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Certainty as a moderator of feedback reactions? A test of the strength of the self-verification motive

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The present study investigated whether employees are merely interested in hearing good news about themselves, as predicted by self-enhancement theory, or are more interested in feedback that confirms their self-concept, as predicted by self-verification theory. We examined in a field study whether self-view certainty serves as a moderator and strengthens the effect of congruence between individuals' self-views and the performance feedback they receive about these self-views on feedback reactions. Polynomial regression results revealed that people mainly reacted favourably to positive feedback. Prior self-views did not play a key role in explaining feedback reactions. As feedback scores were the main determinant of feedback reactions, it seems that feedback reactions are dominated by self-enhancement strivings and that self-verification strivings are less prominent. Little support was found for the moderating role of self-view certainty.

The finding that performance feedback does not uniformly improve performance (Kluger & DeNisi, 1996) has led to a renewed interest in examining feedback processes. One line of research in this area has paid close attention to questions such as 'When do employees feel satisfied about the feedback they receive?' and 'When do employees intend to use the feedback obtained?' Research examining these feedback reactions is important for numerous reasons, including (a) reactions represent a criterion of great interest to practitioners because feedback reactions are vital to the acceptance and use of any feedback system or appraisal system (Cawley, Keeping, & Levy, 1998) and (b) feedback reactions are included in all theoretical models of the feedback process as the immediate predecessors of performance improvement. Providing feedback can only lead to increased levels of individual and organizational performance if employees are willing to accept and respond to feedback (Ilgen, Fisher, & Taylor, 1979; Kinicki, Prussia, Wu, & McKee-Ryan, 2004). Given this practical and theoretical importance, reactions to feedback have been studied in different contexts, such as development centres (Jones & Whitmore, 1995), 360-degree and upward feedback programmes (Brett & Atwater, 2001; Smither, Wohlers, & London, 1995), management development (Ryan, Brutus,

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Greguras, & Hakel, 2000), computer-adaptive testing (Tonidandel, Quinones, & Adams, 2002), performance appraisal (Keeping & Levy, 2000) and selection decisions (Bauer, Maertz, Dolen, & Campion, 1998).

One puzzling issue that has emerged across these different contexts is whether employees are merely interested in hearing good news about themselves or are more interested in feedback that confirms their self-concept. Several studies could not provide an unequivocal answer to this question. Some studies (e.g. Brett & Atwater, 2001) found that employees reacted favourably to positive feedback, whereas other studies (e.g. Nease, Mudgett, & Quinones, 1999) reported that employees reacted favourably to feedback that was consistent with their self-ratings.

The current study tries to shed new light on these mixed findings by introducing a new moderator of feedback reactions. This moderator, self-view certainty, is drawn from self-evaluation theory in social psychology. We will examine in the present field study if people's reactions to feedback are moderated by the certainty of their self-views.

Theoretical background

The determinant that has received the most attention in feedback reactions research is the feedback valence or feedback sign. Several studies have found that feedback recipients are more likely to accept and use favourable (positive) feedback than unfavourable (negative) feedback (Bannister, 1986; Brett & Atwater, 2001; Facteau, Facteau, Schoel, Russel, & Poteet, 1998; Halperin, Snyder, Shenkel, & Houston, 1976; Illies, De Pater, & Judge, 2006; Stone & Stone, 1984; Tonidandel *et al.*, 2002). This finding corresponds to predictions of self-enhancement theory in social psychology. Self-enhancement theory proposes that people are motivated to view themselves as favourably as possible. Hence, individuals are driven to elevate the positivity of their self-concept and protect themselves from threatening information in order to achieve a high level of personal worth (for a review, see Sedikides & Strube [1997]). In the context of the feedback process, this theoretical perspective predicts that reactions are based on a one-step cognitive appraisal of the feedback message: '*If* feedback is unfavourable, *then* dismiss it as inaccurate. *If* feedback is favourable, *then* accept it'.

In addition to the feedback sign, a second important determinant of feedback reactions is a person's perception of themselves before they receive feedback. These self-views might modify the general tendency to accept and respond to favourable feedback. In particular, several studies reported that, in contrast to self-enhancement theory, feedback reactions were not determined by the feedback sign but by the degree of congruence between the feedback message and the self-views individuals had before they received feedback. Thus, people are more likely to accept feedback when the feedback message confirms their existing self-concept (e.g. Dauenheimer, Stahlberg, & Petersen, 1999; Jussim, Yen, & Aiello, 1995; Korsgaard, 1996; Markus, 1977; Nease *et al.*, 1999). This finding corresponds to predictions of self-verification theory. This social psychological motivation theory suggests that people go out of their way to maintain consistency between their self-views and new self-relevant information. People are motivated to confirm their self-views out of a desire to maximize their perceptions of prediction, control and stability in an often chaotic social environment (for a review, see Swann, Rentfrow, & Guinn, 2002). In the context of the feedback process, this theory predicts that reactions are based on a two-step cognitive appraisal, for example: '*If* the feedback is favourable *and* the particular self-conception is unfavourable, *then* dismiss

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feedback as inaccurate. *If* the feedback is unfavourable *and* the particular self-conception is unfavourable, *then* accept the feedback message'.

Integrating self-verification and self-enhancement motives

The above indicates that it remains inconclusive as to which of the two self-evaluation theories is supported when considering feedback reactions in organizations. These mixed findings echo a debate in social psychology between proponents of self-enhancement theory and proponents of self-verification (self-consistency) theory during the 1960s. In origin, adherents of both perspectives questioned the existence of the other motive and tried to persuade the opposition (for a review, see Shrauger, 1975). As it could not be established which of these self-evaluation theories was the correct one, scholars have recently proposed that both models might be correct. That is, people might experience a need for both self-enhancement and self-verification, but these needs vary under different conditions. Thus, the research question has recently shifted from 'which motive is dominant?' to 'under which conditions do the motives operate?', that is, research has begun to search for moderators (Sedikides & Strubbe, 1995, 1997; Swann & Schroeder, 1995).

One important moderator that has been proposed is the nature of feedback reactions. On the basis of a review of empirical findings, Shrauger (1975) proposed that affective reactions to evaluations (e.g. satisfaction) might follow predictions of self-enhancement theory and cognitive reactions (e.g. utility) might follow predictions of self-verification theory. Research in the social psychological self-evaluation domain has supported this hypothesis (Dauenheimer *et al.*, 1999; Jussim *et al.*, 1995; Moreland & Sweeney, 1984; Sweeney & Wells, 1990).

In the current study, we propose a new moderator of the self-enhancement motive and the self-verification motive in determining feedback reactions, namely, the *certainty* with which self-views are held before feedback is received. Self-view certainty refers to a subjective confidence of self-beliefs and is conceptually related to self-concept clarity. Self-concept clarity differs from self-view certainty in that the former refers to the global experience of the self as a clear and stable entity, whereas the latter is more concerned with confidence in specific self-views (Campbell, 1990; Story, 2004).

Swann and Schroeder (1995) identified self-view certainty as one of the main moderators of the self-verification perspective. Empirical research shows that people are most inclined to seek confirmation of their self-views when these self-views are held with high certainty (Chen, Chen, & Shaw, 2004; Pelham, 1991; Pelham & Swann, 1994; Swann & Ely, 1984; Swann, Pelham, & Chidester, 1988). Self-views that are held with high certainty occupy a central position in the cognitive system of people. They are related to a great number of other self-relevant cognitions and therefore possess a high resistance to change (Markus, 1977). When self-concept certainty is high, the more congruent the feedback message is with the corresponding self-view, the more favourably people will react. Thus, people with higher self-view certainty are motivated to invest time and resources in a two-step cognitive appraisal.

However, when self-view certainty is low, people are more eager to self-enhance (Ungar, 1980). Uncertainty about beliefs implies a low resistance to change (Sorrentino, Bobocel, Gitta, & Olson, 1988). People can more easily change their low-certainty self-views in the direction of a more flattering self-image. Thus, when self-view certainty is low, people will use a one-step cognitive appraisal of the feedback. The more positive the feedback message, the more favourably people will react regardless of the corresponding self-views, as predicted by self-enhancement theory.

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In short, we expect that self-concept certainty will moderate the effect of self-views and feedback on feedback reactions. The specific theoretical predictions concerning the moderating effect of self-view certainty are depicted in Figure 1. First, when self-view certainty is low, we expect that only feedback scores will determine feedback reactions, regardless of the valence of the self-concept (Figure 1a). Second, as self-view certainty increases, the role of self-views is expected to increase so that both self-enhancement and self-verification strivings determine feedback reactions (Figure 1b). Third, when self-view certainty is high, we hypothesize that both feedback scores and self-views will contribute equally in determining feedback reactions, so that feedback reactions are most favourable when feedback and self-views are congruent and most unfavourable when feedback and self-views are incongruent, regardless of self-view valence (Figure 1c).

Unique contributions of current study

There are some commonalities between the current study and previous studies in both organizational and social psychology that need to be addressed. Whereas our study is

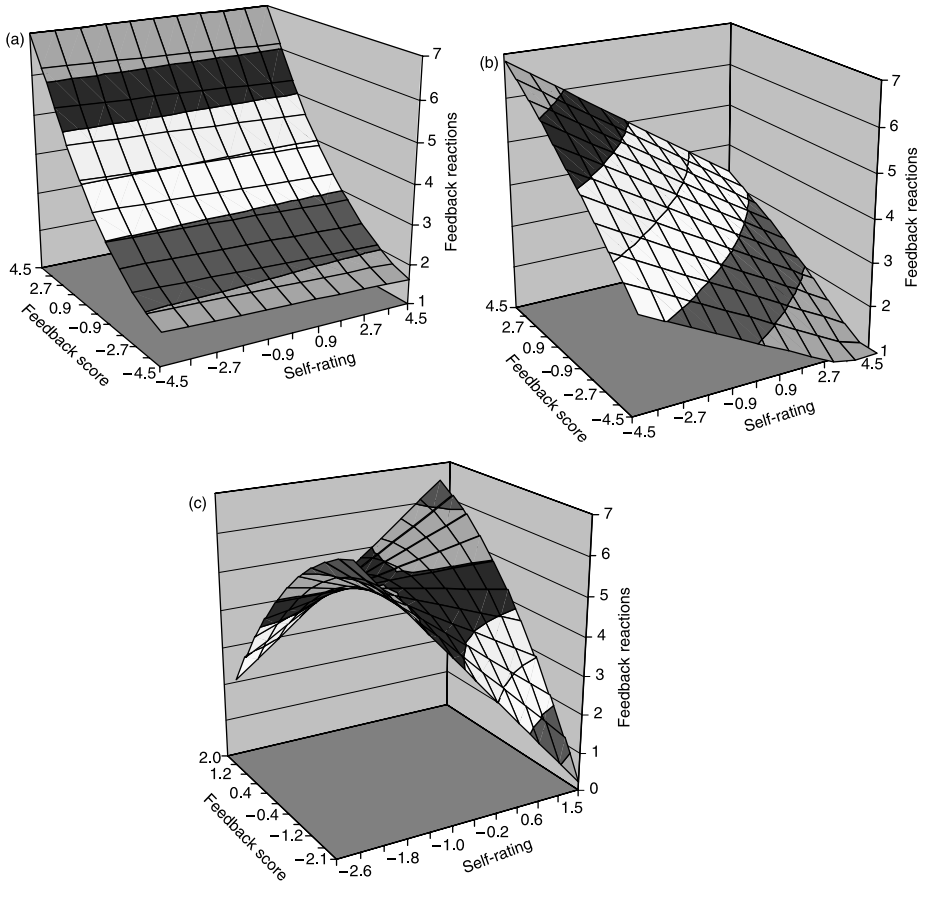

Figure 1. Hypothesized three-dimensional surfaces relating congruence between feedback and self-rating to feedback reactions for three levels of certainty. (a) Certainty low. (b) Certainty moderate. (c) Certainty high.

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similar in some respects, we also believe that several conceptual and methodological differences make the proposed study unique and justify its importance.

First, it remains unclear whether people prefer favourable or consistent feedback. Based on self-evaluation theory, we introduce 'certainty' as a new moderator variable of feedback reactions. In particular, we expect that self-verifying tendencies in feedback reactions will be more pronounced as self-concept certainty increases. However, with decreasing levels of certainty, we expect that the self-enhancement motive will become more dominant in determining feedback reactions. This approach is in line with recent developments in self-evaluation theory that have called for more research examining moderators of self-evaluation motives (Sedikides & Strubbe, 1995, 1997).

Second, examining whether people prefer favourable or consistent feedback is a question of congruence between self-appraisals and feedback scores. In the past, questions of feedback congruence have typically been answered using difference scores (e.g. Ashford & Tsui, 1990; Kernan & Lord, 1990; Vance & Collella, 1990). For instance, Sweeney and Wells (1990) examined whether students preferred favourable or consistent feedback on their exams. On a pre-exam questionnaire, they asked respondents to state how many points they thought they would earn on the upcoming exam and subtracted this value from the actual number of points they earned on the exam. Then, this difference score was regressed on feedback acceptance and support was found for the self-verification perspective. However, Edwards (1994, 2002) noted a number of difficulties with the use of difference scores and developed a regression procedure to resolve these problems. One of the main critiques of typical difference measures is that they conceal the relative contribution of the component parts of the difference score to the effect on the dependent variable. Conceptually, the contributions of the component parts are of particular interest in this study because we aim to examine whether (a) people only react to the feedback scores and, thus, only one component accounts for the variance in feedback reactions (self-enhancement perspective) or (b) people react to the congruence between the feedback scores and their self-ratings and, thus, the two components account for the variance in feedback reactions (self-verification perspective). The current study is one of the first in the feedback domain to use the regression procedures recommended by Edwards and therefore makes it possible to accurately distinguish self-verifying from self-enhancing feedback reactions.

Third, various studies (e.g. Jussim *et al.*, 1995) examining self-verification and self-enhancement motives in the feedback process have used global self-esteem as a measure of self-concept. However, recent social psychological research has shown that specific self-views (instead of global self-esteem) predict people's reactions to success and failure (Bernichon, Cook, & Brown, 2003; Dutton & Brown, 1997). For instance, individuals with low self-esteem sometimes choose to self-verify (accept negative feedback) and sometimes choose to self-enhance (accept positive feedback), depending upon the area of feedback (Swann, Pelham, & Krull, 1989). Therefore, Swann *et al.* (2002) recommended that the self-enhancement and self-verification motives of individuals should be examined in light of the specific attribute upon which feedback is given and specific self-views should be measured *a priori*. Therefore, in this study we measured self-ratings for various competencies (instead of global self-esteem) before feedback was given. Note that this approach also parallels common organizational practices where developmental feedback is typically provided about various performance elements upon completion of a 360-degree feedback survey, a development centre, or an online assessment instrument and where employees can differently respond to feedback about each of these performance elements.

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Method

Participants

A total of 389 individuals (50% male, 50% female) completed a web-based in-basket exercise. Their ages ranged from 17 to 59 years ($M = 31.1$ yrs, $SD = 10.7$). The participants had an average working experience of 8.5 years ($SD = 10.7$) in their company and an average experience of 3.1 years ($SD = 4.9$) in their current position. Eighty-seven percent of the participants held a bachelors degree and 56% had earned an advanced or professional degree.

Procedure

A computerized in-basket exercise was placed on-line on the website of a governmental service for employment and vocational training. This website is frequently visited by applicants and employees looking for training and coaching in job application skills and various work-related competencies. The in-basket exercise was advertised as a preparation test for job applicants that provided feedback about general managerial competencies. Upon completion of a short questionnaire measuring demographic variables, people received a password that gave immediate access to the exercise.

First, participants rated themselves in a self-assessment questionnaire on four managerial competencies that are included in a recently developed taxonomy of managerial competence (Tett, Guterman, Bleier, & Murphy, 2000), namely, *Problem Awareness, Coordinating, Information Management, and Decisiveness*.

Next, participants were required to work on a computerized in-basket exercise that simulated daily work activities and measured these four competencies. The computerized in-basket exercise was adapted from Tett, Steele, and Beauregard (2003) and effort was made to ensure the in-basket exercise was realistic (role descriptions, background information, pictures, e-mail simulation, organizational charts, etc.). Responses on the in-basket exercise were automatically scored according to the scoring rules developed by Tett, Menard, Guterman, and Beauregard (2001). People received a feedback report about their performance immediately after completing the in-basket exercise. The feedback report consisted of their scores on each of the four competencies and a brief explanatory text. The feedback scores on the four competencies ranged from 1 to 10, reflecting a participant's performance relative to other participants. A questionnaire measuring feedback satisfaction and perceived utility of feedback per competency was attached to the feedback report.

Measures

In the self-assessment questionnaire, participants rated their standing relative to their colleagues on each of the four competencies on a 10-point scale ranging from 1 (*bottom five percent*) to 10 (*top five percent*). Participants also reported how certain they were of their standing on each of these competencies using scales anchored at the end-points by 1 (*not at all certain*) to 9 (*extremely certain*). The mean correlation between participants' self-ratings and their certainty regarding these self-ratings was moderate ($M = 0.48$) and comparable to previous research (Krosnick, Boninger, Yuang, Berent, & Carnot, 1993; Pelham & Swann, 1989). Wording and rating format for the self and certainty ratings were taken from the Self-Attribute Questionnaire (SAQ; Pelham & Swann, 1989), which measures similar self-attributes and has shown high test-retest reliability (.77).

Feedback satisfaction was measured for each competency with two items adapted from Korsgaard (1996). The items used 7-point Likert-type response scales ranging from

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1 (*strongly disagree*) to 7 (*strongly agree*). The scale included items such as, 'I am satisfied with the score I received on [name competency]'. Internal consistencies for this scale varied between .93 and .97 for the different competencies. Feedback utility was measured for each competency with two items on a 7-point scale. These items were 'The feedback I received on [name competency] helped me learn how I can improve my performance' and 'I intend to use the received feedback on [name competency] in the future'. This measure shows strong resemblance to a measure of intended response to feedback that has been shown to predict job performance after feedback (Kinicki *et al.*, 2004). Internal consistencies for this scale varied between .82 and .90 for the different competencies. Correlations between the two scales for each competency ranged from −.10 to .18. Exploratory factor analyses indicated that satisfaction and utility items loaded on two different factors, demonstrating that these reactions reflect different constructs, as shown in previous research (Alliger, Tannenbaum, Bennet, Traver, & Shotland, 1997; Keeping & Levy, 2000).

Involvement

We also assessed how important each of these competencies was to the participants on a 9-point scale, with responses ranging from 1 (*not at all important*) to 9 (*extremely important*). Participants indicated that all the competencies were important to them ($M = 7.25$, $SD = 1.16$), illustrating that the participants of this study cared about their performance on the in-basket exercise. A subsample of 100 participants also completed an additional questionnaire measuring involvement with six items on a 7-point scale, with responses ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale included items such as, 'The background information we received was realistic', 'I was motivated to perform well on this exercise' and 'I carefully followed all instructions'. The mean for this scale was 5.80 ($SD = 0.76$, $\alpha = .78$), indicating that participants were highly involved.

Analyses

Given the limitations of traditional congruence measures, we used analytical procedures recommended by Edwards (1994, 2002). The following quadratic regression equation was used to determine whether predictions of self-enhancement theory or self-verification theory were supported.

$$FR = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e \quad (1)$$

In Equation 1, X and Y represent participants' self-ratings and feedback scores on the competencies, respectively, and *FR* represents feedback reactions. This equation makes it possible to examine the relative contribution of the two components of interest in this study, namely, the feedback scores and the self-ratings. If results are in line with self-enhancement theory, then higher feedback scores will result in more favourable feedback reactions, regardless of their relationship to participants' self-ratings. In this case, only one component (feedback scores) will contribute to feedback reactions. If results are in line with self-verification theory, congruence between the feedback scores and the self-ratings will lead to more favourable feedback reactions, regardless of whether the feedback scores are negative or positive. Congruence was examined by testing the algebraic and quadratic difference score models in an exploratory manner (Edwards, 2002). Statistically, an algebraic difference model is supported when both components (feedback scores and self-ratings) contribute equally but in opposite

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directions to feedback reactions ($b_1 = -b_2$) and the higher-order terms (X^2, XY, Y^2) do not explain any variance beyond the linear terms. Statistically, a quadratic difference score is supported when both quadratic components contribute equally to feedback reactions ($b_3 = b_5$) and the following additional constraints are satisfied: (1) $b_1 = 0$, (2) $b_2 = 0$, (3) $b_3 = b_5$ and (4) $b_3 + b_4 + b_5 = 0$. The full constraints and conditions that are statistically tested to support each of the models can be found in Edwards (1994, 2002).

Hierarchical regression analysis was used to test the moderating effects of self-view certainty. For each quadratic equation, the five terms were multiplied by certainty and the increment in R^2 yielded by these terms was tested, controlling for certainty and the five original quadratic terms (Edwards, 1994; Edwards & Rothbard, 1999). If the increment in R^2 was statistically significant, coefficients from the equation were used to determine whether certainty intensified the effects of the congruence between self-ratings and feedback scores on feedback reactions. Prior to quadratic regression analysis, self-ratings and feedback scores were scale centred by subtracting the scale mid-point to reduce multicollinearity and facilitate interpretation (Edwards, 1994).

The sample size of the present study ($N = 389$) has the statistical power of .80 ($\alpha = .05$) to detect a small effect size (f^2) of .03 (which corresponds approximately to an increase in R^2 of about .03) for the quadratic difference regression. In addition, using the same alpha, we had a power of .80 to detect an increment in R^2 of about .03 for the set of terms in the moderated regression equation.

The relationship between feedback–self-rating congruence and feedback reactions and the moderating effect of certainty was tested for each of the four competencies and for each dependent variable separately, yielding sixteen regression analyses. To control the risk of Type I error associated with these analyses, we used the sequential Bonferroni procedure (Seaman, Levin, & Serlin, 1991). This procedure requires the researcher to define the family of tests for which Type I error is controlled. For our purposes, a family comprised the tests of the R^2 values from the four regression equations for each dependent variable. Tests of the four regression equations containing certainty as a moderator were also defined as a separate family for each dependent variable (see Edwards & Rothbard, 1999). For each R^2 value that reached significance using this procedure, coefficients from the equation were tested using the nominal alpha level (i.e. .05). This procedure struck a balance between Type I and Type II errors by only considering those equations that reached significance at the required family-wise alpha while testing coefficients from those equations in the usual manner.

When polynomial regression results are being interpreted, less emphasis is typically placed on the significance of specific regression weights than on the surface pattern yielded by the regression equation (Edwards, 2001). Therefore, we plotted the response surfaces generated by the regression equations and evaluated these in light of the hypothesized response surface in Figure 1 (see also, Edwards & Rothbard, 1999).

Results

Descriptive statistics and correlations for all study variables are presented in Table 1. Results of polynomial regression procedures are reported in Tables 2 and 3. As can be seen in the columns F_b of Tables 2 and 3, the set of second-order coefficients did not explain a significant amount of variance above the linear terms for any of the four competencies, indicating that a quadratic difference score model does not fit the data very well. For feedback satisfaction as a dependent variable (Table 2), results for the

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Table 1. Descriptive statistics and correlation coefficients

Measure	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Coordinating																					
1. Self-rating	6.36	1.10																			
2. Certainty rating	6.41	1.43	.53																		
3. Feedback score	6.09	0.96	.10	.07																	
4. Feedback satisfaction	3.46	1.64	−.12	−.03	.58																
5. Feedback utility	5.50	1.30	.04	.07	.01	−.10															
Decisiveness																					
6. Self-rating	5.88	1.41	.44	.41	.03	−.04	−.03														
7. Certainty rating	6.41	1.39	.35	.61	.09	.02	.09	.44													
8. Feedback score	6.11	1.02	.10	.08	.30	.08	.12	.06	.04												
9. Feedback satisfaction	3.78	1.74	−.05	.00	.12	.37	.09	−.10	−.02	.61											
10. Feedback utility	5.53	1.28	.04	.09	.00	−.06	.79	.03	.10	.18	.10										
Information management																					
11. Self-rating	6.26	1.31	.32	.32	.05	.00	−.03	.21	.27	.00	−.08	.01									
12. Certainty rating	6.42	1.41	.33	.59	.11	.03	.04	.32	.60	.09	.01	.08	.52								
13. Feedback score	6.97	0.90	.02	.02	.14	.05	.14	−.01	.01	.03	−.01	.12	−.01	−.02							
14. Feedback satisfaction	4.82	1.63	−.08	−.03	−.07	.21	.07	−.08	−.07	−.17	.11	.03	−.14	−.13	.58						
15. Feedback utility	5.49	1.30	.03	.06	.01	−.03	.79	−.03	.09	.14	.09	.85	.01	.03	.17	.08					
Problem awareness																					
16. Self-rating	6.50	1.19	.33	.35	.10	−.02	.09	.37	.28	.10	−.08	.07	.33	.31	.07	−.07	.07				
17. Certainty rating	6.44	1.32	.41	.66	.09	.01	.10	.36	.53	.06	−.02	.11	.29	.56	−.00	−.05	.09	.46			
18. Feedback score	7.32	0.84	.04	−.01	.17	−.02	.15	.03	−.01	.17	−.01	.15	.02	.03	.26	.04	.18	.11	.07		
19. Feedback satisfaction	5.27	1.50	−.10	−.09	−.06	.12	.13	−.09	−.10	−.06	.16	.10	−.06	−.11	.19	.36	.13	−.10	−.06	.59	
20. Feedback utility	5.52	1.30	−.01	.05	−.02	−.05	.79	−.02	.09	.15	.10	.84	.04	.06	.09	.03	.87	.06	.07	.18	.15

Note. $N = 389$. Correlations greater than or equal to .10 were statistically significant ($p < .05$).

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Table 2. Results of quadratic regressions of feedback satisfaction on self-ratings and feedback scores

	Quadratic regression							Moderated regression	
Competency	X	Y	X^2	XY	Y^2	R^2	F_h	F_m	ΔR^2
Coordinating	−.27**	.85**	.00	.00	.15**	.38**	.02	.95	.01
Decisiveness	−.22**	.98**	.02	.05	.03	.40**	.01	1.16	.01
Information management	−.18	1.08**	−.02	.03	−.02	.35**	.00	.26	.00
Problem awareness	−.29*	1.36**	−.03	.08	−.10	.38**	.01	2.01	.02

Note. Sample size is 389. For columns labelled X, Y, X^2, XY and Y^2, table entries are unstandardized regression coefficients for equations with all predictors entered simultaneously (X = self-ratings, Y = feedback scores). The column labelled R^2 indicates the variance explained by the predictors. The column labelled F_h contains F-ratios for the test of the quadratic terms (X^2, XY and Y^2). *The* column labelled F_m contains F-ratios for the hierarchic test of the moderation terms (CX, CY, CX^2, CXY and CY^2), controlling for the five quadratic terms and certainty (Cz). The column ΔR^2 contains incremental variance explained by the five moderator terms. None of the higher-order terms were significant.
*$p < .05$. **$p < .01$.

Table 3. Results of quadratic regressions of feedback utility on self-ratings and feedback scores

	Quadratic regression							Moderated regression	
Competency	X	Y	X^2	XY	Y^2	R^2	F_h	F_m	ΔR^2
Coordinating	.03	.03	.00	.02	−.03	.00	.00	1.17	.02
Decisiveness	.05	.16*	−.01	−.05	.07	.04*	.01	3.49*	.04
Information management	.16	.01	−.03	−.08	.10	.04*	.01	1.79	.02
Problem awareness	.10	.35	.05	−.08	.00	.04*	.01	2.19	.03

Note. Sample size is 389. For columns labelled X, Y, X^2, XY and Y^2, table entries are unstandardized regression coefficients for equations with all predictors entered simultaneously (X = self-ratings, Y = feedback scores). The column labelled R^2 indicates the variance explained by the predictors. The column labelled F_h contains F-ratios for the test of the quadratic terms (X^2, XY and Y^2). *The* column labelled F_m contains F-ratios for the hierarchic test of the moderation terms (CX, CY, CX^2, CXY and CY^2), controlling for the five quadratic terms and certainty (C). The column ΔR^2 contains incremental variance explained by the five moderator terms. None of the higher-order terms were significant.
*$p < .05$. **$p < .01$.

competency *Information Management* were in line with self-enhancement theory. Only the coefficient on feedback scores was significant ($p < .01$). This indicates that people were satisfied with positive feedback about *Information Management*, regardless of self-ratings. For the other three competencies, both coefficients on feedback scores and self-ratings were significant and in opposite directions. The combined effects of feedback scores and self-ratings on feedback satisfaction for the competency *Coordinating* are depicted in Figure 2. Figure 2 shows that feedback scores were more dominant in determining feedback satisfaction than self-ratings. We additionally tested if coefficients on X and Y were equal in magnitude but opposite in sign (see Edwards, 1994, 2002). Results showed that although coefficients on

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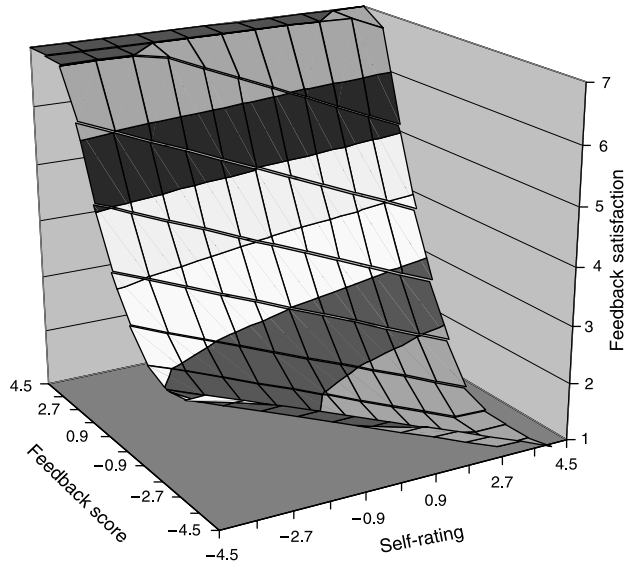

Figure 2. Estimated surface relating congruence between feedback and self-rating to feedback satisfaction for coordinating.

feedback scores and self-ratings had an opposite sign, the effects of feedback scores were greater in magnitude ($p < .01$). As can be seen in column *Fm* in Table 2, self-view certainty did not moderate the relationship between feedback–self-rating congruence and feedback satisfaction for any of the four competencies.

Results of the analyses with perceived utility of feedback as a dependent variable show that the equation for the competency *Decisiveness* was in line with predictions of self-enhancement theory. As can be seen in Table 3, there was a significant positive coefficient on feedback scores. However, as hypothesized, the quadratic regression was moderated by self-view certainty. As can be seen in column *Fm* in Table 3, the additional set of moderator terms explained an additional variance of 4% ($p < .05$) when controlling for the quadratic terms and certainty. To interpret the effect of self-view certainty on the relationship between self-ratings and feedback scores and feedback satisfaction we plotted the response surface for three levels of self-view certainty. If we look along the line of congruence ($X = Y$) in Figure 3a (low certainty), we see a curvilinear relationship, indicating that feedback reactions were most favourable when self-ratings and feedback scores were congruent at their extremes. This is in line with self-verification theory. However, if we look along the $X = -Y$-line, we see that feedback satisfaction increased as feedback scores got higher and self-ratings got lower. This is more in line with self-enhancement theory. If we look at Figure 3b (moderate certainty), we see a curvilinear relationship between feedback scores and feedback utility that is independent of self-ratings. This indicates that people intended to use feedback about *Decisiveness* in the future when scores were very high or very low, regardless of self-ratings. This effect was even more pronounced when certainty was high (Figure 3c). Thus, although the relationship between feedback score–self-rating congruence and feedback utility was moderated by self-view certainty, the observed effect was not in the hypothesized direction that was presented in Figure 1.

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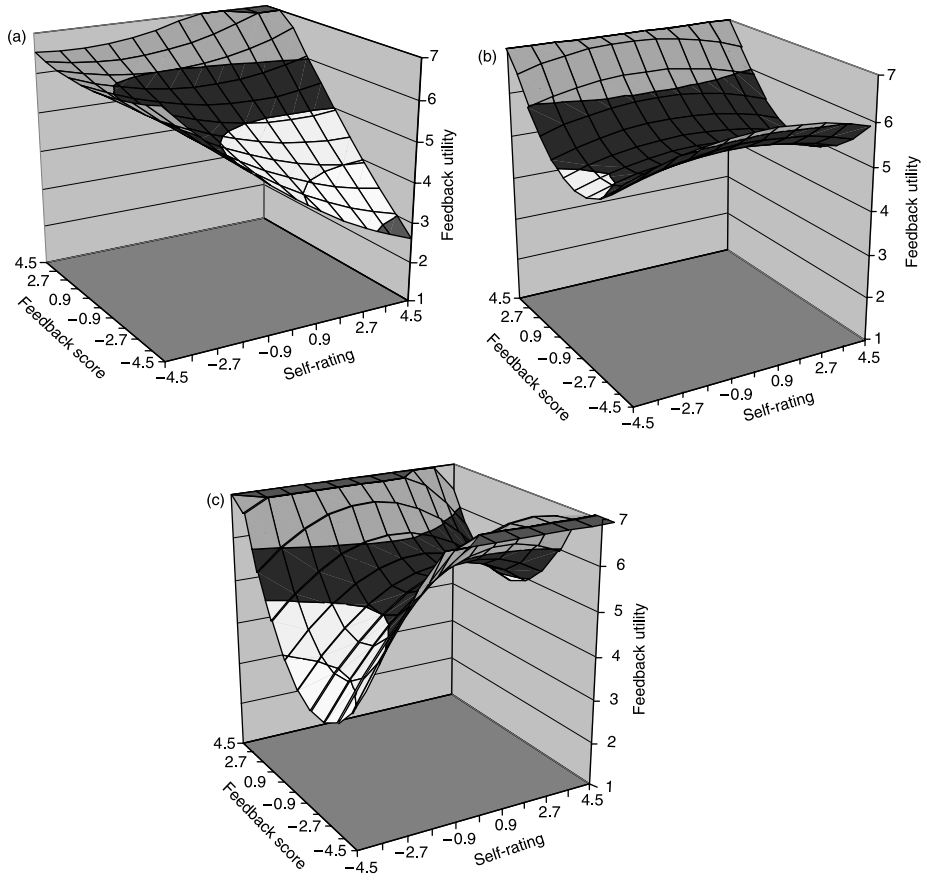

Figure 3. Estimated surfaces relating congruence between feedback and self-rating to feedback utility at three levels of certainty for decisiveness. (a) Certainty low. (b) Certainty moderate. (c) Certainty high.

For the three other competencies, none of the theoretical perspectives were supported with feedback utility as a dependent variable. Although a significant amount of variance was explained ($p < .05$), none of the coefficients reached significance.

Discussion

The aim of this study was to clarify mixed results from previous research concerning feedback reactions. Two competing perspectives in social psychology, self-enhancement and self-verification theory, served as conceptual underpinnings of this study. Our basic premise was that none of them was dominant in guiding feedback reactions. Instead, we hypothesized that self-view certainty would serve as a moderator and would strengthen the effect of congruence between individuals self-views and the performance feedback they receive about these self-views on feedback reactions.

The stringent analytical procedure recommended by Edwards (1994) was especially suited to examine our hypothesis because it enabled us to test if feedback reactions were based on a two-step appraisal versus a one-step appraisal of the feedback. If both components (i.e. feedback scores and self-ratings) accounted for an equal amount of

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variance, feedback reactions were characterized by a two step-appraisal and self-verification theory was supported. When only one component (feedback scores) was significant or more dominant than the other, feedback reactions were characterized by a one-step appraisal and self-enhancement theory was supported.

Results showed that satisfaction with feedback was generally determined by a two-step appraisal of the feedback. Both feedback scores and self-ratings predicted feedback satisfaction in opposite directions. This seems to be in line with predictions of self-verification theory. However, self-verification theory also predicts that both effects will be equally strong. This was not the case. Feedback scores were stronger in predicting feedback satisfaction, indicating that self-enhancement strivings are more dominant than self-verification strivings in guiding feedback satisfaction. This finding is consistent with recent research on self-evaluation in social psychology which has demonstrated that people often try to simultaneously satisfy self-enhancement and self-verification motives when processing feedback. These studies indicated that, while both motives are activated, the self-enhancement motive is typically stronger than the self-verification motive (Bernichon *et al.*, 2003; Sedikides, 1993; Sedikides & Green, 2004; Sedikides & Gregg, 2003; Swann *et al.*, 1989). We also found that people perceived greater utility of feedback when feedback scores were high, regardless of self-ratings, for the competency *Decisiveness*, which is in line with self-enhancement theory. This effect was moderated by self-view certainty, although the effect was not in the predicted direction. We found no other moderating effects of self-view certainty.

In general, little evidence was found for self-verification as the dominant motive underlying feedback reactions. Instead, the results seem to corroborate self-enhancement theory, which predicts that people are motivated to view themselves as favourably as possible. Furthermore, it seems that certainty does not play a key role as a moderator of feedback reactions and, thus, does not strengthen the self-verification motive. This is rather surprising given previous findings in social psychological research that people tend to seek and accept information that is consistent with central self-views (Dauenheimer *et al.*, 1999; Dutton & Brown, 2003; Markus, 1977) and that certainty serves as a moderator of the self-verification motive (Bui & Pelham, 2000; Chen *et al.*, 2004; Pelham & Swann, 1994; Seta, Donaldson, & Seta, 1999; Swann & Pelham, 2002).

Why is there only evidence for self-enhancement in organizational psychology? Or to put it differently, why is no support found for self-verification in organizational psychology? Several explanations seem plausible. First, careful inspection of the literature shows that no research using congruence analyses (Edwards, 1994) has examined self-verification theory. The results of the present study illustrate the importance of using this stringent regression procedure. We also conducted the analyses using an algebraic difference score as an independent variable, as did previous research (e.g. Sweeney & Wells, 1990). Results showed that the algebraic difference was a significant predictor ($p < .01$) of feedback reactions for each competency. Self-view certainty did not moderate the effect of the difference scores on feedback reactions.[1] The results of these analyses would have led us to wrongfully conclude that self-verification theory was supported in all analyses. Also, more recent research supporting self-verification theory continues to use difference scores (e.g. Polzer, Milton, & Swann,

[1] *Results of these analyses are available from the first author.*

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2002). It is possible that many alleged self-verification effects in the literature conceal unequal effects in the magnitude of different components. Future research examining self-verification processes would definitely benefit from using congruence analyses (Edwards, 2001).

Second, consistency effects are not easily obtained or replicated (Cialdini, Trost, & Newsom, 1995). Therefore, researchers have often used specific strategies to make self-verification strivings more pronounced. For instance, self-verification effects have been observed when an over-sampling strategy was used by only selecting subjects that scored in the top and bottom quartiles of an independent variable (e.g. Bosson & Swann, 1999) or when dependent variables were made more extreme by multiplying self-ratings with certainty and importance ratings (e.g. Korsgaard, 1996; Stahlberg, Petersen, & Dauenheimer, 1999).[2] Although these studies provide important insights into the underlying mechanisms and consequences of the self-verification motive, the present study suggests that self-verification strivings are maybe not that dominant in a natural context.

A third possible explanation is the task that is used to provide feedback to participants. Studies in social psychology that support the self-verification perspective on feedback reactions typically use laboratory tasks such as anagrams, block designs and concept formation (e.g. Jussim *et al.*, 1995; Stahlberg *et al.*, 1999). In organizational research which generally supports the self-enhancement motive, employees received feedback about job performance (e.g. Brett & Atwater, 2001; Illies *et al.*, 2006). As shown by Jones (1973), self-verification effects are less likely (compared to self-enhancement effects) to occur when people are highly involved and care about their task performance. Thus, it is possible that self-enhancement is more dominant in guiding feedback reactions in a natural work context.

This study is not without its limitations. First, both self-ratings and certainty ratings were self-report 1-item measures, possibly threatening the reliability of these self-ratings. However, in this on-line setting it was not practically feasible to use extensive questionnaires to measure self-views because participants would not proceed with the in-basket exercise if the preceding questionnaire was too long. However, future research could use other measures of self-view certainty, for instance, by graphically marking uncertainty intervals (Baumgardner, 1993) or by measuring reaction times (Molden & Higgins, 2004). Second, power analysis revealed that power in this study was sufficient to detect small effect sizes. However, moderator effects are often very small and difficult to detect due to statistical power problems in moderated multiple regressions (Aguinis, Beaty, Boik, & Pierce, 2005; McClelland & Judd, 1993; Zedeck, 1971). This could explain why only one moderator effect was found. Third, due to the on-line research setting, we had no control over self-selection and participant drop-out. Therefore, future research should examine whether these findings generalize to specific populations.

This study has important implications for organizations. The procedure of this study corresponds closely to the use of self-assessment instruments that often precede the actual development process. For instance, as part of a development programme, employees are often asked to complete self-assessment questionnaires or participate in a

[2] *Research has shown that the extremity, certainty and importance of self-ratings reflect different constructs and have different cognitive and behavioural consequences (Krosnick et al., 1993; Pelham, 1991; Visser, Krosnick, & Simmons, 2003). Thus, it is not advisable to combine these three constructs in one measure.*

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development centre or 360-degree feedback process. After going through the assessment process, people receive a feedback report with narrative and quantitative feedback on several managerial competencies, as did the participants in this study. Our results suggest that people who receive negative feedback and, thus, are most in need of improvement and development tend to be dissatisfied and reject feedback because it appears inaccurate. Thus, after receiving negative feedback, the chances are high that dissatisfied employees will no longer be motivated to develop their competencies, which is detrimental to their future performance. Therefore, practitioners should seek strategies to increase acceptance of negative feedback. An example of such a strategy is the use of feedback coaches and feedback workshops that assist people in analysing feedback reports and formulating development plans. Recent research shows that managers who participated in a feedback workshop after multi-source feedback changed their behaviour accordingly, whereas managers who only received a feedback report did not (Seifert, Yukl, & McDonald, 2003).

In terms of future research, the problem of negative feedback acceptance is an important and potentially fruitful area of research. Future research should examine specific strategies that organizations might adopt to increase acceptance of negative feedback. Elaboration on feedback seems to be an especially promising variable for designing specific acceptance strategies. Social psychological research shows that self-enhancement prevails when people lack the time and cognitive resources to analyse the obtained feedback. However, when people are motivated or requested to actively process and elaborate feedback, self-enhancement strivings go down, possibly leading to higher levels of feedback acceptance (Hixon & Swann, 1993; Paulhus, Graf, & Van Selst, 1989; Swann, Hixton, Stein-Seroussi, & Gilbert, 1990). Future research should also investigate if an emphasis on the developmental nature of feedback leads to higher feedback acceptance. For instance, it is possible that acceptance of negative feedback in developmental assessment centres is higher because of the developmental nature of the feedback process. Finally, future studies should also pay attention to possible determinants of the perceived utility of feedback. The results of this study indicate that very little variance (about 4%) in feedback utility is explained by feedback scores and self-ratings. Furthermore, the moderating effect of certainty on feedback utility for the competency *Decisiveness* was not as hypothesized. Given the low explained variance and the unexpected pattern of results, caution is needed in interpreting these findings and more research on predictors of feedback utility is needed (for a recent study, see Kinicki *et al.*, 2004). As feedback utility perceptions about the different competencies were highly correlated in this study, it is possible that individual difference variables (e.g. learning goal orientation or openness to experience) underlie these utility perceptions.

In sum, our findings suggest that feedback reactions are dominated by self-enhancement strivings and that self-verification strivings are less prominent. Support for the moderating role of self-view certainty in the feedback process was limited. The general finding that people seem to be dissatisfied after receiving negative feedback and tend to reject unfavourable feedback shows that the study of feedback reactions continues to be an important and fruitful avenue for future research.

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