Correlations between absenteeism and work attitudes such as job satisfaction have often been found to be disappointingly weak. As prior work reveals, this might be due to ignoring interactive effects of attitudes with different attitude targets (e.g. job involvement and organizational commitment). Drawing on basic principles in personality research and insights about the situational variability of job satisfaction judgments, we proposed that similar interactions should be present also for attitudes with the same target. More specifically, it was predicted that job involvement affects absenteeism more if job satisfaction is low as this indicates a situation with weak constraints. Both attitudes were assessed in a sample of 436 employees working in a large civil service organization, and two indexes of absence data (frequency and time lost) were drawn from personnel records covering a 12-month period following the survey. Whereas simple correlations were not significant, a moderated regression documented that the hypothesized interaction was significant for both indicators of absence behaviour. As a range of controls (e.g. age, gender, job level) were accounted for, these findings lend strong support to the importance of this new, specific form of attitude interaction. Thus, we encourage researchers not only to consider interactions of attitudes with a different focus (e.g. job vs. organization) but also interactions between job involvement and job satisfaction as this will yield new insights into the complex function of attitudes in influencing absenteeism.

‘Taking a sickie’ is a very common phenomenon in organizations. Recent evidence from the UK, for example, shows that sickness absence accounts for 4% of working time and...
costs the UK economy 10–12 billion pounds annually (CBI, 2004). It is little wonder, therefore, that absence is cited among the top three concerns of HR professionals. In a recent survey of management policy and practice linked with absence from work (CIPD, 2004), most employers (84%) reported that they seek to reduce these figures by interventions that improve work-related employee attitudes such as job satisfaction, job involvement or organizational commitment. In support of this idea, prior research has indeed documented that these work attitudes are negatively correlated with absence from work (Johns, 1997). In a meta-analysis of the available literature, Hackett (1989) found a relatively small mean correlation of $r = -0.23$ between general job satisfaction and time lost measures of absence. Moreover, Harrison and Martocchio (1998) reported that corresponding correlations for job involvement - defined as the extent to which an individual identifies psychologically with his/her job - are even lower with $r = -0.14$. For organizational commitment, findings are very similar (e.g. $r = -0.15$ in the meta-analysis of Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). These low correlations obviously contradict common assumptions regarding the impact of work attitudes as substantial predictors of withdrawal behaviour (CIPD, 2004). So why do these attitude concepts seem to have so little impact? Our study aims to explore this question using a large sample of employees working in a public organization.

To date, a number of explanations have been suggested for the findings reported above. For example, it has been proposed that range restrictions in the criterion data (low base rate, non-normal distributions of absence data) are responsible for weak relationships (Johns, 1991; Steel, 2003). Moreover, it is often argued that absence measures do not differentiate between voluntary absence (e.g. absence due to low work motivation, i.e. when employees 'take a sickie') and involuntary absence (e.g. absence due to genuine illness). However, employees' work attitudes should primarily affect voluntary behaviour (Sagie, 1998; see Steel, 2003 for a recent discerning discussion of this issue). In this paper, we tested a third explanation that was first proposed by Blau and Boal (1987). These authors suggested that simple attitude–behaviour correlations often will underestimate the importance of attitudes because absence behaviour is best explained by looking at interactions between central work attitudes.

Blau and Boal (1987) elaborated this basic idea by presenting a conceptual model of how job involvement might interact with organizational commitment to affect absence behaviour and turnover. In this model, they assume that different levels and forms of absenteeism result from a combination of both attitudes. Let us briefly consider the four combinations of high and low values of both work attitudes with respect to their impact on absenteeism. First, absence for individuals high on both variables (these persons are called 'institutional stars') is expected to be a rare event and mainly owing to genuine illness. The reason for this assumption is that these persons are highly motivated to be at work because they value both their job and being part of their organization. Individuals with high job involvement and low organizational commitment ('lone wolves') should be mainly absent for problems linked to their immediate work environment and career enhancing purposes whereas employees with low job involvement and high organizational commitment (so-called 'corporate citizens') value their co-workers and strongly identify with organizational goals. These individuals are most sensitive to norms and absence climates and, accordingly, are mainly absent from work in accordance with organization's legitimate absence rules. Finally, incidents of absence for individuals low on both job involvement and organizational commitment ('apathetic employees') are likely to be highest compared with all other groups. These employees are absent in the sense that they take every chance to withdraw from work wherever this is not penalized...
by organizational policies. In summary, this model predicts that the combination of work attitudes with different attitude targets (job vs. organization) might be important in at least two different ways. First, the combination of attitudes can have an impact on mean differences in absence behaviour as high/high individuals should be typically less absent from work than low/low individuals in many situations. Second, combinations of attitudes are systematically linked with specific forms of absenteeism (sickness, career enhancing, normative and calculative absence). Therefore, it can be expected that – depending on the specific composition of a sample or depending on the specific organization under investigation - some combinations of attitudes are more or less important in predicting absence from work.

There are a few studies that have examined the importance of such interactions in predicting absence behaviour in organizations and we will now briefly summarize this work. Blau (1986) confirmed in a study on nurses that interactions between job involvement and organizational commitment are indeed significant predictors for indicators of unauthorized lateness and unauthorized absence. For both absence indicators it was found that particularly those nurses in the low/low condition had the highest absence. Mathieu and Kohler (1990) tried to replicate this result in a study with 192 bus drivers from a large public authority in the USA. They also found a significant interaction between organizational commitment and job involvement for an indicator of voluntary absence. Contrary to expectations, this interaction, however, was disordinal. This means, no significant main effect of independent variables on dependent variables exists and the regression lines cross over within the range of scale values (for a detailed discussion regarding the distinction between disordinal and ordinal forms of interactions, see Aiken & West, 1991, p. 22f). As hypothesized, lowest absence was found among bus drivers who expressed both high job involvement and high organizational commitment. However, drivers with low organizational commitment and high job involvement exhibited the highest absence.

The most recent empirical study was conducted by Sagie (1998). He adopted the interaction hypothesis for analysing the potential interplay of job satisfaction and organizational commitment. In reviewing the available evidence he concludes (p. 139) that voluntary absences of a highly satisfied individual are not expected to further decrease as organizational commitment increases, due to a threshold effect (or range restriction . . .). Similarly, a highly committed worker is supposed to be intentionally absent from work only rarely, so there is not much room for a further decrease in his or her voluntary absence (e.g. vacation) due to higher levels of job satisfaction. Consequently, the interaction between the two attitudes is likely to have a significant positive effect on absence. In other words, the total negative effect of the two related attitudes on absence is lower than the sum of their negative individual effects.

Sagie tested this hypothesis in a sample of 140 employees working in a municipality in Israel and showed that the proposed interaction was, as expected, only significant for indicators of voluntary absence from work. In order to clarify the nature of this interaction Sagie (1998) used median split to divide the sample into two groups (low vs. high job satisfaction) and then regressed voluntary absence onto respondents’ organizational commitment. He found that the slope of the regression line for the low satisfaction group was steeper than the line for the high satisfaction group. Thus, the importance of organizational commitment for predicting voluntary absence from work was higher if job satisfaction of employees was low. The plot of the regression
again suggested a disordinal interaction as regression lines crossed over (employees with low satisfaction and low commitment had the highest absence rate but lowest absence was found among employees with high commitment and low job satisfaction).

Taken together, this pattern of findings illustrates that analysing the combination of two important work attitudes with different attitude targets (job vs. organization) is fruitful as this might reveal both an effect of attitudes on the level of absenteeism (e.g. when high/high individuals are less absent from work than low/low individuals, i.e. an ordinal interaction) and an effect of attitudes on the form of absenteeism most relevant in the specific organization under investigation (e.g. the combination of attitudes indicates which motivational forces mainly underlie absence behaviour in a specific sample, i.e. a disordinal interaction). However, in light of the fact that the three studies summarized above differ with respect to a range of factors (e.g. samples, sample sizes, work attitudes, correlations between work attitudes, etc.), one needs to be cautious in drawing firm conclusions about the precise nature and strength of these specific attitude interactions. A further reason why we believe that additional empirical tests with respect to the importance of attitude interactions are warranted is the following. In all three studies described above no simple slope analyses, as suggested by Aiken and West (1991), were conducted. Thus, it is not clear whether both regression lines that underlie a significant interaction are substantial in the sense that they represent a significant relationship on their own.

The main purpose of our research, therefore, was to collect more empirical evidence for the importance and nature of interactive attitude effects to explain absenteeism in organizations. More specifically, our research was designed to extend this basic approach by analysing a combination of work attitudes that differs from the attitudes prior research has focused on, namely job satisfaction and job involvement. Both attitudes have the same attitude focus – the job. Thus, the theory developed by Blau and Boal (1987) and the model of Sagie (1998) cannot be applied to derive specific predictions with respect to the interaction between these attitudes. In view of potential range restrictions in absence behaviour that both Blau and Boal and Sagie emphasize, it might be argued, however, that individuals with high job satisfaction and high job involvement are more motivated at work and therefore are less absent than lowly motivated employees (e.g. low/low employees). Thus, the combination of these two attitudes might affect the level of absenteeism solely because of range restrictions (e.g. an ordinal interaction is found). This might indeed be possible. However, based on the theoretical argument presented below, we suggest that job involvement and job satisfaction should interact in a disordinal way.

This prediction is based on (1) basic insights from personality research regarding the difference between ‘strong’ and ‘weak’ situations (Mischel, 1977, 2004) and (2) findings about the remarkable situational variability of job satisfaction judgments (Locke, 1976; Weiss, 2002). In personality research it is a well-established fact that understanding behaviour requires consideration of both individuals’ perceptions of the situation and their personality characteristics (Mischel, 2004). A further important insight with respect to the interplay of these variables is the following. Personality is more likely to influence behaviour when a situation is ‘weaker’, i.e. less consistently perceived, versus ‘stronger’ (more uniformly perceived). If we apply this general logic to explaining absenteeism at work, job satisfaction seems to be an ideal candidate to operationalize people’s perceptions of situational variables at work. With its focus on various job aspects such as pay, promotions, co-workers and supervision, job satisfaction is
characterized as an attitude with a clear situational focus (Locke, 1976, p. 1300). This proposition is also corroborated by recent studies analysing the impact of various events at work on well-being. In this research, it was consistently found that specific events at work have an impact on how people feel at work and this, in turn, determines job satisfaction (see Wegge, van Dick, Fisher, West, & Dawson, 2006; Weiss, 2002; Weiss & Cropanzano, 1996). Job involvement, on the other hand, measures the importance of the job to one’s self-image (Kanungo, 1982) and therefore represents more stable personality differences that are less context-specific. For employees with higher job involvement their work in general is more critical to how they feel about themselves. Thus, job satisfaction represents the ‘situational variable’ and job involvement represents ‘personality’ in our reasoning. Accordingly, it can be expected that both variables interact. If job satisfaction is low (representing a weak situation), then one’s job involvement should have a significant negative impact on absence behaviour. However, if job satisfaction is high such a strong situation will overwhelm any job involvement impact on absence behaviour. This leads to the hypothesis that job satisfaction will moderate the relationship between job involvement and absenteeism. More specifically, job involvement has a strong negative relation to absenteeism when job satisfaction is low but job involvement will be unrelated to absenteeism when job satisfaction is high.

**Method**

**Sample and procedure**

The study was carried out in a large civil service organization of a federal state in Germany with the purpose of analysing stress and well-being of employees in the realm of administrative work. After gaining approval from management, all employees of the organization were asked to participate. A satisfactory response rate of 81% was achieved with 498 employees voluntarily completing a questionnaire that included the scales described below. Questionnaires were distributed at the workplace during working hours. All participants were assured that their responses would remain confidential and the matching of responses with individual absence data was made possible through an individual code number that participants solely told researchers and that remained in the hands of researchers. During the time period of collecting absence data in the year following the survey, 62 of these 498 employees left their office1 to work at another place in this organization and were therefore not considered for further analyses. The remaining sample of 436 participants comprised 65.6% women and 73.3% full-time employees. The age of participants ranged from 20 to 60 years ($M = 36.96, SD = 8.86$). The mean for organizational tenure was $M = 16.71$ years ($SD = 9.43$). As institutional absence control policies can have a substantial impact on employee absenteeism (Nicholson & Johns, 1985; Steel, 2003), it should be further noted that in this public organization German state regulations were applied. Thus, all employees have to call in sick the first day. A sickness-certificate issued by a doctor, however, has to be presented in order to get the regular salary (e.g. sick-benefits) only if an absence period comprises more than 2 days.

1 Those who left the office were significantly younger ($t = -2.23, p < .05$), worked more full-time ($t = 4.53, p < .01$) and had a shorter average tenure ($t = -3.69, p < .01$) than those who stayed. This pattern of changes is consistent with the programme for career development applied in this organization as this programme mainly requires younger, full-time employed servants to change the specific site of work for their career development.
Questionnaire

The survey included items regarding biographical data and the job level of employees. Each respondent indicated his/her age (in years), the tenure in the administration (in years), gender, the work status (part-time vs. full-time) and the job level (low, high, higher service grade, respectively). Job satisfaction was assessed with Hackman and Oldham's (1975) five-item job satisfaction scale (e.g. 'In general, I am satisfied with my job'). The internal consistency (Cronbach's alpha) of this scale in the present sample was .75. For measuring job involvement we followed the advice of Blau and Boal (1987, p. 292) and applied Kanungo's (1982) 10-item scale (sample items; 'My work means everything to me', 'Most of my life goals have to do with my work', \( \alpha = .86 \)). Both instruments were translated into German and administered providing seven-point Likert response scales with anchors ranging from 1 (strongly disagree) to 7 (strongly agree). Although job satisfaction and job involvement are usually positively correlated, Brooke, Russell, and Price (1988) as well as Mathieu and Farr (1991) and Moser and Schuler (2004) have demonstrated that both variables are theoretically and empirically distinguishable. We carried out both exploratory and confirmatory factor analyses to investigate whether the two concepts were really distinct in the present sample. The exploratory factor analysis (principal components with varimax rotation) clearly revealed two factors (eigenvalues 5.1 and 2.1, respectively; explained variance 34% and 14%, respectively), with substantial loadings (>.45) of all satisfaction items on the first factor and of all involvement items on the second factor. A third factor with an eigenvalue of 1.2 only explained 8% of the variation and did not make theoretical sense. Moreover, the factor-scree plot clearly suggested the two-factor solution as appropriate. These results were confirmed by a series of confirmatory factor analyses showing that the two-factor correlated model (\( \chi^2 = 319.63, df = 81, CFI = .90, RMSEA = .08 \); correlation between latent factors: \( r = .44, p < .01 \)) fit significantly better than either the unidimensional (\( \chi^2 = 912.23, df = 82, CFI = .64, RMSEA = .15 \); \( \Delta \chi^2 = 592.6, df = 1, p < .01 \)) or the two-factor orthogonal model (\( \chi^2 = 395.30, df = 82, CFI = .86, RMSEA = .09 \); \( \Delta \chi^2 = 75.67, df = 1, p < .01 \)).

Measures of absence

Two indexes were used for measuring absence behaviour: absence frequency (the number of absence events, regardless of their duration) and time lost (the total sum of days absent from work). Both indexes did not count absences due to holidays, maternity leave, military service and participation in training courses. The corresponding data were drawn from personnel records and referred to a period of 12 months after the administration of questionnaires. Since the distribution of the time lost index revealed severe deviations from normality, all individual raw scores were subjected to a square root transformation (see Clegg, 1983). After transformation the skewness measure \( g_1 \) for the time lost distribution was .82 and the measure of kurtosis \( g_2 \) was 1.02. For the frequency distribution the resulting \( g_1 \)-value turned out to be smaller than .20 and the \( g_2 \)-value smaller than .30. Thus, the skewness and kurtosis of the distributions of the transformed data did clearly remain under those thresholds that are commonly seen as critical violations of the assumptions underlying conventional correlation and regression approaches (Geurts, Buunk, & Schaufeli, 1994). In order to assess stability and reliability of the two types of absence measures the data for the first 6 months were correlated with those from the second 6-month period. Substantial correlations were found for both absence time lost (\( r = .55 \)) and absence frequency (\( r = .44 \)), respectively. These values
indicate an acceptable reliability of absence indicators (cf. Tables 1 and 3 in Hackett & Guion, 1985). As absence data often show substantial seasonal variations over the course of the year, all following analyses are based on transformed absence measures aggregated over the complete 12-month observation period.

Results

Means, standard deviations, and intercorrelations of all study variables are presented in Table 1. Before testing our main hypothesis the following findings are worth noting. First, both absence indexes were significantly correlated with gender, i.e. men were absent less

Table 1. Descriptive statistics and correlations among all study variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender</td>
<td>.16**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Work status</td>
<td>-.25**</td>
<td>.39**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Office tenure</td>
<td>.81**</td>
<td>.17**</td>
<td>-.17**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Job level</td>
<td>.22**</td>
<td>.05</td>
<td>-.05</td>
<td>.21**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Job satisfaction</td>
<td>.07</td>
<td>-.12*</td>
<td>-.10*</td>
<td>.08</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Job involvement</td>
<td>.04</td>
<td>-.09*</td>
<td>-.06</td>
<td>.01</td>
<td>.08</td>
<td>.39**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Absence frequency</td>
<td>.02</td>
<td>-.16**</td>
<td>.01</td>
<td>.00</td>
<td>-.06</td>
<td>-.02</td>
<td>-.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Time lost</td>
<td>.06</td>
<td>-.09*</td>
<td>.00</td>
<td>.00</td>
<td>-.06</td>
<td>-.11*</td>
<td>-.11*</td>
<td>.82**</td>
<td></td>
</tr>
</tbody>
</table>

M = 36.96  S = 1.34  T1 = 1.74  T2 = 16.71  T3 = 2.50  T4 = 4.63  T5 = 3.46  T6 = 2.61  T7 = 8.22


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

Table 2. Multiple regression analyses predicting absence frequency and time lost indexes

<table>
<thead>
<tr>
<th>Predictor and step</th>
<th>Frequency</th>
<th>Time lost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>ΔR²</td>
</tr>
<tr>
<td>1. Age</td>
<td>0.10</td>
<td>.044**</td>
</tr>
<tr>
<td>Gender</td>
<td>-.21**</td>
<td></td>
</tr>
<tr>
<td>Work status</td>
<td>.011*</td>
<td></td>
</tr>
<tr>
<td>Office tenure</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td>Job level</td>
<td>-.06</td>
<td></td>
</tr>
<tr>
<td>2. Job satisfaction</td>
<td>0.00</td>
<td>.004</td>
</tr>
<tr>
<td>Job involvement</td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>3. Job satisfaction × job involvement</td>
<td>0.10**</td>
<td>.015**</td>
</tr>
<tr>
<td>R²</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>3.60**</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 436 for both analyses.

*p < .05; **p < .01.
often than women. This is consistent with prior research (e.g. Clegg, 1983; Johns, 1997). In addition, gender and work status also correlate significantly with measures of job satisfaction. As a consequence, demographic and job level variables should be controlled when testing hypotheses regarding the relationship between job satisfaction and absence behaviour. Second, absence frequency and time lost exhibited a considerable amount of common variance \( r = .82 \). Based on previous research, this also could be expected (see Clegg, 1983; Sagie, 1998). However, as job satisfaction is more strongly correlated with time lost \( r = -.11, p < .05 \) than with absence frequency \( r = -.02, ns \); the difference is significant with \( t(433) = 3.16, p < .05 \), it is likely that both absence measures indicate somehow different forms of behaviour in this study even though they are not well separated in this sample. Moreover, it remains to be seen whether both variables are related in the same way to potential interactions between job involvement and job satisfaction. Third, consistent with previous research job satisfaction and job involvement are only moderately correlated \( r = .39 \) in this study.

For testing our hypothesis of an interactive effect of job satisfaction and job involvement on absenteeism above and beyond main effects we conducted two three-step hierarchical multiple regression analyses (see Aiken & West, 1991), separate for each absence index. In both analyses absence was first regressed onto the demographic variables to control for their potential influences on the relationships under examination. In the second step, job satisfaction and job involvement were jointly added to the equation. Finally, an interaction term computed as the cross-product of both work-related attitudes was introduced. The incremental variance explained in this last step provides an estimate of the size of the hypothesized interaction effect of job satisfaction and job involvement on individuals’ absence behaviour. In order to eliminate non-essential correlations between the interaction term and its constituent variables, all predictors were standardized prior to calculating their cross-product term and conducting the analyses (see Dunlop & Kemery, 1987). The results of these analyses are presented in Table 2. Regressing the dependent variables onto the demographic variables resulted in an \( R^2 \) of .044 for absence frequency \( (F(5, 430) = 4.01, p < .01) \), and an \( R^2 \) of .026 for absence time lost \( (F(5, 430) = 2.33, p < .05) \), respectively. Adding job satisfaction and job involvement to the equations contributed neither a significant amount of incremental variance to the prediction of individuals’ absence frequency \( (\Delta R^2 = .004, F(2, 428) = 0.25, \text{ ns}) \) nor to the prediction of absence time lost \( (\Delta R^2 = .023, F(2, 428) = 1.46, \text{ ns}) \). However, as expected, the introduction of the interaction term accounted for significant additional variation in both absence frequency \( (\Delta R^2 = .015, F(1, 427) = 6.70, p < .01) \) and time lost \( (\Delta R^2 = .028, F(1, 427) = 13.10, p < .01) \). The final equation for the time lost index revealed three significant predictors: age \( (\beta = .32, p < .05) \), gender \( (\beta = -.27, p < .01) \) and the interaction between job satisfaction and job involvement \( (\beta = .27, p < .01) \). Gender \( (\beta = -.21, p < .01) \) and the interaction of satisfaction and involvement \( (\beta = .10, p < .01) \) were also significant predictors in the final equation for absence frequency, accompanied with an additionally significant influence of work status \( (\beta = .11, p < .05) \).

Having established the presence of a significant interaction between job satisfaction and job involvement in both absence criteria, its specific form was analysed following the procedure suggested by Aiken and West (1991; see also Jaccard, Turrisi, & Wan, 1990). For each absence measure the interaction was plotted by inserting high (1 SD above the mean) and low (1 SD below the mean) values for the two predictor variables into the regression equations. Both plots are depicted in Figure 1. It can be seen that job satisfaction and job involvement exert quite similar interactive influences on both
absence measures: for employees with low job satisfaction the impact of job involvement on absence behaviour is much more pronounced than for employees with high job satisfaction. Moreover, both interactions are disordinal in nature as the regression lines of the relationship between job involvement and both absence measures cross over within the range of satisfaction values (see Aiken & West, 1991, p. 22f). To answer the question of whether the regression of both absence measures on job involvement are different from zero for high and low values of job satisfaction, in addition, simple slope analyses were performed. The results of these analyses revealed that for employees with low job satisfaction the regressions of absence frequency and time lost on job involvement were both significantly different from zero ($b = -0.14, t = 2.37, p < .02$ for absence frequency and $b = -0.44, t = 3.68, p < .001$ for time lost), whereas for employees with high job satisfaction the corresponding regression slopes indicated no differences from zero ($b = 0.06, t = 0.92, ns$ for absence frequency and $b = 0.11, t = 0.93, ns$ for time lost). Thus, increasing levels of job involvement are associated with decreases in both absence measures only when job satisfaction is low. There is no relationship between involvement and absenteeism, however, when job satisfaction is high. Finally, we also analysed whether these two-way interactions are stable across gender and job levels by examining three-way interactions including these variables. None of these interactions was significant. Thus, we can conclude that the two-way interactions are robust and hold across gender and status groups.

Discussion

The results of this study are important in at least two ways. First, we were able to demonstrate in support of the three previous studies on this issue (Blau, 1986; Mathieu & Kohler, 1990; Sagie, 1998) that interactions between central work attitudes are important predictors of absence from work. Moreover, based on our findings, we can conclude that these interactions are very likely to be disordinal (no main effect, crossing over of regression slopes) as three of four available tests yielded this result. Thus, if such interactions are not analysed, the real impact of work attitudes on absence behaviour will often be underestimated. As our results were established in quite a large sample and
after controlling for the impact of some potential confounding variables (e.g. work status, gender, job level), and because we analysed absence behaviour over a fairly long observation time (1 year), we can have some confidence that this basic phenomenon is not spurious and will also be found in other research.

Second, it is encouraging that the interaction of the work attitudes investigated in this study was significant because this specific combination of attitudes (job satisfaction and job involvement) has not been examined in previous research. Blau (1986) as well as Mathieu and Kohler (1990) investigated the impact of job involvement and organizational commitment, and Sagie (1998) analysed interactions between job satisfaction and organizational commitment. Thus, finding a similar interaction between job satisfaction and job involvement contributes to the literature. We predicted that such effects are not restricted to attitudes with different targets (job vs. organization) but can also be found for attitudes with the same target (the job) by drawing on basic principles in personality research regarding strong and weak situations (Mischel, 2004) and insights about the marked situational variability of job satisfaction judgments (e.g. Weiss, 2002). More specifically, it was predicted that job involvement affects absenteeism more if job satisfaction is low as this indicates a situation with weak situational constraints. The results support our view of job involvement as a reflection of employee personality differences that contribute more to the explanation of absenteeism in weak situations, i.e. when perceptions of the workplace are less positive indicated by low job satisfaction. A closer inspection of the significant interaction using simple slope analysis revealed that the only substantial part of this interaction is based on the strong impact of job involvement if job satisfaction is low. Of course, this finding is new and therefore future attempts to replicate this observation will be worthwhile.

Limitations, directions for future research and practical implications

This study has several limitations that might be addressed in further research. First, it should be noted that it was not possible to differentiate between more or less voluntary forms of absence behaviour (e.g. unexcused short-term absence vs. certificated sick days owing to illness). This is a limitation because research on the impact of attitudes has shown that attitudes affect behaviour more strongly if individuals have control over the behaviour (e.g. they are in control over obstacles to attendance; see Johns, 1997). Thus, work attitudes should be more closely related to absence events that are under volitional control of employees, and a clearer differentiation between these forms of absence would probably help in explaining more variance in absence behaviour. As both absence indexes used in the present study did not consider several forms of involuntary absence from work (e.g. military service, absence due to courses), it is perhaps not surprising that we found similar interactions for both absence indicators. Of course, a precise test of this assumption is only possible if the two types of absence can be clearly differentiated (e.g. based on additional diary information regarding the reasons for absence from work), and future studies should seek to obtain more information about the causes of absence. Having said this, it should, however, also be noted that Steel (2003) recently argued that the voluntary/involuntary distinction between absenteeism metrics has been oversold. He concludes that overall absence metrics are often fine because they represent additive combinations of voluntary and involuntary absence variance.
Second, it might be argued that the incremental variance explained by the interaction terms with respect to absence frequency (1.5%) and time lost absence (2.8%), although statistically significant, seems rather small. However, Evans (1985) concluded that moderator effects are so difficult to detect that even those explaining as little as 1% of the total variance should be considered important. Moreover, Champoux and Peters (1987) and Chaplin (1991) reviewed much of the social science literature and reported that field study interactions typically account for about 1–3% of the variance (see also McClelland & Judd, 1993). Thus, we believe that the additional amount of variation explained by the interaction in this study is not only statistically reliable but also practically relevant.

In the same vein, it might also be considered a limitation of our study that both work attitudes we used as predictors for absence behaviour of employees were significantly correlated ($r = .39$, $p < .01$ for job satisfaction and job involvement). However, as Mathieu and Kohler (1990) and Sagie (1998) noted, a high correlation between two predictor variables does not invalidate the interactive effects of both variables on absence behaviour. On the contrary, finding a significant interaction is less probable in such a situation and, therefore, we can have even greater confidence in the conclusion that this effect is real. Nevertheless, as in all previous studies, both predictor attitudes were significantly correlated ($r = .74$ for job satisfaction and organizational commitment in the study of Sagie, 1998; $r = .61$ and $r = .31$ for job involvement and organizational commitment in Mathieu & Kohler, 1990 and Blau, 1986, respectively); this issue may deserve more attention in future studies.

What are the implications for managers and practitioners? Assuming that further research does replicate the present findings, some practical recommendations can be made. First, it is helpful to know that not only main effects of attitudes but also interactions of attitudes are important in understanding absence behaviour. These interactions might indicate (1) the presence of range restrictions, (2) the prominence of specific motivational forces underlying absenteeism (e.g. in one department) or (3) the interplay between personality and situational factors. Thus, a much richer understanding of absence behaviour can be gained by a deliberate search for such interactions. Secondly, based on our specific finding of an interaction between job satisfaction and job involvement in a public organization, it can be argued that establishing high job satisfaction (e.g. by job-redesign strategies, promotions, increases of salary) among employees will pay off as this prevents the transformation of low job involvement into high absenteeism. If, however, such opportunities are limited – and in German public organizations there is often little flexibility for salary increases or promotions – recruitment focusing on identifying the right personalities in line with a policy of recruit for attitude, then train for skill, may be of more relevance. That means it would be good to start by recruiting employees with high job involvement and then provide in-company training.

To conclude, our results document that examining the impact of interactions between job satisfaction and job involvement on absenteeism might open a fruitful new avenue for understanding absence behaviour in organizations. Of course, it remains to be seen whether future studies will find more empirical support for the relevance of these interactions. Nevertheless, we would like to encourage researchers as well as practitioners to search not only for interactions of attitudes with a different focus (e.g. job vs. organization) but also for interactions between job involvement and job satisfaction. In the long run, this might yield more comprehensive theories of absence at
work and lead to more effective interventions aimed at reducing absenteeism in organizations.

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References


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