of stressors (e.g. having a partner killed while on duty, lack of support by the police department).

A questionnaire was filled out under the supervision of an assistant, who emphasized that the data collected would be treated confidentially.

## Results

*Intercorrelations.* As in the first study, relationships between the factors were analyzed by examining correlations. The correlation analysis was supplemented by a series of regression analyses aimed at testing various mediation models. Table 3 gives the Pearson correlation coefficients for the different variables in the study, as well as some descriptive data (means and standard deviations).

As Table 3 shows, the three MBI subscales were partly related to each other. Emotional exhaustion was positively correlated with depersonalization ( $r = .49$ ). However, personal accomplishment was not related to emotional

TABLE 3  
 Descriptive Data (Means and Standard Deviations) and Intercorrelations between Perceived Control, Social Comparison, Health Complaints, Satisfaction, and Burnout among Police Officers

	Mean	SD	1	2	3	4	5	6
1. Perceived control	3.87	0.63						
2. Social comparison <sup>(1)</sup>	2.78	0.66	.30**					
3. Health complaints	2.39	0.64	-.32***	-.03				
4. Satisfaction	2.62	0.64	.48***	.40***	-.24**			
5. Emotional exhaustion	24.48	9.55	-.48***	-.26**	.49***	-.41***		
6. Depersonalization	15.15	6.50	-.40***	-.19*	.36***	-.33***	.49***	
7. Personal accomplishment	38.68	8.02	.23**	.13	-.08	.29**	-.12	-.15

<sup>(1)</sup> Higher scores reflect greater frequency of upward comparison; lower scores reflect greater frequency of downward comparison.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ;  $N = 100$ .

exhaustion or depersonalization ( $r = -.12$  and  $r = -.15$ , respectively). As predicted, social comparison was positively related to perceived control ( $r = .30$ ) and job satisfaction ( $r = .40$ ), and negatively related to emotional exhaustion ( $r = -.26$ ) and depersonalization ( $r = -.19$ ). The correlations between social comparison and personal accomplishment, and between social comparison and health complaints, were nonsignificant ( $r = .13$  and  $r = -.02$ , respectively). Perceived control was correlated with all variables, including depersonalization: the higher the perceived control, the fewer the health complaints ( $r = -.32$ ) and the lower the amount of emotional exhaustion ( $r = -.48$ ) and depersonalization ( $r = -.40$ ), but the greater the feelings of satisfaction and personal accomplishment ( $r = .48$  and  $r = .23$ , respectively). As in Study 1, the additional hypothesis tested was that perceived control is a mediator between social comparison and psychological reactions.

*Mediation Analyses.* A series of regressions were computed, in line with Baron and Kenny’s (1986) suggestions for testing mediation models. Because all variables entered into the equations were correlated (see Table 3), these analyses could legitimately be conducted. As Table 4 shows, the first regression analysis yielded a direct effect of social comparison on perceived control. The second set of regressions showed that social comparison had a direct effect on satisfaction and emotional exhaustion, but not on health complaints (step 1). When perceived control and social comparison were entered simultaneously into the regression (step 2), the direct effect of social comparison on emotional exhaustion was no longer significant ( $\beta = -.13$ , *n.s.*). Finally, the mediating effect of perceived control was less robust for satisfaction ( $\beta = .28^{**}$ ).

TABLE 4  
Mediated Relationship between Social Comparison and Psychological Outcomes  
(Satisfaction, Health Complaints, and Emotional Exhaustion) via Perceived  
Control among Police Officers (Study 2)

<i>Measures</i>	<i>Predictor Variables</i>		<i>F</i>	<i>df</i>	<i>R</i> <sup>2</sup>	<i>Adj. R</i> <sup>2</sup>	$\Delta R^2$
	<i>Social Comparison</i> <sup>(1)</sup>	<i>Perceived Control</i>					
Perceived control	.30**		8.11	1	.07	.07	
Satisfaction							
Step 1	.40***		17.7	1	.15	.14	
Step 2	.28**	.48***	21.4	2	.30	.29	.15
Health complaints							
Step 1	-.03		.08	1	.001	-.009	
Step 2	-.06	-.32**	5.77	2	.10	.08	.09
Emotional exhaustion							
Step 1	-.26**		3.66	1	.04	.03	
Step 2	-.13	-.48***	14.9	2	.24	.22	.19

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

<sup>(1)</sup> Higher scores reflect greater frequency of upward comparison; lower scores reflect greater frequency of downward comparison.

In sum, the effect of social comparison on emotional exhaustion was mediated by perceived control. For unclear reasons, this mediating effect was not as strong between social comparison and satisfaction, and was not found between social comparison and health complaints. As in Study 1, Sobel's  $z$ -test was performed to see whether this pattern of results reflected a significant change in beta following the introduction of the mediator. In the present study, the indirect effect of social comparison was significant at the .01 level for emotional exhaustion ( $z = 2.65$ ) and at the .05 level for satisfaction ( $z = 2.01$ ).<sup>3</sup>

<sup>3</sup> As in Study 1, two alternative mediation models were tested. In the first model, perceived control and social comparison were considered as the independent variable and the mediator, respectively. In this model, when both variables were simultaneously entered into the regression in step 2, the direct effect of perceived control on psychological reactions remained significant at the .05 level ( $\beta = .41$  for satisfaction;  $\beta = -.34$  for health complaints;  $\beta = -.46$  for emotional exhaustion). These results suggest that perceived control does not influence the direction of comparison. In the second model, emotional exhaustion and social comparison were considered as the independent variable and the mediator, respectively; perceived control was treated as the outcome. This mediation analysis did not yield significant results, suggesting that the direction of social comparison is not influenced by emotional exhaustion. Similarly, the results yielded no significant effects when emotional exhaustion was replaced by either job satisfaction or health complaints. Finally, a hierarchical regression analysis was conducted to test the moderator model. The results yielded similar non-significant patterns on each dependent variable.

## GENERAL DISCUSSION

The aim of the cross-sectional studies conducted here was to test the role of social comparisons among people who are victims of occupational stress. Security and law-enforcement personnel such as customs officers and policemen are prone to burnout in their work. Indeed, customs and police officers are civil servants and must deal with stressful problems of the general public on a daily basis (e.g. Cannizzo & Liu, 1995; Burke, 1989; Steams & Moore, 1990).

To date, no evidence had been reported on the relationship between social comparison, occupational burnout, health complaints, and job satisfaction among these groups of security personnel in cross-sectional survey designs. In the present studies, social comparison was expected to be positively correlated with perceived control and job satisfaction, and negatively correlated with health complaints and occupational burnout. As predicted, the results showed that the more frequently the officers compared themselves with better-off employees, the higher their level of satisfaction and the fewer their health complaints and feelings of emotional exhaustion. Inversely, the more frequently they compared themselves with less fortunate employees, the more dissatisfied they were and the more health problems and emotional exhaustion they experienced. Although a serious limitation of cross-sectional survey research is the problem of interpreting causal relationships, we attempted in the present studies to reduce this weakness by performing a set of mediation analyses. No studies have been conducted so far to find out whether perceived control can mediate the relationship between the direction of social comparison and psychological outcomes such as burnout, health complaints, and job satisfaction. Although exploratory, the present studies were a first step in this direction, and the results supported our predictions. It appears that the relationship between social comparisons and psychological reactions is mediated by the individual's perceived control. Upward and downward comparisons affected the officers' perceived control, which in turn affected their psychological outcomes (except on health complaints among police officers in Study 2). Alternative mediation models did not yield significant results, so only perceived control can be regarded as a mediator between social comparison and psychological outcomes.

Taken together, the results of these studies suggest that informal social comparisons at the workplace, which can be seen as a type of vicarious experience according to Bandura's (1986, 1997) Cognitive Social Theory, influence perceived control, and indirectly, occupational burnout and outcomes such as job satisfaction and health complaints. Social comparison itself does not seem to produce psychological reactions, but these reactions are determined by the perceived control generated by the frequency of upward and downward comparisons. However, the predicted effect of social

comparison, and the expected mediation by perceived control, were only observed on one of the three components of burnout, emotional exhaustion. This finding suggests, in line with Schachter's experiments, that social comparison is strongly related to emotions. Indeed, according to Schachter's (1959) extension of social comparison theory, individuals in stressful situations attempt to determine the nature of their emotions by comparing with others. Inversely, comparisons with others influence one's emotional reactions to a situation (Schachter & Singer, 1962). These findings indicate that frequent comparisons with more fortunate others provide useful information in the service of the self-improvement motive; this increases perceived control over the situation, and consequently reduces the emotional component of occupational burnout. In other words, individuals may see upward comparison targets as successful models for improving their emotional state. According to Bandura's Social Cognitive Theory, vicarious experiences influence perceived control and stress. Such experiences are based on the human ability to improve one's situation by observing models. The present research extends vicarious experiences to social comparisons with successful co-workers through everyday informal contacts. The present results suggest that a social comparison experience with more fortunate models improves an individual's emotional state, whereas the same experience with less fortunate models does not.

Finally, although comparisons across the two samples were beyond the scope of the present research, a slight difference between these samples was observed. This difference was in the depersonalization component of burnout: social comparison and perceived control were significantly correlated with depersonalization only among police officers. At least two interpretations might be proposed to explain this difference: the number of participants in each study, and the characteristics of these two security-related occupations. The first explanation is not legitimate because of the large difference in the statistical significance of the correlations and the small difference in the number of participants in the two studies (72 in Study 1 and 100 in Study 2). The second explanation is more plausible. One can assume that police officers are more often victims of occupational burnout than customs officers, and that depersonalization is linked to the comparison direction and perceived control only among the former. More precisely, the less police officers self-compare in the upward direction, the more their attitude towards clients is cynical and the less they believe they have control over the situation. These relationships were not observed among customs officers, probably because they are less affected by this attitudinal component of occupational burnout. The mediation analyses confirmed this interpretation. Indeed, perceived control mediated the relationship between the direction of social comparison and emotional burnout (a negative psychological reaction) but only among police officers. In the same way, perceived



control mediated the relationship between the direction of social comparison and satisfaction (a positive psychological reaction) but only among customs officers. Taken together, these results suggest that customs officers feel less threatened than police officers. The descriptive data reinforce this interpretation in two ways: (1) the scores on the three components of burnout were lower for customs officers than for police officers, and (2) police officers made fewer upward (or more downward) comparisons than customs officers, suggesting that the former feel more threatened than the latter (see Wills, 1981). Moreover, one of the differences between the jobs of the two samples is that, unlike customs officers, police officers are permitted to use deadly force with a firearm. Although speculative, this difference seems to indicate that police officers are more frequently confronted with threatening situations such as urban violence than customs officers. Consequently, feeling threatened, they are more likely to be emotionally sensitive to social comparisons with their fellow workers.

In conclusion, to gain insight into the relationship between social comparison, perceived control, and occupational burnout, further studies could be conducted in a laboratory setting, and inferential statistics could be used instead of correlation analyses. Another approach in future studies could be to use the *social comparison orientation* scale to look at whether the results of the present studies could be replicated and understood in greater depth by introducing this individual-difference variable, which distinguishes people by the frequency at which they engage in social comparison in their daily life (see Buunk et al., 2001; Gibbons & Buunk, 1999; Michinov & Michinov, 2001).

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