

## Health complaints, social comparisons, and absenteeism

SABINE A. GEURTS

Department of Psychology, University of Nijmegen, PO Box 9104, 6500 HE Nijmegen, The Netherlands

BRAM P. BUUNK

Department of Psychology, University of Groningen, Grote Krussstraat 2/1, 9712 TS Groningen, The Netherlands

WILMAR B. SCHAUFELI

Department of Social and Organizational Psychology, University of Utrecht, PO Box 80 140, 3508 TC Utrecht, The Netherlands

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In this study the relationship between health problems and objectively recorded absence frequency is investigated from a social psychological perspective in a prospective design. By employing LISREL, a model is developed (tested and revised) among blue-collar workers in Plant North ( $N = 254$ ) of a metal factory and successfully cross-validated in Plant South ( $N = 199$ ). The results of this study support the assumption that health complaints affect absence frequency through two social comparison processes. First, employees are more inclined to attribute their health complaints to the work environment, the more often they communicate with their colleagues about problems in their work situation. Second, the more employees experience health problems, and the more employees attribute these problems to the work environment, the less well off they feel compared with others outside the company. This unfavourable external comparison results in absences, indicating that absence from work can be interpreted as an attempt by the employee to reduce an inequitable relationship with the company. These results are discussed in the context of theoretical and practical implications.

### 1. Introduction

Illness is widely recognized as the most important cause of absenteeism, accounting for almost two-thirds of all absences from work (Brooke 1986). As a consequence, many absence studies have focused upon the relationship between work-related factors, and mental and physical health problems. Several organizational stressors such as work load and boredom (Hendrix *et al.* 1987) have been found to be related to health problems such as high blood pressure, diseases of the digestive tract, and headaches, tension, depression and fatigue (Brooke 1986, House *et al.* 1979). In general, such health problems are assumed to affect the *ability* to attend the job ('involuntary' absenteeism) (Hendrix *et al.* 1987, Steers and Rhodes 1978). However, on the basis of social comparison theory (Festinger 1954, Wheeler 1991), and particularly on the basis of Schachter's work (Schachter 1959, Schachter and Singer 1962) and attribution theory (Reisenzein 1983, Suls 1977), it can be expected that health complaints also affect the *motivation* to attend the job, resulting in 'voluntary' absenteeism. Social comparisons, particularly comparisons with colleagues, provide information about the possible causes of one's health

complaints. The external attribution of these complaints, that is, the attribution of complaints to the work situation rather than to oneself, is likely to affect one's motivation to attend the job. Particularly in The Netherlands, social security regulations allow for such social psychological and motivational processes to affect absenteeism. In contrast with most other industrialized countries, (1) Dutch employees do not need a medical certificate in order to receive sickness benefits (unless the illness lasts longer than about 2 weeks), and (2) most employees receive full income replacement during their sickness period. As a consequence, the act of reporting sick is rather uncomplicated and primarily reflects a *decision* made by employees themselves. However, the Dutch government's recent 1 January 1994 introduction of the Reduction of Sick Leave Act has far-reaching consequences for employers and possibly for employees as well, making the act of reporting sick more complicated.

By studying the relationship between health complaints and absenteeism from a social psychological perspective, the present study is an attempt to overcome two *theoretical* limitations to absence research. First, most research in this area has not been based on theory, but relies on inductive research strategies in which empirical findings from specific studies are used to construct absence models. The prime objective of such studies is to maximize the variance explained in absenteeism (Martocchio and Harrison 1993). The present authors feel, however, that a theory-driven or deductive approach, in which more general theories are used to generate specific testable hypotheses, may contribute more to our understanding of absenteeism than an inductive approach. Second, absence research has focused too little attention upon social psychological processes that might be relevant. Most research in this area has focused primarily upon organizational and individual determinants of absenteeism. Although some evidence has been provided for the impact of social factors upon the decision to stay away from the job (Steers and Rhodes 1978), the underlying social and cognitive processes still remain unclear. On the other hand, in-depth social psychological analyses of absenteeism have been presented (Chadwick-Jones *et al.* 1982), but so far these approaches lack firm empirical evidence.

The present study also differs in a *methodological* respect from most previous research into absence. In many studies absenteeism has been assessed cross-sectionally by means of self-reports (Brooke and Price 1989), or the absence data were obtained during a period prior to, rather than following, the collection of questionnaire data (Oldham *et al.* 1986). In addition to the fact that the reliability and validity of self-report measures of absenteeism are seriously questioned (Mueller *et al.* 1987), cross-sectional and retrospective designs do not allow us to draw unequivocal causal conclusions.

The present study, conducted in The Netherlands, is designed to overcome these three limitations. First, a theory-guided approach is used to study absenteeism. Second, the study focuses upon social comparison processes that play an intervening role in the relationship between health complaints and subsequent absenteeism. Third, by featuring a prospective design, and by using objective recordings of absences for each employee, the study aims to predict subsequent absenteeism over a longer period. It is assumed that absenteeism is the result of (1) an external attribution of subjective health problems, which is supposed to be based upon social comparison, and (2) feelings of being less well off than others outside the company. This study supplements an earlier paper on the same data set (Geurts *et al.* in press), which focused upon absenteeism as a result of the perception of inequity based upon comparisons with colleagues, and of the adjustment of one's personal absence norm to those of one's colleagues.

### 1.1. *The attribution of health complaints*

In their classic study, Schachter and Singer (1962) demonstrated that individuals who are physiologically aroused without an apparent reason, and thus are uncertain about how to

interpret their arousal, are inclined to take on the emotion of the person they are with (Sullins 1991). According to Schachter and Singer, when persons need to label ambiguous bodily states, they may engage in social comparison and use others as a source of information. Stimulated by Schachter and Singer's (1962) pioneering research, various studies have taken the idea of 'response contagion' a step further, and have shown that, especially under stress, learning that a similar person experiences a certain response may even lead to the adoption of bodily responses, such as dizziness, headache, congested nose or sweaty hands (Pennebaker 1982)

As Suls (1977) pointed out, the early work of Schachter and Singer (1962) was later reinterpreted from the perspective of attribution theory as evidence for the hypothesis that an ambiguous bodily state induces a need to find out what causes this state (Reisenzein 1983). This development clearly demonstrated the link between attribution theory and social comparison theory. Whereas attribution theory discusses the general rules that individuals follow in order to make attributions of causality, social comparison theory considers primarily the use of information from and about others in making such attributions (Goethals and Darley 1977). Kelley's (1967) attribution theory explicitly assumes that individuals search for social comparison information (in addition to other sources of information) in order to make a valid attribution for their responses.

The foregoing suggests that although health complaints may directly influence absenteeism (Figure 1, path 1), social comparison and attribution of health complaints may have an additional impact. It is assumed that when employees experience health complaints without apparent medical causes (e.g. headaches, stomach pain, lower back pain), they may be susceptible to information from their colleagues in attributing these complaints (Cottrell and Epley 1977). Accordingly, it is hypothesized that the more employees experience health complaints, and the more employees communicate with their colleagues about problems in the work situation, the more they will be inclined to attribute their health complaints to the work environment (figure 1, path 2 and 3). In addition, the more employees attribute their health complaints to the work environment, the more they will be inclined to withdraw from the work situation they perceive as being 'unhealthy' (figure 1, path 4).

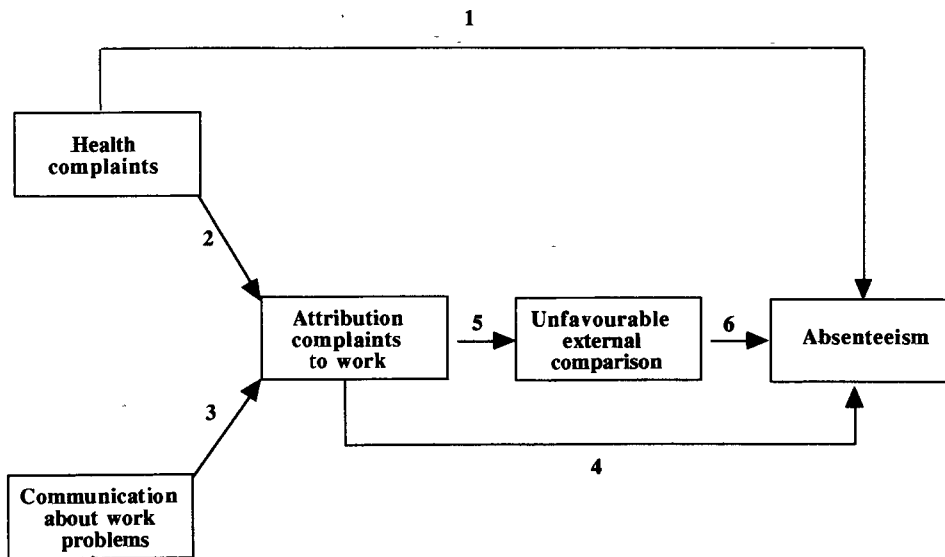


Figure 1 Hypothesized model, showing paths 1–6

### 1.2. *Health complaints and unfavourable external comparisons*

In addition to a direct relationship between the external attribution of health complaints and absence behaviour, it is plausible to assume that feelings of inequity play an intervening role in this relationship. Relative deprivation theory (Crosby 1976) and equity theory (Adams 1965, Walster *et al.* 1978) assume that employees evaluate the fairness of their exchange relationship with the company by comparing their investments or costs (e.g. skills, effort, experience) and rewards or benefits provided to them by the company (e.g. salary, immaterial rewards, promotion prospects, task variety) to those of others (for recent reviews, see Deutsch 1983, Walker and Pettigrew 1984). It is plausible to assume that health complaints that are caused by the company are considered to be so high a cost by the employee that benefits provided by the company are no longer considered as equitable compared to others outside the company. Accordingly, in this study it is hypothesized that the more employees attribute their health complaints to the work environment, the less well off they will feel compared to others outside the company (figure 1, path 5).

Several studies have provided evidence for the impact of perceived inequity based on interpersonal comparisons upon absenteeism (Geurts *et al.* in press). Most studies on this topic have focused on pay comparisons (Dittrich and Carrell 1979, Patchen 1960). Research by Dittrich and Carrell (1979) and by Hendrix and Spencer (1989) has shown that individuals are absent more often, the more underpaid they feel compared to others with similar skills working in other organizations. Research by Oldham *et al.* (1986) did not provide evidence for such a relationship. Instead, their results showed that employees are absent more often, the more disadvantaged they feel about their job complexity (in terms of skill variety, task significance and autonomy) in comparison with referents they selected freely. On the basis of equity theory, relationships between inequity perceptions and subsequent absenteeism are interpreted as an attempt by the employee to reduce the inequitable relationship with the company by staying away from their work, employees reduce their investments and at the same time increase their rewards (they have an extra day off, without financial consequences). Accordingly, in the present study it is assumed that the less well off employees feel in their job as compared to others outside the company, the more often they will be absent (figure 1, path 6).

### 1.3. *Comparative referent choice*

An additional and more exploratory part of this study involves the comparative referents that employees use. Previous research and theorizing suggest that individuals make comparisons using a variety of referents when contrasting job aspects (Adams 1965, Goodman 1974, Oldham *et al.* 1986), and that employee reactions are influenced by the comparative referents that are used (Oldham *et al.* 1986). Therefore, in this study the authors explore (1) which persons outside the company are used for comparison purposes, and (2) whether or not employee reactions are related to the referent choice. With respect to the comparison others, employees were asked to choose among referents that differ, on two dimensions: degree of closeness (family/friends, unknown persons) and type of education/profession (same, different).

### 1.4 *Summary of the research and the theoretical model*

In this study the relationship between subjective health problems and objectively recorded absence frequency is investigated from a social psychological perspective. By featuring a prospective design, the study aims to predict subsequent absences over a period of 1 year. By employing LISREL VII (Jöreskog and Sorbom 1989) in a structural modelling approach, the present study allows for the simultaneous testing of an a priori specified model that comprises

all hypothesized paths (figure 1). To summarize, in addition to health complaints having a direct impact upon absenteeism, two social comparison processes are supposed to play an intervening role. First, the more health complaints employees experience, and the more employees communicate with their colleagues about problems in the work situation, the more they will be inclined to attribute their health complaints to the work environment. Second, this external attribution of health complaints is likely to result directly in absenteeism, as well as indirectly through feelings of inequity compared to others outside the company.

## 2. Method

### 2.1. Subjects and procedure

This study was conducted among two samples of male Dutch blue-collar workers from a metal factory in The Netherlands which mainly produces tin cans and covers. Sample 1, consisting of 254 subjects, was drawn from *Plant North* (87% of the total population). The mean age and duration of employment were 35.06 years (SD = 8.75; range 21–61) and 13.59 years (SD = 8.51; range 0–42) respectively. Sample 2, consisting of 199 subjects, was drawn from *Plant South* (76% of the total population). The mean age and duration of employment were 36.73 years (SD = 10.10 range 20–60) and 14.08 years (SD = 9.38; range 1–39) respectively. In neither plant did participants and non-participants differ significantly with respect to age, duration of employment and prior absence frequency.

Questionnaires were completed under the supervision of two on-site assistants. All subjects participated voluntarily. They were informed of the necessity for the researchers to access individual absence records, but it was strongly emphasized that the collected data would be treated confidentially.

Despite similarities in organizational structure, working conditions and job content, there was a difference between the two plants during the time this study was conducted. Plant North had just finished a period of reorganization, during which about one-quarter of the employees had been forced to resign or had quit voluntarily, the top management had been replaced and some former upgraded functions had been degraded. Plant South stood just at the beginning of a period of reorganization, during which similar measures to those taken in Plant North could be expected. Consequently, it is plausible to assume that employees in Plant South experienced high levels of job insecurity during the time the current study was conducted.

### 2.2. Measures

2.2.1. *Absenteeism* Absence frequency was measured *objectively* from organizational records made in the 12-month period immediately *following* the survey. A period of 1 year was chosen to ensure stability in the absence measure (Hammer and Landau 1981, Ilgen and Hollenback 1977). The absence frequency measure was chosen for theoretical and methodological reasons. Theoretically, absence frequency best represents 'voluntary' absences, i.e. absences in which employees have some freedom of choice in deciding whether or not to stay away from their work (Chadwick-Jones *et al.* 1982). Absence frequency is less affected by involuntary long-term illnesses than are time-lost indices, particularly when the absence frequency measure is corrected for absences of long duration (Hammer and Landau 1981, Martocchio and Harrison 1993, Smulders 1980). Methodologically, absence frequency is more stable and less susceptible to skewness and leptokurtosis than are duration measures, and thus carries fewer problems in statistical analyses (Hammer and Landau 1981). Accordingly, in the authors'

study the frequency of relatively *short* absence spells, in this case absences up to a maximum of 14 calendar days (Smulders 1980), was assessed for each employee. The cut-off point of 14 calendar days was chosen because, as was mentioned earlier, in The Netherlands absence spells lasting less than 2 weeks are not medically certified. Such absences, therefore, primarily reflect a decision made by employees themselves. The stability index was calculated by correlating prior absence frequency (during the year before the survey) with subsequent absence frequency (during the year following the survey) (Steel 1990). The stability index was 0.51 for Plant North and 0.48 for Plant South. Both indices were well within the range of Steel (1990), who found correlations varying from 0.29 to 0.79. The kurtosis and skewness of the absence measure in the current study were respectively 0.86 and 1.02 in Plant North and 0.96 and 0.92 in Plant South, indicating that in both samples a normal distribution was approached.

### 2.3 Survey measures

All survey measures were self-constructed. Table 1 shows the means, standard deviations, and internal consistencies of all variables included in the current study. Respondents in Plant North did not differ significantly from respondents in Plant South on any of the five variables. Table 2 shows the zero-order correlations among all variables.

2.3.1 *Health complaints.* Subjects indicated on a five-point scale, ranging from 'not at all' (1) to 'to a very great extent' (5), to what extent they experienced the following health problems:

- (i) continuous fatigue,
- (ii) lower back pain,
- (iii) headaches,
- (iv) sleeping problems,
- (v) concentration problems,
- (vi) digestive problems,
- (vii) respiration problems

Table 1 Means (*M*), standard deviations (*SD*) and internal consistencies ( $\alpha$ )

Measures	Plant North ( <i>N</i> = 254)			Plant South ( <i>N</i> = 199)			<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	$\alpha$	<i>M</i>	<i>SD</i>	$\alpha$		
Health complaints	2.07	0.79	0.83	2.04	0.70	0.79	0.40	ns
Communication about work problems	3.04	1.18	—	2.90	1.11	—	1.30	ns
Attribution complaints to work	2.54	1.14	—	2.43	1.08	—	1.01	ns
Unfavourable external comparison	2.95	0.59	0.82	2.99	0.58	0.84	-0.73	ns
Absence frequency	1.68	1.43	—	1.87	1.39	—	-1.48	ns

Table 2 Zero-order correlations

Variables	1	2	3	4	5
Health complaints		-0.03	0.44**	0.39**	0.13
Communication about work problems	0.13*		0.16*	0.15*	0.00
Attribution of complaints to work	0.33**	0.25**		0.39**	0.12
Unfavourable external comparison	0.27**	0.21**	0.36**		0.26**
Absence frequency	0.17**	0.21**	0.16*	0.22**	

\* $p < 0.05$ , \*\*  $p < 0.01$

Above the diagonal Plant South (*N* = 199), below the diagonal Plant North (*N* = 254).

The internal consistency was good (Plant North,  $\alpha = 0.83$ ; Plant South,  $\alpha = 0.79$ ). This scale has been adopted from the Dutch VOS-D, a validated job stress questionnaire that is widely used in The Netherlands (Bergers *et al.* 1986).

2.3.2 *Communication about work problems.* On a five-point scale, ranging from 'never' (1) to 'several times a day' (5), subjects indicated how often they and their colleagues communicated about things that were wrong in the work environment.

2.3.3 *Attribution of complaints to work.* Subjects were confronted with the following item: 'As far as you experience health complaints, to what extent are these complaints caused by your work situation?' Subjects responded on a five-point scale, ranging from 'not at all' (1) to 'to a great extent' (5).

2.3.4 *Unfavourable external comparison.* This scale consists of 11 items representing various job aspects, namely:

- (i) working environment (e.g. smell, noise and heat),
- (ii) physical safety (e.g. protection against dangerous machines),
- (iii) autonomy and freedom in the job,
- (iv) variation in the job,
- (v) participation in decision-making,
- (vi) rewards (e.g. salary or other compensations),
- (vii) promotion prospects,
- (viii) social conditions (e.g. vacation and training possibilities),
- (ix) social atmosphere (i.e. contact with colleagues and direct superior),
- (x) supervision (i.e. the way one feels treated by superiors),
- (xi) the work situation in general.

Subjects were asked how well off they considered themselves compared to others outside the organization on each of the 11 job aspects. They responded on a five-point scale, ranging from 'I feel strongly better off' (1) to 'I feel strongly worse off' (5). The internal consistency was good, both in Plant North ( $\alpha = 0.82$ ) and in Plant South ( $\alpha = 0.84$ ). In addition, subjects were retrospectively asked with 'which others' outside the organization had they compared themselves. They could choose among the following five groups: 'friends/family with the same education/profession'; 'friends/family with a different education/profession'; 'unknown persons with the same education/profession'; 'unknown persons with different educations/professions'; 'I compared to others on a varying basis'. As can be noticed, the other people with which subjects compared themselves differ on two dimensions: degree of closeness (family/friends, unknown persons) and type of education/profession (same, different).

#### 2.4 Data analysis

To assess the fit of the proposed model, a confirmatory path analysis was performed, using the maximum likelihood methods of LISREL VII (Jöreskog and Sörbom 1989). As proposed by Kenny (1979), the reliabilities of the measures were used to fix the values of the factor loadings and error variances. For survey measures and the absence measure, the internal consistencies (i.e. Cronbach's alpha) and the stability index were used respectively. The path from any construct to its measured variable (i.e. lambda) equals the square root of the reliability of the measured variable. Consequently, the amount of random error variance ( $\delta$ ) is the quantity 1 minus the reliability. The overall fit of the model to the data was tested by the absolute *chi-square*

goodness-of-fit index. In addition, other LISREL fit indices (i.e. the adjusted-goodness-of-fit index (AGFI) and the root mean square residual (RMSR)) were considered. Since these indices vary with sample size, McDonald and Marsh (1990) recommend the use of the Tucker-Lewis index (TLI) (Tucker and Lewis 1973) for assessing the relative fit of the model, that is, compared to the null-model in which all variables are supposed to be uncorrelated. Values of < 0.90 usually mean that the model can be improved substantially (Bentler and Bonett 1980). LISREL provides information (i.e. modification indices and *t*'s) which can be used to improve the fit of the model: *t*'s are used to eliminate non-significant paths, and modification indices are used to explore the existence of unspecified but significant paths.

### 3. Results

#### 3.1 Model development in Plant North

The goodness-of-fit measures indicated that the proposed model did not fit the data of Plant North very well ( $\chi^2_{(3)} = 17.76$ ,  $p = 0.000$ , AGFI = 0.867, RMSR = 0.066, TLI = 0.54). Therefore, additional steps had to be taken in order to arrive at a more acceptable model. Table 3 shows the goodness-of-fit measures of the null-model ( $M_0$ ) and the a priori specified model ( $M_1$ ), as well as three additional steps.

In the first step ( $M_2$ ), two non-significant relationships were constrained to zero. Contrary to the authors' expectations, it could no longer be assumed that employees are absent more often, the more health complaints they experience (path 1:  $\beta = 0.17$ , ns), and the more they attribute their complaints to the work environment (path 4:  $\beta = 0.05$ , ns). As could be expected, because the paths were non-significant, the fit did not deteriorate significantly ( $\sigma \chi^2_{(2)} = -3.69$ , ns). In step 2, the fit of  $M_3$  improved significantly ( $\sigma \chi^2_{(1)} = 8.01$ ,  $p < 0.01$ ) when a direct relationship was specified between subjective health problems and perceived inequity: the more health complaints employees experienced, the less well off they felt in their job compared to others outside the company. In step 3 ( $M_4$ ), a direct relationship of communication about work problems and absence frequency was unconstrained ( $\sigma \chi^2_{(1)} = 7.34$ ,  $p < 0.01$ ), indicating that employees were absent more often, the more they discussed work problems with their colleagues. These steps resulted in a good fitting model ( $\chi^2_{(3)} = 6.10$ ,  $p = 0.107$ , AGFI = 0.952, RMSR = 0.036, TLI = 0.90). Figure 2 shows the standardized regression coefficients of the final model in Plant North.

In this model, most hypothesized paths appeared to be significant. The more employees experienced health complaints (path 2:  $\beta = 0.33$ ,  $p < 0.001$ ), and the more employees communicated with their colleagues about work problems (path 3:  $\beta = 0.20$ ,  $p < 0.01$ ), the more they perceived their health complaints to be caused by the work situation. The more

Table 3 Model development in Plant North ( $N = 254$ )

	$\chi^2$	df	<i>p</i>	AGFI	RMSR	TLI
$M_0$	117.12	10	0.000	0.716	0.197	—
$M_1$	17.75	3	0.000	0.867	0.066	0.54
$M_2$	21.45	5	0.001	0.907	0.079	0.69
$M_3$	13.44	4	0.009	0.926	0.061	0.78
$M_4$	6.10	3	0.107	0.952	0.036	0.90

For  $M_0$ – $M_4$ , see text.

$\chi^2$ , chi-square goodness-of-fit index, AGFI, adjusted-goodness-of-fit index, RMSR, root mean square residual, TLI, Tucker-Lewis index.



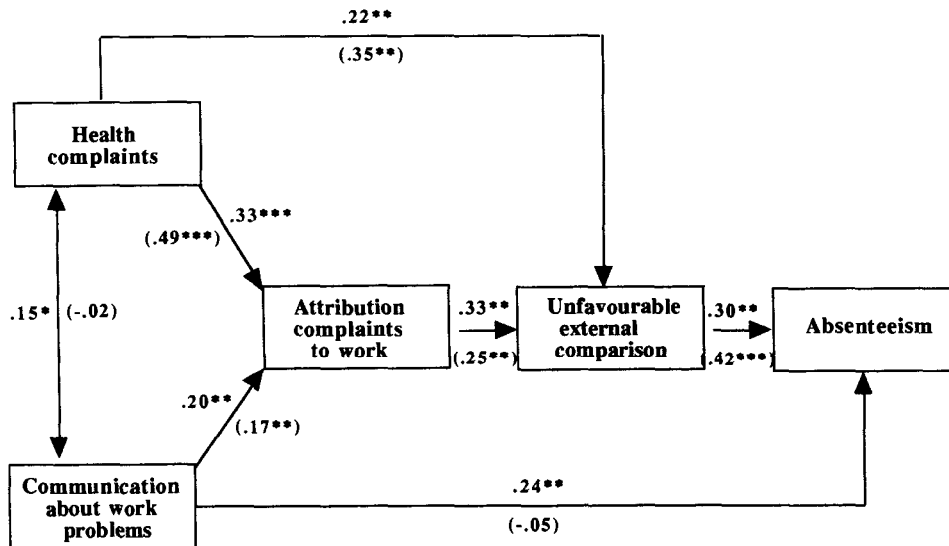


Figure 2 The final model in Plant North ( $N=254$ ) and in Plant South ( $N=199$ , shown in parentheses), showing the standardized regression coefficients \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

employees attributed their health complaints externally, the more disadvantaged they felt in their job outcomes compared to others outside the company (path 5  $\beta = 0.33$ ,  $p < 0.01$ ). This unfavourable external comparison was directly related to absenteeism (path 6:  $\beta = 0.30$ ,  $p < 0.01$ ). The results also showed that two additional paths were significant. First, health complaints were directly related to perceived inequity, independent of the attribution of the complaints ( $\beta = 0.22$ ,  $p < 0.01$ ). Second, communication about work problems was directly related to absenteeism ( $\beta = 0.24$ ,  $p < 0.01$ ). The covariance between communication about work problems and health complaints was significant ( $\psi = 0.15$ ,  $p < 0.05$ ). The final model explained 16.2% of the variance in absence frequency in Plant North.

### 3.2 Cross-validation of the final model in Plant South

In accordance with Bollen (1989), a *two-step* approach was used to test whether or not the empirical model of Plant North fitted the data of Plant South as well. In the first step, the previous structural equation model was tested, without constraining the standardized regression coefficients to be similar to those in Plant North. Thus, the *model structure* was tested, without paying attention to similarity in parameter values. The goodness-of-fit measures indicated that the structural empirical model of Plant North fitted the data of Plant South quite well ( $\chi^2_{(3)} = 4.06$ ,  $p = 0.255$ , AGFI = 0.960, RMSR = 0.32, TLI = 0.97). The model explained 17.7% of the variance in absenteeism in Plant South.

In the second step, the structural equation model was tested, constraining the parameter values to be similar to those in Plant North. Thus, not only was the model structure tested, but also the *similarity in parameter values*. The goodness-of-fit measures indicated however, that the parameter values in Plant North did *not* fit the data of Plant South ( $\chi^2_{(10)} = 25.29$ ,  $p = 0.005$ , AGFI = 0.929, RMSR = 0.085, TLI = 0.85). Thus, although the model structure was quite similar in the two plants, the parameter values were not.

Figure 2 shows in parentheses the standardized regression coefficients of the empirical

model in Plant South. As is apparent from this figure, five of the six paths that were significant in Plant North were also significant in Plant South. Employees were absent more often the less well off they felt in their job outcomes, compared to others outside the company ( $\beta = (0.42), p < 0.001$ ). This perception of inequity was related to health complaints directly ( $\beta = (0.35), p < 0.01$ ), as well as indirectly through an external attribution of the complaints ( $\beta = (0.49), p < 0.001$ ; and  $\beta = (0.25), p < 0.01$ ). Employees were more inclined to attribute their health complaints to their work situation, the more they communicated with their colleagues about work problems ( $\beta = (0.17), p < 0.01$ ). In contrast to the results in Plant North, the covariance between communication about work problems and health complaints was not significant in Plant South ( $\psi = (-0.02), ns$ ). Moreover, the largest difference in parameter value between the two plants concerns the relationship between communication about work problems and absenteeism: whereas this relationship was highly significant in Plant North ( $\beta = 0.24, p < 0.01$ ), it was not significant in Plant South ( $\beta = (-0.05), ns$ ).

To find out whether this latter difference in parameter value was primarily responsible for the unsuccessful validation of parameter values, the structural equation model was tested, constraining all parameter values to be similar to those in Plant North, with the exception of the relationship between communication with colleagues and absenteeism (this relationship was constrained to zero). The goodness-of-fit measures indicated that the parameter values of Plant North did fit the data of Plant South quite well ( $\chi^2_{(10)} = 17.70, p = 0.060, AGFI = 0.951, RMSR = 0.072, TLI = 0.93$ ). Thus, the unsuccessful validation of parameter values was for the most part based upon the difference between the two plants with respect to the relationship between communication about work problems and absenteeism.

To summarize, the results in both plants indicated that health complaints were not—as was hypothesized—related to absenteeism directly, but indirectly through social comparisons. The more employees communicated with their colleagues about work problems the more they attributed their health complaints to the company, resulting in feelings of undercompensation compared with others outside the company. This unfavourable external comparison resulted directly in absenteeism. In Plant North, communication with colleagues about work problems also resulted directly in absenteeism.

### 3.3 Comparative referent choice

In addition, an investigation was made into which persons outside the company were used as comparative referents, and whether employee reactions were related to the referents that were chosen. A Kolmogorov–Smirnov (KS) test showed that the distribution in referent choice was similar in both plants (KS  $Z = 0.583, ns$ ). The group of *unknown persons* with a *different* education/profession was least often chosen for comparison purposes (Plant North: 7.5%,  $N = 19$ ; Plant South: 8.2%,  $N = 16$ ), followed by the group of unknown persons with the same education/profession (Plant North: 12.3%,  $N = 31$ ; Plant South: 17.8%,  $N = 35$ , respectively). In both plants, friends/family with a different education/profession were chosen most often for comparison purposes (Plant North: 32.8%,  $N = 83$ ; Plant South: 32.7%,  $N = 64$ ), followed by friends/family with the same education/profession (Plant North: 25.3%,  $N = 64$ ; Plant South: 19.9%,  $N = 39$ ). Finally, 22.1% ( $N = 56$ ) of Plant North and 21.4% ( $N = 41$ ) of Plant South did not use just one single group to compare with on the various job aspects, but compared with others on a varying basis. To summarize, the results of both plants generally indicated that the closer were the subjects' referents, the more often they were chosen for comparison purposes. Family and friends with a different education/profession were more often chosen than family and friends with the same education/profession. This was probably due to the fact that friends and family in this latter category were less available.

To examine whether the subjects' referent choice was related to any of the variables under study, a multivariate analysis of variance (MANOVA) was performed, with the referent choice as an independent variable, and all five variables of the empirical model (figure 2) as dependent variables. The results showed that the five groups that differed in their referent choice did not significantly differ on any of the variables under study (multivariate Plant North:  $F_{(20,988)} = 0.80$ , ns; Plant South:  $F_{(20,760)} = 0.79$ , ns)

#### 4. Discussion

The present research was an attempt to make a theoretical and an empirical contribution to absence research by studying the relationship between subjective health problems and objectively recorded absence frequency from a social psychological perspective. It was expected that, in addition to a direct relationship between health complaints and absenteeism, there would be some indirect linkages through two social comparison processes. It was assumed that absenteeism was the result of (1) the attribution of one's health complaints to the work environment, which is based upon communication with colleagues, and (2) the perception that one is less well off than others outside the company.

The results in both plants failed to show a significant direct relationship between health complaints and absence frequency. Health complaints appeared to affect absence frequency only indirectly, through social comparisons. These results support the authors' assumption that the absence measure used in the current study is an indicator of 'voluntary' absences (i.e. absences that are more or less under the control of the employee), rather than of 'involuntary' absences (i.e. absences beyond one's control).

The results for both plants showed that the more employees experienced health complaints, and the more they communicated with their colleagues about problems in the work situation, the more likely they were to attribute their complaints to the work environment. These results support the authors' assumption that employees used others as a source of information in order to find out the cause of their health complaints (Cottrell and Epley 1977). This external attribution of complaints did not, however, play the expected mediating role between health problems and absenteeism in either plant. Rather than being directly related to absenteeism, the attribution of health complaints to the work situation appeared to be indirectly related to absenteeism, through the perception of inequity compared to others outside the company. The results in both plants showed that the more employees perceived their health complaints to be caused by their work situation, the less well off they felt compared to others outside the company. Moreover, health complaints were directly related to the perception of inequity, indicating that the more health complaints employees experienced, the more disadvantaged they felt compared to others (independent of their attribution of the complaints). These results suggest that health complaints, especially when these complaints are caused by the work environment, are considered to be so high a cost or investment by the employee that the benefits provided by the company are no longer considered equitable. The results in both plants showed further that the more inequitable employees perceived their job outcomes to be, as compared to others outside the company, the more often they were absent, indicating that absence from work can be interpreted as an attempt by the employee to reduce the inequitable relationship with the company. These results suggest that future research on inequity and absenteeism that takes subjective health problems into account, may enhance our understanding of absenteeism as a means of restoring equity.

In addition, in Plant North evidence was found for a direct positive relationship between communication with colleagues and absenteeism, suggesting that the content of such communications directly motivated employees to stay away from their work. Moreover, in

Plant North communication with colleagues was accompanied by health problems, suggesting that health complaints might have been a topic of conversations and/or that some process of 'response contagion' might have taken place: conversations with colleagues about work and associated health problems might even have induced physical complaints among employees, such as headaches, sleeping problems or fatigue. In fact, several studies have shown that social information may lead to the adoption of physical symptoms (Colligan 1985, Pennebaker 1982). However, as the content of the communication was not assessed in the present study, an issue for future research would therefore be to examine in greater detail what employees and their colleagues discuss at work.

In contrast to the results in Plant North, the results in Plant South failed to show significant relationships between communication with colleagues on the one hand, and health complaints and absenteeism on the other. These differences might be explained by higher levels of *job insecurity* among employees in Plant South, compared to employees in Plant North. As was mentioned earlier, employees in Plant South had every reason to be concerned about keeping their jobs because of the ongoing reorganization. In contrast, employees in Plant North would have no such worry, because the reorganization had already been completed. An overview of job insecurity literature by Jacobson and Hartley (1991) reveals that employees respond to job insecurity by psychological withdrawal (that is, decreased organizational commitment and job involvement), as well as by behavioural withdrawal from the job (absenteeism and quitting). In addition, at the level of intra-group processes, job insecurity is expected to reduce group cohesion, because 'declining resources, including jobs, in the organization may increase competitive pressures' (Hartley 1991, p 118). Both psychological withdrawal (also referred to as 'avoidance') and lower group cohesion as consequences of low job security, might explain why communications with colleagues were *not* related to health complaints and absence behaviour in Plant South. Van Vuuren *et al* (1991) showed that employees with high levels of job insecurity do discuss the situation of the company and thus do not deny the problem, but, at the same time, lose interest in the situation of their company.

In exploring which others are used as comparative referents, the results in both plants showed that family and friends were more often chosen for comparison purposes than were unknown persons. This finding is in line with social comparison theory that assumes that persons prefer comparisons to others that are similar on the comparison dimension or on attributes related to the comparison issue, because such comparisons in particular provide useful information (Festinger 1954, Goethals and Darley 1977, Wood 1989). The results showed that employees who differed in their comparative referent choice did not differ significantly on any of the measures under study. Accordingly, it can be concluded that the comparative referent choice does not influence employee reactions.

To summarize, the results of these studies suggest that health complaints affected absenteeism through two social comparison processes. Employees seemed to attribute their health complaints more strongly to the work environment, the more they communicated with their colleagues about work problems. This external attribution, as well as the subjective health problems, was associated with the perception of being less well off than others outside the company. This perception directly resulted in being absent, suggesting a behavioural attempt by the employee to restore an equitable relationship with the company. In Plant North, communication with colleagues about work problems also resulted directly in absenteeism.

The present study has some limitations. First, although the study features a prospective design, the predictors of absenteeism were assessed cross-sectionally. Therefore, the causal direction of the relationships among these variables cannot be disentangled. A longitudinal design in which both dependent and independent variables are measured more than once should be employed to provide additional clarity about these points. Second, several steps were

taken in order to arrive at a properly fitting model. Therefore, the possibility of chance capitalization cannot be completely ruled out, although the rather successful cross-validation of the empirical model was a first test of the robustness of the relationships among the variables. Third, some caution must be taken in generalizing the results of this research to employees in other organizations or professions. Not only were the results based upon homogeneous samples, but these samples were also drawn from organizations that were undergoing or had undergone major reorganization. We cannot know the exact impact of these factors on the present research.

Despite these limitations, the final model explains about 16% of absence frequency in Plant North, and approximately 18% of absence frequency in Plant South. These percentages are quite satisfactory, when compared to other studies that explain up to 20–25% by employing large and heterogeneous sets of variables (Schalk 1989), and by measuring absences by means of self-reports (Brooke and Price 1989). Hence, the authors' results illustrate how promising social comparison theory can be for our understanding of the impact of health complaints upon absenteeism.

The authors would like to conclude with some practical implications that can be inferred from the results of the present study. First, the results showed that *communication with colleagues* about work problems had a unfavourable impact upon absenteeism, either directly or indirectly through an external attribution of health complaints and feelings of undercompensation. Accordingly, communication between superiors and employees should be improved. On the one hand, this requires a well-developed communication structure that provides for regular and formal meetings with superiors. In formal staff meetings, work problems and feeling of inequity can be discussed and effectively dealt with by superiors. Naturally, this requires a management that is responsive to distress among employees and has the ability and authority to resolve the problems that are brought to their attention by the employees. Therefore, as also suggested by Maes *et al.* (1992), superiors should develop a more worker-oriented and participative leadership style, rather than the often present work-oriented and authoritative leadership style. Several studies have provided evidence for a favourable impact of a considerate and participative leadership style on absenteeism (Johns 1978, Tharenou 1993, Wexley and Nemeroff 1975). Second, the results suggest that health problems may influence absenteeism not only directly, as is well established, but also indirectly through social psychological processes. Therefore, also because of these indirect linkages, it seems important to protect employees as much as possible from threats to health.

In promoting and protecting the health and wellbeing of employees, two approaches are useful. The most obvious approach is to improve working and social conditions by identifying and eliminating the major job stressors that affect wellbeing, health and safety of employees. This so-called organizational approach should be accompanied by a more individual approach aimed at the improvement of the resistance of employees to health risks. In The Netherlands, for example, quite positive results among blue- and white-collar workers have been obtained by employee fitness programmes (Kerr and Vos 1993, Maes *et al.* 1992). Not only were participation rates consistently high, reflecting a high level of interest on the part of the employees, there was also a significant favourable impact upon health and absenteeism.

To sum up, absenteeism can be reduced by (1) reducing negative communication by providing formal communication channels, (2) developing more considerate and participative leadership styles, and (3) counteracting health problems by using an individual and an organizational approach. Moreover, these suggestions may also be perceived as being rewarding and thus may reduce absences by reducing the perceived inequitable relationship with the company. All in all, the expected reduction in absenteeism resulting from the above-mentioned interventions seems to be a tangible pay-off for the efforts taken.

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