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On the link between different combinations of Negative Affectivity (NA) and Positive Affectivity (PA) and job performance

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Abstract

Despite the assumed orthogonality of Negative Affectivity (NA) and Positive Affectivity (PA), the effects of the different combinations of NA and PA on work-related outcomes such as job performance have been neglected. The present study among 42 employees of a local social services department in the Netherlands was conducted to fill this gap. The results show that a negative link between NA and job performance (as assessed by the immediate supervisor) exists only when PA is low. This finding elucidates the role of dispositional affect in organizational research and emphasizes that the interaction between both affectivity dimensions should be included when studying how affect relates to job performance and other work-related outcome variables.

Keywords: Dispositional affect; Job performance; Negative affectivity; Positive affectivity; Extraversion; Neuroticism; Type D personality

1. Introduction

Job performance and other work-related outcomes are generally the result of the interaction between individual difference variables and situational factors (e.g. Newton & Keenan, 1991). However, it is also acknowledged that across different work contexts, personality traits, including dispositional affect, may be predictive for job performance, as indicated by the use of personality measures in employee selection. For example, Judge and Bono (2001) suggested that the four

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traits that they consider as representative for the higher order construct of core self-evaluations, namely self-esteem, generalized self-efficacy, locus of control, and emotional stability, are among the best dispositional predictors of job performance. Similarly, in a meta-analytic review, Tett, Jackson, and Rothstein (1991) found a reasonable reliable corrected estimate (0.24) of the overall relation between personality factors, including the "Big Five", and job performance. Furthermore, the two strongest Big Five traits (i.e. they explain most variance in factor analyses), extraversion and neuroticism, show robust correlations with dispositional Positive Affectivity (PA) and Negative Affectivity (NA), respectively (Judge & Larsen, 2001; Mattthews & Gilliland, 1999; Rusting & Larsen, 1997). As suggested by Gray (1990, 1994), extraverts are primarily oriented towards pleasure and rewards, which is accompanied by positive affect, whereas neurotics are mainly motivated to avoid punishments, which is associated with negative affect. Positive and negative affect assessed as dispositional tendencies are considered as less distal in terms of their relation to work-related outcomes than are the Big Five personality traits (Judge & Larsen, 2001). Dispositional affect is best thought of as an individual's average level, their typical amount of given emotion. PA and NA may be less trait-like and less stable over time, but the advantage of the more proximal nature of PA and NA is that these variables may be more powerful predictors of job-related outcomes, including job performance (Judge & Bretz, 1993; Judge & Larsen, 2001).

In organizational psychology, there is clearly renewed interest in the role of emotions and affective processes in the workplace, including the role of dispositional affect (Briner, 1999; Fineman, 1993; Judge & Larsen, 2001). Watson and his associates (Watson, Clark, & Tellegen, 1988; Watson & Tellegen, 1985) have demonstrated that PA and NA are empirically separable dimensions, if not completely orthogonal. In addition, Gray (1990, 1994) posited two separate brain mechanisms responsible for sensitivity to rewards (PA) and punishments (NA). Hence, both factors can be assumed to represent neurologically, or at least psychologically and empirically distinct affective systems (Gray, 1990, 1994; Judge & Larsen, 2001; but see Feldman Barrett & Russell, 1998). Individuals high on PA are energetic, enthusiastic, and enjoy life, whereas those low on PA are characterized as listless, lethargic, and apathetic. Individuals high on NA generally feel anxious, afraid, and angry, and people low on NA typically report feeling placid, calm, and contented (Watson et al., 1988; Watson & Pennebaker, 1989; Watson & Tellegen, 1985). Both dimensions are related to different categories of variables. PA is associated with sociability, helping behavior, accuracy, and care in decision-making (George & Brief, 1992; Isen & Baron, 1991; Staw & Barsade, 1993), whereas NA is linked to subjective complaints, poor coping, and trait anxiety (Cropanzano, James, & Konovsky, 1993; Watson & Pennebaker, 1989; Watson & Tellegen, 1985; Zeidner, 1994).

The purpose of the present study was to demonstrate that the different combinations of PA and NA should be taken into account to predict job performance (as assessed by the supervisor). Despite the recognized empirical, psychological, and even neurological orthogonality of NA and PA, no studies have yet been conducted in which the effect of *the interaction* between NA and PA on job performance (or other outcome variables) has been examined. In light of previous psychosomatic research, such an interaction can be expected since patients low on extraversion with a strong tendency to experience negative affect (i.e. high NA/low PA individuals, referred to as Type D personalities) display high levels of psychosocial stress and are at risk for adverse cardiac events (Denollet, 2000). These individuals are less likely to express their negative emotions and may not be able to display assertive behaviors. In contrast, extraverts high

on NA (i.e. high NA/high PA individuals) are assumed to be more able to cope adequately with their negative feelings, which reduces the chance on adversive work- and health-related outcomes (cf. Denollet, 2000).

In studies on the link between dispositional affect and job performance or other work-related outcomes, only main effects of either NA or PA or both were reported. For example, in one of the few studies that has examined the link between NA and job behavior *not* assessed by self-report, Iverson and Erwin (1997) demonstrated that NA, controlling for personal and quality of work life factors, had a significant impact on occupational injury in the 12 month period following the survey. Fox and Spector (2000) reported a negative correlation between the candidate's level of NA and an interviewer rating of the qualification of the candidate. Much more research has been carried out to examine the links between NA and self-reported health-related outcomes such as emotional and somatic distress, which are generally strongly positive (Watson & Pennebaker, 1989). In contrast, PA is typically linked to positive outcomes, including adequate job behavior. For example, Staw, Sutton, and Pelled (1994) found that high PA as compared to low PA employees received more favorable supervisor evaluations. They posited that PA may lead to better job performance through persistence, enhanced cognitive functioning, and altruism in the employee, as well as through interpersonal attraction, halo, and increased social influence on others (cf. Fox & Spector, 2000; George & Brief, 1992; Isen & Baron, 1991; Judge, Thoresen, Pucik, & Welbourne, 1999).

In the present study, the key question is how the different combinations of NA and PA are related to job performance. It was expected that NA is negatively related to job performance (e.g. Fox & Spector, 2000; Iverson & Erwin, 1997), but only when PA is low. Employees high on NA who lack the positive energy and enjoyment experienced by high PA individuals, who are similar to the so-called "Type D" personalities (Denollet, 2000), are tense and nervous and primarily driven by the fear for negative outcomes which is not likely to enhance job performance (Elliot & Covington, 2001; Higgins, 1997). In contrast, employees who are simultaneously high on NA and PA combine negative emotions with enthusiasm and the desire to obtain positive outcomes. In line with the findings by Denollet (2000), PA was expected to buffer the negative effects of NA on job performance. Hence, the *hypothesis* tested in this study states that a negative link between NA and job performance exists only when PA is low.

2. Method

2.1. Participants and procedure

The participants were full-time (i.e. 32 h per week or more) employees of a local social services department in the Netherlands. Their job was to carry out the Law on Social Security Benefits. The tasks of each employee were: (1) handling applications for social security benefits; (2) collecting client data; (3) entering and reporting these data; (4) consultancy, and (5) doing re-examinations. Data were collected by distributing questionnaires among the employees and asking them personally to fill out the questionnaire and to return the completed questionnaire in a sealed envelope directly to the researcher. Simultaneously, overall job performance ratings for every employee were obtained from their immediate supervisor ($n = 4$). Employees were equally

distributed among the four supervisors. The supervisors also returned the completed evaluation forms directly to the researcher in a sealed envelope. The employees were told that their immediate supervisor had been asked to rate their overall job performance. Both supervisors and employees were assured that their individual responses would be treated confidentially. The participants were asked to put their names on the questionnaire in order to match their forms with the ratings of their supervisors. The response rate among the employees was 89%. The final sample consisted of 42 employees, 40% female. The average age was 40.4 (S.D. = 8.7), and the ages of the participants ranged from 27 to 55. In terms of education, 40% had completed high school or a senior secondary vocational program, and 60% had had a higher vocational or college education.

2.2. Measures

2.2.1. Positive and Negative Affectivity

The Positive and Negative Affect Schedule (PANAS; Watson et al., 1988) was used to assess dispositional affect. These scales have been validated extensively (e.g. Watson et al., 1988). The participants were asked to describe their typical mood, that is, they were asked to "indicate to what extent you generally feel this way, that is, how you feel on the average." When this long-term instruction is used, both scales are assumed to represent rather stable individual differences in positive and negative affect levels, respectively (Watson et al., 1988). Cronbach's alpha was 0.71 for NA, and 0.81 for PA.

Overall job performance was measured by the four-item scale developed by Podsakoff and his colleagues (e.g. MacKenzie, Podsakoff, & Fetter, 1991). This measure asks supervisors to rate the overall job performance of subordinates. The four items are: (1) Overall, I would rate this individual as one of my department's best employees; (2) Generally speaking, I am pleased with this employee's performance; (3) I consider this person to be one of the department's most valuable employees; (4) All things considered, this employee is outstanding. Each item was followed by a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha was 0.92. Because supervisors may have differed in the way they used the measurement scales, the mean and the variance of the appraisals were standardized. That is, for each of the four supervisors, the raw scores were transformed into z-scores.

3. Results

Table 1 summarizes the means, standard deviations, and intercorrelations for all measures. The correlation between the measures of PA and NA as reported in the extant literature varies from zero to $r = -0.39$ (Connolly & Viswesvaran, 2000), so that the present estimate ($r = -0.29$) is consistent with existing results. As expected, job performance was negatively related to NA, whereas the link with PA was positive. To test whether PA buffered the negative link between NA and job performance, a hierarchical regression analysis was conducted with job performance regressed on NA, PA, and their interaction. According to Baron and Kenny (1986), an interaction (or buffer or moderator effect) is indicated by the significant effect of the interaction term between two independent variables while the main effects of both variables are controlled. To

avoid multicollinearity between the predictors and the interaction term, the predictor variables were centered around zero and multiplied to form the interaction term (Aiken & West, 1991). Age, tenure, and educational level (the latter coded as dummy variable) were entered as covariates. Because of the small sample size, R-squares are presented that adjust for shrinkage in the regression results; shrinkage is inversely related to sample size (Nunnally, 1978).

The results of the regression analysis are presented in Table 2. For the final regression model, no outliers were found. The *hypothesis* was that a negative link between NA and job performance exists only when PA is low. The significant interaction of NA and PA on job performance, which explained 9% additional variance (see Table 2), is plotted in Fig. 1. Following the procedure proposed by Aiken and West (1991), the predicted values on job performance were computed on the basis of the scores on PA and NA of 1 S.D. below the mean and 1 S.D. above the mean. Additional analyses were conducted to test the statistical significance of the simple slopes (Aiken & West, 1991). As indicated by the significant simple slope of low PA ($b=-1.47$, $P<0.05$), and the nonsignificant slope of high PA ($b=0.79$, ns), the *hypothesis* was supported. Specifically, when NA was higher, only among employees low on PA the overall performance level was lower (according to the immediate supervisor). Moreover, additional tests of differences between the predicted values on job performance (for this procedure, see Aiken & West, 1991) showed that

Table 1
Intercorrelations, means, and standard deviations ($n=42$)

Variable	2	3	4	5	*M*	S.D.
1. Positive Affectivity	−0.29	0.32*	−0.18	−0.15	2.72	0.48
2. Negative Affectivity	–	−0.33*	0.29	0.29	1.33	0.22
3. Job Performance		–	−0.12	−0.24	0	1.0
4. Age				0.62**	40.4	8.7
5. Tenure			–		10.2	7.6

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

Table 2
Unstandardized regression weights of job performance regressed on Positive Affectivity (PA) and Negative Affectivity (NA), and their interactions ($n=42$)

Step and variables entered	Job performance		
	1	2	3
1. Age	0.01	0.01	0.01
Tenure	−0.03	−0.03	−0.02
Educational level	0.03	−0.02	0.04
2. PA		0.48	0.47
NA		−1.01	−0.34
3. PA×NA			2.38*
Adjusted R^2	0.01	0.08	0.17*
R^2 change	0.01	0.07	0.09*

* $P<0.05$.

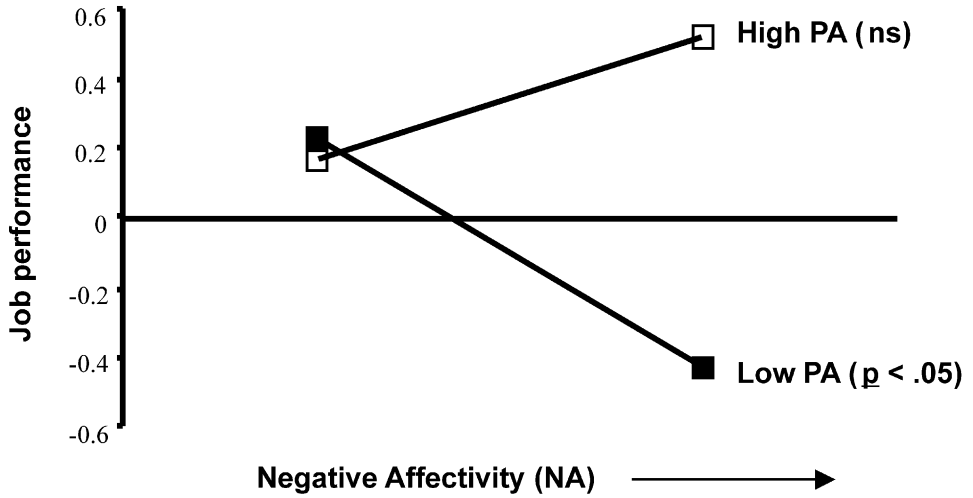

Fig. 1. Scores on job performance as a function of Negative Affectivity (NA) and Positive Affectivity (PA).

the value of low PA differed significantly from high PA when NA was high ($b = 1.00$, $P < 0.01$), whereas no significant difference between the two groups was observed in case of low NA ($b = -0.06$, ns). Thus, compared to employees either high on PA or low on NA, high NA/low PA employees received unfavorable appraisals from their immediate supervisor.

4. Discussion

The present results elucidate the role of dispositional affect in organizational research and emphasize that the interaction between both affectivity dimensions (which explained 9% additional variance) should be included when studying how affect relates to work-related outcomes such as job performance. In line with previous studies, a positive relationship between Positive Affectivity (PA) and job performance was observed (cf. Fox & Spector, 2000; George & Brief, 1992; Isen & Baron, 1991; Judge et al., 1999; Staw et al., 1994) as well as a negative link between Negative Affectivity (NA) and job performance (cf. Fox & Spector, 2000; Iverson & Erwin, 1997). However, the added value of the present research is that it was argued and demonstrated that these main effects of dispositional effect on job performance were qualified by the interaction between PA and NA. That is, the negative relationship between NA and job performance existed *only* when PA was low. When PA was high, NA was no longer negatively related to job performance, which suggests that PA "buffered" the negative effect of NA on job performance.

In other words, employees who combined high PA with either high or low NA as well as employees who combined low PA with low NA received favorable appraisals from their immediate supervisor, whereas their counterparts who combined high NA with low PA received unfavorable appraisals. In psychosomatic research, the latter individuals are indicated as Type D personalities, combining negative affect or neuroticism with low extraversion (a robust correlate of PA; Judge & Larsen, 2001; Mattthews & Gilliland, 1999; Rusting & Larsen, 1997). As pointed out by Denollet (2000), these individuals "... are more likely to feel unhappy and to be tensed or

easily irritated and less likely to experience positive mood states'' (p. 262). Furthermore, Type D individuals tend to adopt self-enhancing strategies such as inhibition of self-expression and withdrawal in order to avoid anticipated negative reactions from others such as disapproval. They typically have few personal ties with people and are unable to display assertive behaviors (Denollet, 2000). This may be particularly problematic in the current work context in which employees meet face-to-face with clients and regularly have to communicate bad news to their clients (e.g. ending or lowering their social security benefit). In future research, it should be examined to what extent the present findings can be generalized to other workplace contexts. The purpose of the present study was to demonstrate that the different combinations of PA and NA should be taken into account to predict job performance. The data suggest that in the present workplace context, high NA, low PA employees performed in their job at a significantly lower level than their counterparts with different affective profiles.

In the present study, dispositional affect explained 17% (adjusted R^2; see Table 2) of the employee's job performance as assessed by the supervisor, which does not automatically imply that dispositional affect is one of the most important determinants of job performance. The purpose of this study was *not* to demonstrate the predictive power of dispositional affect beyond other variables. Obviously, dispositional affect explains less variance of job performance when other variables are included in the analysis. These variables may be the ''Big Five'' personality factors (e.g. agreeableness; Tett et al., 1991), the core self-evaluations (e.g. generalized self-efficacy; Judge & Bono, 2001), goal orientations (e.g. mastery orientation; Van Yperen & Janssen, 2002), and situational factors such as job control and job social support (Karasek & Theorell, 1990; Van Yperen & Hagedoorn, in press).

As a final note, I would like to emphasize that it is not desirable to use dispositional arguments exclusively because it may raise difficult ethical and political questions since these arguments imply that employers should select employees with the ''appropriate'' dispositions (Newton & Keenan, 1991). On the other hand, observed effects of dispositional variables on job performance and other work-related outcomes indicate that we should not oversell models and theories of job (re)design that rely on situational factors exclusively (Staw, 1986). For future research and practical implications, it is important to keep in mind that job performance usually results both from the characteristics of the employee and the nature of the work situation.

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