

# **Feedback Environment, Feedback Fairness, and the Feedback Intervention Theory**

## **Dissertation**

zur Erlangung des akademischen Grades  
des Doktors der Naturwissenschaften

(Dr. rer. nat.)

an der Universität Konstanz

Fachbereich Psychologie

Vorgelegt im April 2008 von

**Jennifer Linda Sparr**

**Tag der mündlichen Prüfung: 16. Juli 2008**

Referentin: Frau Prof. Dr. Sabine Sonnentag, Universität Konstanz

Referent: Herr Prof. Dr. Wilhelm Kempf, Universität Konstanz

## Vorveröffentlichungen der Dissertation

Teilergebnisse aus dieser Arbeit wurden mit der Genehmigung des Fachbereichs Psychologie der Universität Konstanz, vertreten durch Frau Prof. Dr. Sabine Sonnentag, in folgenden Beiträgen veröffentlicht:

### 1. Publikationen

Sparr, J. L., & Sonnentag, S. (2008). Feedback environment and well-being at work: The mediating role of personal control and feelings of helplessness. *European Journal of Work and Organizational Psychology, 17*, 388-412.

Sparr, J. L., & Sonnentag, S. (2008). Fairness perceptions of supervisor feedback, LMX and employee well-being at work. *European Journal of Work and Organizational Psychology, 17*, 198-225.

### 2. Konferenzbeiträge

Sparr, J. L., & Sonnentag, S. (2008, July). Moderating cognitions in the relationship between fairness perceptions of feedback and personal initiative and innovative behavior. Oral Presentation at the XXIX International Congress of Psychology, Berlin, Germany.

Sparr, J. L., & Sonnentag, S. (2007, September). Sind Arbeitnehmer in guten Feedbackumwelten zufriedener und ausgeglichener? Die Bedeutung von wahrgenommener Kontrolle. Vortrag auf der 5. Tagung der Fachgruppe Arbeits- und Organisationspsychologie der Deutschen Gesellschaft für Psychologie, Trier, Deutschland.

## **Ergänzung zur Erklärung nach § 6 Abs. 2 der Promotionsordnung**

Diese Dissertation besteht aus drei empirischen Studien, die jeweils in einem eigenen Aufsatz (Chapter 2 - 4) dargestellt sind. Die vorangestellte Einleitung sowie die abschließende Diskussion betten diese Untersuchungen in einen gemeinsamen Gesamtzusammenhang ein. Alle inhaltlichen und konzeptionellen Arbeiten, Datenaufbereitung und -auswertung sowie Interpretation und schriftliche Darstellung der Ergebnisse wurden eigenständig und ausschließlich von der Autorin unter der Betreuung von Frau Prof. Dr. Sabine Sonntag geleistet.

Die Daten der ersten Studie wurden in Rahmen einer Felduntersuchung im Projekt „Feedback Sign and High Performance“ erhoben. Dieses Projekt von Frau Prof. Dr. Sonntag in Zusammenarbeit mit Prof. Dr. Avraham N. Kluger von der Hebrew University in Jerusalem wurde von der VolkswagenStiftung gefördert. An der Datenerhebung wirkten als studentische Hilfskräfte Katharina Burde, Henrike Schneider und Katharina Weitekamp mit.

Die Daten der dritten Studie wurden im Rahmen des vom Ausschuss für Forschungsfragen (AFF) der Universität Konstanz geförderten Projektes „Vermittelnde Mechanismen in der Beziehung zwischen Feedback und Leistung“ erhoben. An der Datenerhebung wirkten eine Diplomandin, Andrea Tietz, und zwei studentische Hilfskräfte, Katharina Burde und Mareike Haase, mit. Bei der Auswertung dieser Untersuchung wurde die Autorin von Dr. Willi Nagl hinsichtlich der Auswertungsstrategie beraten.

To all those wonderful people who taught and mentored me at any time in my life  
who believed in me and thus helped me grow.

## Acknowledgements

Many people gave time and energy out of their busy lives in order to support me in accomplishing this dissertation. Some gave me valuable knowledge, advice, and inspiration; others offered me emotional support and encouragement. This is a heartfelt “thank you!” to all of them.

First of all I want to express my sincere gratitude to Prof. Dr. Sabine Sonnentag for her careful supervision and guidance of my efforts in compiling this dissertation. I learned a lot about how to do research which I am cordially thankful for because it sharpened my thinking. In particular, I appreciate Sabine’s tireless commitment to and the smoothness of our collaboration in preparing the presentation of our research results to the scientific world.

Also, I really need to thank Prof. Dr. Wilhelm Kempf and Prof. Dr. Alexander Woll for their friendly readiness to be part of my dissertation committee.

I am very thankful for the statistical advice Dr. Willi Nagl offered to me whenever I needed it. I am equally thankful for his warm-hearted interest in my progress since I was a student in his classes and later a student assistant.

I am truly grateful for feedback, discussions, and suggestions provided by my colleagues at the department, Eva J. Mojza, Dr. Cornelia Niessen, Anne Spsychala, Carmen Binnewies, and Jana Kühnel, and also by the work group of Prof. Dr. Martin Kleinmann (University of Zurich). Many thanks go to Lydia Eckstein Jackson and Anke McLintock for improving my English writings and to Katharina Burde, Mareike Haase, Henrike Schneider, Andrea Tietz, and Katharina Weitekamp for their help with data collection.

Without all those people willing to spend their time on filling in questionnaires and to share some of their experiences with me I could not have conducted this research. Thanks!

I really want to thank Eva J. Mojza for being a so good companion during this time, sharing professional and private worries and happiness. Without her friendship and support writing this dissertation would have been much harder and considerably less fun.

Special thanks to Jan R. Böhnke for numerous methodological discussions, his engagement in listening to my worries and sharing successes, his constructive comments on my papers, and particularly for his companionship over a long time during this part of my life.

My parents, Manuela and Artur Sparr, gave me a lot of valuable gifts that helped me going this way: their unconditional support, their belief in my strengths and my capabilities to achieve self-reliantly whatever I chose, their appreciation of my efforts as well as their parental pride when I succeeded. Thank you from all my heart for all that! To my brothers and grandparents many thanks for their good wishes during the whole time - I know they appreciate what I do and that means support to me.

*Konstanz, April 2008*

## Zusammenfassung

Die Bedeutung von Feedback für erfolgreiches Arbeiten scheint unbestritten. Dennoch zeigt die Meta-Analyse von Kluger und DeNisi (1996), dass Feedback zwar im Durchschnitt moderat positiv mit Arbeitsleistung zusammenhängt, häufig aber keinen und in mehr als einem Drittel der Fälle sogar einen negativen Zusammenhang zeigt. Zusammenhänge mit Wohlbefinden bei der Arbeit und weiteren positiven Verhaltensweisen bei der Arbeit sind vergleichsweise noch wenig erforscht. Basierend auf der Feedback-Interventions-Theorie (Kluger & DeNisi, 1996) und ausgehend von der Annahme, dass Feedback grundlegende menschliche Bedürfnisse tangiert, beschäftigt sich die vorliegende Arbeit mit der Frage, wie, warum und unter welchen Bedingungen vorteilhaftes Feedback positiv mit Wohlbefinden und wünschenswertem Verhalten bei der Arbeit zusammenhängt. Unter vorteilhaftem Feedback wird dabei Feedback verstanden, das selbstrelevante Bedürfnisse des Empfängers<sup>1</sup> nicht verletzt sondern, im Gegenteil, diese stärkt. Vorteilhaftes Feedback wird in dieser Arbeit als Feedbackumwelt in der Definition von Steelman, Levy und Snell (2004) sowie als fair wahrgenommenes Feedback (angelehnt an die organisationale Gerechtigkeitsforschung; Colquitt, 2001) operationalisiert. Im Fokus der gesamten Arbeit steht dabei Feedback, das von Vorgesetzten an Mitarbeiter gegeben wird und Informationen über deren Leistung beinhaltet.

In Studie 1 wurde der Zusammenhang zwischen der Feedbackumwelt und Wohlbefinden bei der Arbeit untersucht und wahrgenommene Kontrolle sowie Hilflosigkeitsgefühle als Mediatoren dieser Beziehung betrachtet. In einer Feldstudie wurden 345 Arbeitnehmer aus drei unterschiedlichen Branchen im Querschnitt befragt. Die Ergebnisse der hierarchischen Regressionsanalysen zeigen, dass die Feedbackumwelt positiv mit Arbeitszufriedenheit, und negativ mit Depressivität bei der Arbeit und Kündigungsabsicht zusammenhängt. Wahrgenommene Kontrolle und Hilflosigkeitsgefühle medieren teilweise die Zusammenhänge der Feedbackumwelt mit Arbeitszufriedenheit und Depressivität bei der Arbeit. Hilflosigkeitsgefühle mediert zusätzlich die Beziehung zwischen der Feedbackumwelt und Kündigungsabsichten.

Studie 2 hat den Zusammenhang zwischen wahrgenommener Fairness von Vorgesetztenfeedback, Wohlbefinden und wahrgenommener Kontrolle bei der Arbeit zum Gegenstand. Die Qualität der Austauschbeziehung zwischen Vorgesetztem und Mitarbeiter wurde als Mediator in diesen Beziehungen betrachtet. Neunundneunzig Teilnehmer aus zwei unterschiedlichen Branchen beantworteten zu zwei Zeitpunkten im Abstand von einem halben Jahr jeweils einen Fragebogen. Die Ergebnisse der hierarchischen Regressionsanaly-

---

<sup>1</sup> Der Lesbarkeit halber verwende ich die männliche Form, meine selbstverständlich aber immer beide Geschlechter.

sen zeigen, dass wahrgenommene Fairness von Feedback positiv mit Arbeitszufriedenheit und wahrgenommener Kontrolle zusammenhängt und negativ mit Depressivität bei der Arbeit und Kündigungsabsichten. Diese Zusammenhänge wurden durch die Austauschbeziehung zwischen Vorgesetztem und Mitarbeiter mediiert.

In Studie 3 wurde der Zusammenhang zwischen wahrgenommener Fairness von Vorgesetztenfeedback und Eigeninitiative sowie innovativem Verhalten betrachtet. Im Sinne der Feedback-Interventions-Theorie wurde der feedbackbezogene Fokus auf Details der Aufgabenausführung als Moderator dieser Beziehung untersucht. In einer querschnittlichen Feldstudie wurden Daten von 126 Personen aus unterschiedlichen Branchen erhoben. Die Leistungsdaten wurden mit Hilfe von Fremdeinschätzungen erfasst. Um die Abhängigkeit der Daten durch die Teamstruktur zu berücksichtigen wurden hierarchisch lineare Modelle mit einem Random Intercept und Fixed Effects berechnet. Die Ergebnisse zeigen, dass zwischen Fairness von Feedback und den Verhaltensvariablen nur unter Berücksichtigung des Moderators Zusammenhänge bestanden. Bei häufigem Nachdenken über Aufgabendetails nach Feedback zeigte sich ein positiver Zusammenhang zwischen Fairness von Feedback und Eigeninitiative. Bei seltenem Nachdenken über Aufgabendetails nach Feedback zeigten sich negative Zusammenhänge zwischen Fairness von Feedback und sowohl Eigeninitiative als auch innovativem Verhalten.

Die im Rahmen dieser Dissertation durchgeführten Studien zeigen, dass vorteilhaftes Feedback positiv mit Wohlbefinden bei der Arbeit zusammenhängt und unter bestimmten Bedingungen auch mit positivem Arbeitsverhalten. Als Erklärung für die positiven Zusammenhänge konnten durch das Feedback geförderte Ressourcen wie Kontrollwahrnehmung oder gute Austauschbeziehungen bestätigt werden. Es wird argumentiert, dass vorteilhaftes Feedback einerseits selbstrelevante Bedürfnisse befriedigt und andererseits begünstigt, dass Feedbackempfänger sich im Sinne der sozialen Austauschtheorie (Blau, 1964) mit positivem Verhalten für das Feedback revanchieren. Diese Überlegungen werden in die Feedback-Interventions-Theorie integriert und die Notwendigkeit der Kombination von Feedback mit Zielen, die die Aufmerksamkeit auf die konkrete Aufgabe lenken, wird diskutiert. Damit trägt diese Dissertation zur bestehenden Feedbackliteratur einerseits durch das Aufzeigen der Bedeutung von Feedback für Befinden und Verhalten der Mitarbeiter bei, andererseits durch die Identifikation von vermittelnden und bedingenden Mechanismen. Die vorliegenden Daten sprechen dafür, dass die systematische Verknüpfung von Feedback mit Fairness eine viel versprechende Forschungslinie ist, welche die komplexen Zusammenhänge zwischen Feedback und positiven Outcomes bei der Arbeit verstehen hilft. Als Empfehlung für die Praxis kann aus den vorliegenden Befunden abgeleitet werden, dass die Vermittlung der Bedeutung von Fairness und kontextuellen Merkmalen der Feedbackgabe an Führungskräfte positive Konsequenzen für Wohlbefinden und Verhalten der Mitarbeiter haben kann.

## Summary

The importance of feedback for being successful at work seems undisputed. Nevertheless, the meta-analysis of Kluger and DeNisi (1996) showed that feedback is indeed on average moderately positively related to performance, but that in more than one third of the cases feedback is negatively related to performance. Empirical evidence relating feedback with well-being at work and other positive work behaviors is comparably scarce. Based on the feedback intervention theory (Kluger & DeNisi, 1996) and the assumption that feedback affects human needs for belonging, self-esteem, control, and meaning, this dissertation addresses the question of how, why, and under what conditions beneficial feedback is positively related to well-being and desirable behavior at work. Beneficial feedback is understood as feedback that does not harm, but satisfies self-relevant needs of the feedback recipients. In this dissertation, beneficial feedback is operationalized as a good feedback environment as defined by Steelman, Levy, and Snell (2004) and as feedback that is perceived as fair (in line with organizational justice research; Colquitt, 2001). The focus lies on feedback that supervisors provide to their employees about the employees' performance.

In Study 1, the relationship between the feedback environment and well-being at work was examined. Personal control and feelings of helplessness were studied as mediators of this relationship. In a field study, 345 employees from three different industries answered a questionnaire. Results from hierarchical regression analyses showed that the feedback environment is positively related to the indicator job satisfaction, and negatively related to job depression and turnover intentions. The relationships between feedback environment and job satisfaction, as well as job depression, were partially mediated by personal control and feelings of helplessness. Additionally, feelings of helplessness mediated the relationship between the feedback environment and turnover intentions.

Study 2 examined the relationships between perceived feedback fairness and well-being as well as personal control at work. Leader-member exchange quality was focused upon as a mediating mechanism. Ninety-nine employees from two different industries answered two questionnaires approximately half a year apart. Results from hierarchical regression analyses revealed that perceived feedback fairness was positively related to the indicators job satisfaction and personal control, and negatively related to job depression and turnover intentions. Leader-member exchange mediated these relationships.

In Study 3, the relationship between perceived feedback fairness and personal initiative as well as innovative behavior was studied. Based on the feedback intervention theory, task-detail focus after feedback reception was examined as moderator of these relationships. Data were gathered from 126 employees from different industries. Performance data were assessed with external-source ratings. In order to account for dependencies in the data due



to the team structure, hierarchical linear models were calculated with random intercepts and fixed effects. Results of these models show that the relationship between perceived feedback fairness and personal initiative and innovative behavior was dependent on task-detail focus of the recipient. If feedback recipients think a lot about task details after feedback reception there is a positive relationship between feedback fairness and personal initiative. If they think rarely about task details after feedback reception there is a negative relationship between feedback fairness and personal initiative as well as innovative behavior.

These three studies show that beneficial feedback is positively related to well-being at work and under certain conditions also with positive behavior at work. These relationships can be explained by the resources beneficial feedback provides to feedback recipients, including control perceptions or high-quality exchange relationships. I argue beneficial feedback thus on the one side satisfies self-relevant needs and on the other side fosters the willingness of the feedback recipient to reciprocate the feedback with positive behavior, as social-exchange theory (Blau, 1964) predicts. These considerations are integrated into feedback intervention theory. Additionally, the necessity of combining feedback with goals that direct the attention to the specific task is discussed. This dissertation contributes to the feedback literature in disclosing the relevance of feedback for well-being and behavior of the employees, and in identifying mediating and moderating mechanisms. The present data indicate that a systematic combination of feedback and fairness is a promising line of research that helps to better understand the complex relationships between feedback and positive outcomes at work. As practical implication based on the present results I suggest that informing supervisors about the relevance of fairness and contextual characteristics of feedback delivery, and training their feedback delivery skills, will have positive consequences for well-being and work behavior of the employees.

## Table of Contents

<i>Vorveröffentlichungen der Dissertation</i> .....	<i>i</i>
<i>Ergänzung zur Erklärung nach § 6 Abs. 2 der Promotionsordnung</i> .....	<i>ii</i>
<i>Acknowledgements</i> .....	<i>iv</i>
<i>Zusammenfassung</i> .....	<i>v</i>
<i>Summary</i> .....	<i>vii</i>
<i>Table of Contents</i> .....	<i>ix</i>
<b>1. General Introduction</b> .....	<b>1</b>
<b>1.1 Feedback: Definition and Focus</b> .....	<b>2</b>
<b>1.2 Beneficial Feedback Properties</b> .....	<b>4</b>
1.2.1 Feedback Environment.....	4
1.2.2 Fairness of Feedback.....	5
<b>2. Feedback Environment and Well-Being at Work: The Mediating Role of Personal Control and Feelings of Helplessness (Study 1)</b> .....	<b>8</b>
<b>Introduction</b> .....	<b>9</b>
<b>The Feedback Environment</b> .....	<b>10</b>
<b>Feedback Environment and Well-Being at Work</b> .....	<b>12</b>
Feedback Environment, Personal Control, and Helplessness.....	13
Personal Control, Feelings of Helplessness, and Well-Being at Work.....	14
Feedback Environment, Personal Control, Feelings of Helplessness, and Well-Being.....	15
<b>Method</b> .....	<b>16</b>
Sample and Procedure.....	16
Measures.....	17
<b>Results</b> .....	<b>19</b>
<b>Discussion</b> .....	<b>28</b>
Further Research and Practical Implications.....	30
<b>3. Fairness Perceptions of Supervisor Feedback, LMX and Employee Well-Being at Work (Study 2)</b> .....	<b>32</b>
<b>Introduction</b> .....	<b>33</b>
<b>Feedback and Fairness</b> .....	<b>34</b>
<b>Fairness Perceptions of Feedback and LMX</b> .....	<b>36</b>
<b>LMX, Well-Being, and Control at Work</b> .....	<b>37</b>
<b>Fairness Perceptions of Feedback, LMX, and Well-Being</b> .....	<b>38</b>
<b>Method</b> .....	<b>40</b>
Sample and Procedure.....	40
Measures.....	42
<b>Results</b> .....	<b>47</b>
Bivariate Relationships.....	47
Mediation Analyses.....	51
<b>Discussion</b> .....	<b>54</b>
Limitations.....	55
Implications for Further Research and Practice.....	56

---

<b>4. Perceived Supervisor Feedback Fairness and Proactive Behavior: The Moderating Role of Thinking about Task Details (Study 3)</b> .....	<b>58</b>
Introduction .....	59
Fairness of Supervisor Feedback .....	60
Fairness of Supervisor Feedback and Proactive Behavior .....	61
Focusing on Task Details as a Moderator .....	63
<b>Method</b> .....	<b>64</b>
Procedure and Sample .....	64
Measures .....	66
Data Analysis .....	69
<b>Results</b> .....	<b>70</b>
<b>Discussion</b> .....	<b>78</b>
Study Strengths and Limitations .....	79
Future Research and Practical Implications .....	80
<b>5. General Discussion</b> .....	<b>82</b>
<b>5.1 Overall Summary and Integration of the Results</b> .....	<b>82</b>
5.1.1 Summary of the Studies .....	82
5.1.2 Feedback Environment and Fairness of Feedback .....	84
5.1.3 Feedback Environment, Fairness of Feedback, and Multiple Needs .....	85
5.1.4 Fairness of Feedback and the Feedback Intervention Theory .....	86
<b>5.2 Methodological Strengths and Limitations</b> .....	<b>88</b>
<b>5.3 Implications for Research and Practice</b> .....	<b>90</b>
<b>5.4 Final Conclusions</b> .....	<b>92</b>
<b>6. References</b> .....	<b>94</b>
<b>7. Appendix</b> .....	<b>106</b>
<b>7.1 Additional Analyses Study 1</b> .....	<b>106</b>

# Feedback Environment, Feedback Fairness, and the Feedback Intervention Theory

## 1. General Introduction

“Feedback is not a simple stimulus”  
(Ilgen, Fisher, & Taylor, 1979, p. 349)

Performance feedback, i.e. information about one’s performance, is widely believed to contribute to performance improvement (cf. Kluger & DeNisi, 1996). However, more than one decade ago, the meta-analysis of Kluger and DeNisi (1996) found out that the feedback-performance relationship is more variable than assumed. Overall, these authors found a moderate positive relationship between feedback and performance, but more than one third of the examined relationships were negative. Based on these findings, Kluger and DeNisi (1996) developed the feedback intervention theory as a theoretical framework to explain the variations in the feedback-performance relationship. A conclusion Kluger and DeNisi (1996) drew from their meta-analytic results and theoretical considerations was that feedback might benefit other outcomes besides task performance, for example, job satisfaction and thus “may contribute to long-range persistence on the focal task” (p. 277). Therefore, future research might profit from focusing on a broader range of positive feedback-related outcomes including job satisfaction, well-being at work, and different types of positive work behavior like personal initiative and innovative behavior. Overall, Kluger and DeNisi (1996) call for further development of the feedback intervention theory and examination of the processes that are induced by feedback in studying moderates and mediators of the feedback-performance relationship.

Since its publication in 1996, the Kluger and DeNisi article was cited about 300 times (PsycInfo in March 2008). This fact underlines impressively that this meta-analysis and the feedback intervention theory is probably the most comprehensive database and theory about performance feedback available so far. Nevertheless, there has been hardly any serious attempt to either test the feedback intervention theory assumptions, to systematically examine potential moderators and mediators, or to integrate other streams of feedback research with the feedback intervention theory (for an exception see Anseel, Lievens, & Levy, 2007). In this dissertation, I aim to examine mediators and moderators in the relationship between beneficial feedback properties (i.e., feedback characteristics that make the feedback particularly useful for working individuals) and desirable outcomes at work. Beneficial feedback properties are assumed to enhance the likelihood that individuals’ accept and use the resource feedback (Ashford & Cummings, 1983), rather than reject it. I focus on the feedback envi-

ronment (Steelman, Levy, & Snell, 2004) - a promising stream of recent research -, and fairness of feedback (adapted from organizational justice research; Colquitt, 2001) as characteristics of beneficial feedback. In three studies I collected evidence about if, why, and when this kind of feedback is related to well-being and positive work behavior. Interestingly, although the reciprocal positive relationship between well-being at work and performance is fairly well documented by now (Russell, 2008; Wright, Cropanzano, & Bonett, 2007) and leadership behaviors such as feedback delivery have been found to be meaningful for employee well-being (Offermann & Hellmann, 1996; van Dierendonck, Haynes, Borrill, & Stride, 2004) the relationship between feedback and well-being has been neglected so far. Filling in this gap, in this dissertation the relationship between beneficial feedback, as expressed in feedback fairness and a good feedback environment, and well-being at work is examined with leader-member exchange (LMX) as a mediator of this relationship in Study 1 (Chapter 2), and in Study 2 (Chapter 3) with personal control and feelings of helplessness as mediators. The third study (Chapter 4) focuses on the relationship between fair feedback and proactive behavior at work, as an important group of positive work behaviors (Griffin, Neal, & Parker, 2007). Testing one assumption of the feedback intervention theory, task-detail focus is examined as a moderator of these relationships. In the general discussion, I integrate these studies' findings into an extended version of the feedback intervention theory based on the argument that beneficial feedback properties are likely to contribute to both well-being at work and positive work behavior in serving important self-relevant needs. Moreover, I argue that feedback recipients are likely to experience feedback provided fairly in a good feedback environment as a valuable resource and are willing to reciprocate for this treatment as social exchange theory (Blau, 1964) predicts.

Before the three studies are presented, I define this dissertation's feedback concept and focus, shortly outline the underlying theoretical idea of this dissertation, and characterize the research fields concerning the feedback environment and feedback fairness. Chapter 2 to Chapter 4 present the three studies. These chapters can be read independently of each other. Finally, in Chapter 5 research results are conjointly discussed and integrated into an extended version of the feedback intervention theory, and implications for future research and practice are developed.

### **1.1 Feedback: Definition and Focus**

Feedback is defined as "a special case of the general communication process in which some sender (...) conveys a message to a recipient. In the case of feedback, the message conveys information about the recipient" (Ilgen, Fisher, & Taylor, 1979, p. 349). This definition highlights the fundamental social nature of feedback. In this dissertation, I focus on performance feedback that is information about the appropriateness of one's past performance at work (cf. Ilgen et al., 1979). More specifically, I focus on informal supervisory feed-

back, which is performance feedback delivered by the supervisor in daily work contexts (as opposed to formal feedback, such as performance appraisals or regular feedback sessions). Participants in all of this dissertation's studies were instructed to report about feedback they receive in their daily work context. This definition of informal feedback is related to Greller and Herold's (1975) definition of feedback as a subset of information in the work environment. When Ashford and Cummings (1983) established the feedback-seeking research tradition they highlighted the relevance of informal feedback for the individual's self-concept and striving for goal accomplishment.

The first question of all studies presented is how supervisors can deliver feedback information to their employees, in order to make the resource feedback (Ashford & Cummings, 1983) advantageously available to and acceptable for employees. The second question asks for mechanisms in the relationships between feedback, employee well-being and positive work behavior. My considerations are founded on the basic assumptions of the feedback intervention theory about feedback and action regulation: "(a) Behavior is regulated by comparisons of feedback to goals or standards, (b) goals or standards are organized hierarchically, (c) attention is limited and therefore only *feedback-standard gaps* that receive attention actively participate in behavior regulation, (d) attention is normally directed to a moderate level of the hierarchy, and (e) FIs change the locus of attention and therefore affect behavior" (Kluger & DeNisi, 1996, p. 259). Particularly the last assumption is a crucial perspective for understanding feedback processes: Feedback has the power to direct the recipient's attention to important aspects in his or her work or to the self. According to the feedback intervention theory, attention is assumed to be directed to one of three levels in the simplified goal hierarchy: Meta-task, task-motivation, and task-detail. Focusing on task-motivation aspects is beneficial for task performance, particularly for well-learned tasks. Focusing on task-details in the case of new tasks fosters task-learning and thus performance. Contrarily, focusing on meta-task aspects (e.g., the self) is likely to drain resources from task accomplishment and thus most likely to impair performance.

The key question is: When does feedback direct attention to these three goal-levels? A recent approach trying to answer this question in integrating research on feedback seeking, feedback interventions, and the feedback environment is the model from Anseel et al. (2007). These authors' basic question was how self-assessment ("motivation to obtain a consensually accurate evaluation of the self"; Anseel et al., 2007, p. 218) and self-improvement (motivation to improve traits, abilities, and skills) motives can be activated in feedback seekers and feedback recipients. The authors argue that stimulating these two motives enhances the likelihood of focusing on task-motivation and task-details, and thus performance improvement. As motives and goals are directly tied to needs (Deci & Ryan, 2000), when summarizing the results of this dissertation's studies (Chapter 5), I take a similar ap-

proach in considering basic individual needs that might be threatened or satisfied by feedback. I suggest that beneficial properties of feedback are likely to satisfy important personal needs including the need for belonging, control, self-regard, and meaning (Williams, 1997) and thus facilitate focusing the attention to the task-motivation or task-detail level. In the following section, I introduce the beneficial properties of feedback that are focused in this dissertation's studies.

## **1.2 Beneficial Feedback Properties**

What are key characteristics of beneficial feedback? The probably most comprehensive answer to this question today might be summarized in the feedback environment concept (Levy & Williams, 2004; Steelman et al., 2004) that embraces important contextual characteristics of the feedback process. A good feedback environment is the basis for fruitful feedback interactions and processes in an organization (Anseel & Lievens, 2007; Steelman et al., 2004).

Parallel to these developments in feedback environment research, the relevance of organizational fairness, and even more recently, of fairness of leader behavior became a stream of research with growing importance (van Knippenberg, de Cremer, van Knippenberg, 2007). Although we know that people care about fair treatment (Cropanzano, Byrne, Bobocel, & Rupp, 2001), and feedback research (e.g., Ilgen et al., 1979) has already identified fairness (e.g., accuracy) as important factor for feedback acceptance, there is no systematic research about feedback and fairness established until today. Feedback fairness was recognized by McDowall and Fletcher (2004) as important for the feedback-performance relationship. Results from Leung, Su, and Morris (2001) showed a positive relationship between procedurally fair feedback and feedback acceptance, and Roberson and Steward (2006) found a positive relationship between procedural feedback fairness and the motivation to improve. Most importantly, fairness is known to satisfy self-relevant needs (Cropanzano et al., 2001). Thus, fairness of feedback might be important for our understanding of the feedback process.

Both, the feedback environment and feedback fairness constructs are separately introduced below. In the discussion section (Chapter 5), I point out important similarities between these two concepts.

### **1.2.1 Feedback Environment**

The feedback environment is characterized as “the contextual or situational characteristics of the feedback process. The feedback environment refers to the contextual aspects of day-to-day supervisor-subordinate and coworker-coworker feedback processes.” (Steelman et al., 2004, p. 166). Seven aspects of the feedback environment are focused, namely (1) source credibility characterized by the expertise and trustworthiness of the source, (2) feedback quality which is marked of perceived consistency and usefulness of the feedback,

(3) feedback delivery with positive intentions and consideration, (4) favorable and (5) unfavorable feedback which refer to whether positive and negative feedback is received when performance warrants this kind of feedback, (6) source availability, and (7) promotion of feedback seeking by the respective source.

Evidently, this construct of the feedback environment covers a wide range of important feedback facets. Since the article of Steelman et al. (2004) has been published several authors have adopted the construct and measure. Positive relationships were found between the feedback environment and positive outcomes at work, including satisfaction with feedback, motivation to use feedback, feedback-seeking frequency and leader-member exchange (LMX) (Steelman et al., 2004), organizational citizenship behavior mediated by affective commitment (Norris-Watts & Levy, 2004), managers' accountability of using upward feedback and self-development initiative (Rutkowski & Steelman, 2005), perceptions of politics, job satisfaction, affective commitment and performance (Rosen, Levy, & Hall, 2006), and job satisfaction mediated by LMX (Anseel & Lievens, 2007).

These positive findings underline the relevance of a good feedback environment for positive work-related outcomes. Apparently, in a good feedback environment feedback is readily available as a beneficial resource. Study 1 (Chapter 2) was conducted to learn more about the feedback environment - well-being relationship. Concerning mediating mechanisms, personal control and the experienced absence of control, namely perceived helplessness, were examined. Personal control can be defined as "a psychological construct reflecting an individual's beliefs, at a given point in time, in his or her ability to effect a change, in a desired direction, on the environment" (Greenberger & Strasser, 1986, p. 165). Personal control is known as a good predictor of well-being (Skinner, 1996) that allows individuals to show active engagement within the work environment rather than being reactive and passive (Peterson, 1999) or as Bandura (2000, p. 18) points it out "unless people believe they can produce desired effects by their actions, they have little incentive to act." Actually, possessing personal control is a central characteristic of happy people (Myers & Diener, 1995). Therefore, personal control seemed to be a central mechanism that connects the feedback environment with well-being at work.

### **1.2.2 Fairness of Feedback**

Organizational fairness is concerned with "people's perceptions of fairness in organizations" (Greenberg & Colquitt, 2005, p. xi). Similarly, fairness of feedback can be defined as people's perceptions of feedback fairness. Four dimensions of organizational fairness have been identified, namely distributive, procedural, interpersonal, and informational fairness (Colquitt, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Distributive fairness was the first dimension that received research attention and is defined as fairness of important outcomes at work (e.g., pay) regarding to particular norms (e.g., equity, equality, needs). Sub-



sequently, the importance of procedural fairness was discovered, referring to the fairness of the procedures by which the outcomes are derived (e.g., giving voice to recipients, consistent and unbiased application of decision rules). Later, interactional fairness was treated as an important fairness aspect related to but distinct from procedural fairness, referring to the fairness of the treatment people receive when procedures are implemented. Nowadays, interactional fairness is divided into two separate aspects, namely interpersonal fairness, characterized by respectful treatment, and informational fairness, characterized by adequate explanations of procedures and decisions. Although it is not indisputable whether these dimensions should be treated as separable as they tend to correlate rather highly (Colquitt, Greenberg, & Scott, 2005) in this dissertation I adopted these dimensions for feedback fairness. Accordingly, distributive fair feedback adequately reflects the individual's efforts, performance, and results at work. Procedural feedback fairness refers to feedback derived by processes that rely on accurate information and that are free from bias. Interpersonal feedback fairness refers to polite and respectful treatment of the feedback recipient by the feedback source. Finally, feedback is informational fair when the feedback message is adequately explained and the feedback source communicates the feedback sincerely.

Organizational justice research has found positive relationships of fairness with a broad array of desirable outcomes like job satisfaction, in-role and extra-role performance, and commitment (Colquitt et al., 2001; Cohen-Charash & Spector, 2001). A meta-analysis of studies examining contingent and non-contingent leader rewards (Podsakoff, Bommer, Podsakoff, & MacKenzie, 2006) showed that contingent rewards (i.e., rewards that are directly connected with the recipient's behavior) were positively related to employee fairness perceptions and negatively related to role ambiguity. Moreover, contingent rewards were positively related to employee motivation and performance. Feedback also can be considered as a reward (Ashford & Cummings, 1983) and if this feedback is provided contingently to one's behavior, enhanced fairness perceptions, and subsequently more positive behavior at work are likely. Van Knippenberg and colleagues (2007) conclude from their review that leader fairness matters to employees and that there is good news in that leader fairness can be trained (e.g., Greenberg, 2006; Skarlicki & Latham, 2005). In this dissertation, these conclusions are translated to fairness of feedback. As feedback delivery is an important leadership task (Leung et al., 2001) and fairness of leader behavior has been shown to be positively related to desirable outcomes (van Knippenberg et al., 2007) examining fairness of feedback seems to be promising.

Two studies were conducted in order to address both well-being and work behavior as outcomes of supervisor feedback fairness. While LMX was examined as a mediator in the relationship between fairness of feedback and well-being at work, thinking about task details after feedback reception was examined as a moderator of the fairness of feedback - work

behavior relationships. Fairness is an important aspect in exchange relationships including LMX (e.g., Roch & Shanock, 2006; Stinglhamber, De Cremer, & Mercken, 2006). LMX is examined as an important mechanism that connects fairness of feedback to well-being in Study 2 (Chapter 3). Moreover, as the relationship between feedback and performance outcomes is not consistent, feedback intervention theory and considerations about feedback fairness are combined in testing the hypothesis that there is a positive relationship between feedback fairness and personal initiative and innovative work behavior contingent on the individual's tendency to think about task details based on feedback received (Study 3, Chapter 4). Although beneficial feedback might directly contribute to employee well-being, I assume that its contribution to positive work behavior is dependent on focusing the attention to details of the tasks.

In summary, this dissertation's studies' theoretical contribution is the systematic combination of supervisor feedback and fairness. The empirical contribution consists of connecting feedback fairness and the feedback environment to important outcomes, and the exploration of important mechanisms of these relationships.

## **2. Feedback Environment and Well-Being at Work: The Mediating Role of Personal Control and Feelings of Helplessness (Study 1)<sup>2</sup>**

Jennifer L. Sparr & Sabine Sonnentag

This study examines employees' personal control and feelings of helplessness at work as partial mediators of the relationship between the supervisor-employee feedback environment and well-being (job satisfaction, job depression, job anxiety, turnover intentions) at work. Findings are reported from a cross-sectional field study with 345 participants from three different industries. Hierarchical regression analyses showed that feedback environment was positively related to job satisfaction, personal control over information and decisions, and was negatively related to helplessness, job depression, and turnover intentions. Furthermore, personal control partially mediated the relationships between feedback environment and job satisfaction as well as job depression. Helplessness partially mediated the relationships between feedback environment and job depression, job satisfaction, and turnover intentions. This study adds to the literature on feedback environment in highlighting the importance of the supervisor-employee feedback environment for well-being at work and introducing personal control and helplessness as mediating variables.

---

<sup>2</sup> This study is part of a larger research project funded by the VolkswagenStiftung. This grant is gratefully acknowledged. We would like to thank Katharina Burde, Henrike Schneider and Katharina Weitekamp for their support in data collection and Eva J. Mojza and Cornelia Niessen for their helpful comments on earlier drafts of this paper.

This manuscript is accepted for publication in the *European Journal of Work and Organizational Psychology*. Sparr, J. L., & Sonnentag, S. (2008). Feedback environment and well-being at work: The mediating role of personal control and feelings of helplessness. *European Journal of Work and Organizational Psychology, 17*, 388-412.

The results of this study have been presented in September 2007 at the 5. Tagung der Fachgruppe Arbeits- und Organisationspsychologie der Deutschen Gesellschaft für Psychologie, Trier, Germany.

## Introduction

Prior research about employee reactions to performance feedback and subsequent motivation, performance, and affect at work (e.g., Ashford & Cummings, 1983; Ashford, 1986; Fedor, 1991; Greller & Herold, 1975; Hackman & Oldham, 1976; Kinicki, Prussia, Wu, & McKee-Ryan, 2004; Kluger & DeNisi, 1996; van den Berg & Feij, 2003) has shown that performance feedback is an important resource at work (Ashford & Cummings, 1983). Nevertheless, the relationships between performance feedback and subsequent performance (for a meta-analysis see Kluger & DeNisi, 1996), well-being at work, and the decision to quit a dissatisfying job (e.g., Walsh, Ashford, & Hill, 1985) are rather inconsistent. Several authors have pointed out that in order to learn about why and how people react to feedback it might not be enough to focus on isolated feedback events, but that it is necessary to examine the context in which feedback takes place (e.g., Anseel & Lievens, 2007; Becker & Klimoski, 1989; Herold & Parsons, 1985; Levy & Williams, 2004). This context has been called feedback environment and was first described as workers' perceptions about the availability of specific performance information in their work environment (Herold & Parsons, 1985). Later, the term feedback environment was used to describe work environments that are supportive for feedback interactions and feedback processes in organizations and it thereby referred to contextual aspects of the feedback process (Levy & Williams, 2004; Steelman, Levy, & Snell, 2004).

The interplay of these contextual aspects referring to the feedback message, feedback presentation, and feedback reception in daily work communication (Norris-Watts & Levy, 2004) is likely to affect work-related outcomes in a more complex way as it could be captured by solely focusing on feedback frequency and feedback sign (positive feedback vs. negative feedback). Therefore, taking into account the feedback environment promises to give new insights into the relationship between feedback and important work-related outcomes. Additionally, an enhanced understanding of the complexity of how employees perceive feedback in the work context might be of high practical relevance for instructing leaders about how to constructively give feedback and how to encourage feedback seeking of their employees in order to enhance job performance and well-being at work.

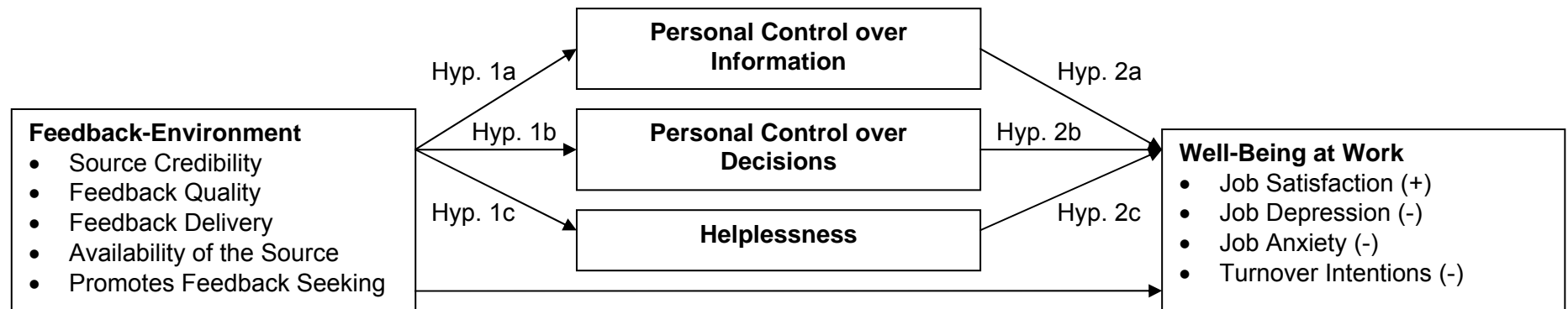
The purpose of our study was twofold: first, we aimed at replicating earlier findings on the relationship between feedback environment and job satisfaction (Anseel & Lievens, 2007; Rosen, Levy, & Hall, 2006) and at extending this research to additional indicators of well-being. Specifically, well-being at work or "job-specific well-being" has been defined as "people's feelings about themselves in relation to their job" (Warr, 1999, p. 393). Warr (1999) conceptualized job-related well-being around three axes: displeasure-to-pleasure, with the positive pole being satisfaction, anxiety-to-comfort, and depression-to-enthusiasm. We chose job anxiety, job depression, and job satisfaction to represent one pole of each dimension.

Furthermore, we assessed turnover intentions as a behavioral indicator for well-being at work because turnover intentions frequently were shown to be related to well-being at work (George & Jones, 1996; Griffeth, Hom, & Gaertner, 2000; Warr, 1999).

Second, we examined the role of personal control and helplessness as partial mediators in the relationship between the feedback environment and well-being at work (see Figure 1 for our conceptual model). Thereby, we intended to extend the existing knowledge about the feedback environment in proposing an important mechanism through which the feedback environment establishes a positive relationship with well-being at work.

### **The Feedback Environment**

Steelman et al. (2004, p. 166) described the feedback environment as “the contextual or situational characteristics of the feedback process. The feedback environment refers to the contextual aspects of day-to-day supervisor-subordinate and coworker-coworker feedback processes.” Two sources providing the feedback environment of employees are distinguished, namely supervisors and co-workers (Steelman et al., 2004). For both of these sources the feedback environment captures important facets that have been derived from the literature as being relevant to feedback processes, namely source credibility, feedback quality, feedback delivery, favorable and unfavorable feedback, source availability and promotion of feedback seeking. Source credibility refers to the perceived expertise and trustworthiness of the feedback source, thus capturing the recipient’s trust in the ability and motivation of the source to provide accurate feedback. Feedback quality is characterized by the perceived consistency and usefulness of the feedback, thus concerning the informational value of the feedback message. Feedback delivery embraces the perception of the source’s intention and consideration in feedback delivery. Favorable and unfavorable feedback refers to the recipient’s perception of being provided with positive respectively negative feedback when he or she believes that his or her performance warrants this kind of feedback. Source availability describes the perceived amount of contact an employee has to the source of feedback and the possibilities to approach the source in order to obtain feedback. Finally, promotion of feedback seeking refers to the extent the source encourages, supports, and rewards actively asking for feedback by the recipient.



*Figure 1.* Conceptual model examined in the study. Partial mediation between feedback environment and well-being at work via personal control over information is hypothesized in Hypotheses 3a, via personal control over decisions is hypothesized in Hypothesis 3b, and via helplessness is hypothesized in Hypothesis 3c. Signs in brackets indicate the direction of the postulated relationships.

Steelman et al.'s (2004) conceptualization of the feedback environment has been examined in a series of studies by now, connecting the feedback environment to a variety of work-related outcome variables, including satisfaction with feedback, motivation to use feedback, feedback-seeking frequency and leader-member exchange (LMX) (Steelman et al., 2004), organizational citizenship behavior mediated by affective commitment (Norris-Watts & Levy, 2004), managers' accountability of using upward feedback and self-development initiative (Rutkowski & Steelman, 2005), perceptions of politics, job satisfaction, affective commitment and performance (Rosen et al., 2006), and job satisfaction mediated by LMX (Anseel & Lievens, 2007).

In the present study, we chose to focus on the supervisor as source of feedback, similarly to earlier studies (Anseel & Lievens, 2007; Norris-Watts & Levy, 2004). A first effective attempt to improve the feedback environment could be to integrate knowledge about the feedback environment into leadership trainings. On the one hand, supervisors learning beneficial ways how to provide high quality feedback and how to encourage feedback seeking probably shape a positive feedback environment for and with their subordinates. On the other hand, trained supervisors can serve as role models for their subordinates by demonstrating how to deal with feedback constructively and thus, spreading the positive consequences also to the co-worker part of the feedback environment because employees might adopt positive feedback-related behaviors from their supervisors.

We decided to focus on five out of the seven feedback environment facets, leaving favorable and unfavorable feedback out. Instead, we control for frequency of plain negative and positive feedback in our analyses. This decision was based on two reasons. First, this procedure gives us the opportunity to study qualitative aspects of the feedback environment separately from feedback quantity and additionally examine the relationships between the feedback environment and frequency of feedback. Second, although we acknowledge the importance of the perceived frequency of positive and negative feedback when it is warranted by the recipient's performance, we are concerned about integrating favorable and unfavorable feedback into the overall feedback environment concept as unfavorable feedback had substantially lower relationships to the outcomes examined by Steelman et al. (2004) than the other facets. In addition, the favorable feedback scale contains items not reflecting feedback warranted by performance but purely frequency of positive feedback. Based on these considerations we chose to assess plain frequency of feedback in our data and use them as control variables.

### **Feedback Environment and Well-Being at Work**

By definition, an advantageous feedback environment is characterized by a wealth of information that is high in quality, appropriately and benevolently provided or readily available from trustworthy sources. These benevolent characteristics of the feedback environment are

likely to provide employees with important information which they need to fulfill their jobs and which they can readily accept because they feel adequately treated by a trustworthy feedback source (cf. Ilgen, Fisher, & Taylor, 1979). While a good feedback environment has already been shown to positively relate to performance (Norris-Watts & Levy, 2004; Rosen et al., 2006), we assume that the focused contextual aspects of feedback also influence employee well-being. In an advantageous feedback environment, besides being provided with sufficient and high-quality information the employee is likely to feel appreciated, carefully treated, and supported from the supervisor. Providing feedback adequately has been recognized as an important leadership behavior enhancing the well-being of subordinates (van Dierendonck, Haynes, Borrill, & Stride, 2004). Below we argue that an advantageous feedback environment unfolds its benevolent effects on employee well-being by strengthening employees' personal control and reducing feelings of helplessness.

### **Feedback Environment, Personal Control, and Helplessness**

Control is a rather heterogeneously defined construct in psychology (Skinner, 1996). We use the term personal control at work by applying the definition of Peterson (1999). "Personal control" refers to the individual's belief that he or she can behave in ways that maximize good outcomes and/or minimize bad outcomes." (Peterson, 1999, p. 288). In our study, we focused on personal control over two different aspects, namely personal control over information and personal control over decisions at work. In this context, personal control refers to the individual's belief that he or she is able to obtain important information for and about his or her work and that he or she can influence the way work is done and decisions are made within the work context.

In order to gain personal control over a specific aspect of the environment an individual needs to perceive his or her behavior to be related to desired outcomes (Greenberger & Strasser, 1986). Therefore, information is needed about the relationship between the behavior and the outcomes. As information is one important predictor of personal control in the work context (Skinner, 1996) and feedback information is a valuable type of information (Ashford & Cummings, 1983; Ilgen et al., 1979), adequate feedback about one's performance and outcomes at work are crucial for experiencing control (cf. Greenberger & Strasser, 1986) and for actually making use of one's control possibilities. An advantageous feedback environment as characterized before provides feedback information that enables employees to learn about others' expectancies and standards concerning their behavior, to gain an adequate picture of their competences and actual performance, to accurately assess their behavior efficiency and to quickly figure out if changes in their behavior go into the right direction. The promotion of feedback seeking enables employees to safely get feedback information whenever they need it. As this information is necessary to make informed decisions and an advantageous feedback environment is likely to provide this performance information in



an optimal way personal control over decision making is fostered. In summary, we assume that an advantageous feedback environment gives a high degree of personal control over performance-related information to the employee and enhances personal control over decisions.

Helplessness might be considered as the opposite of personal control: “Helplessness is the psychological state that frequently results when events are uncontrollable” (Seligman, 1975, p. 9). In experimental research about learned helplessness, participants typically are exposed to uncontrollable, usually unpleasant situations (e.g., unsolvable tasks). People learn in these situations that they cannot change the situation through their own behavior. When these people afterwards are exposed to a similar situation that objectively is under their control, they usually stay passive and do not explore their control possibilities (Peterson, Maier, & Seligman, 1993). In work settings, employees are confronted with situations in which they are uncertain about how to act in order to reach their goals (cf. Ashford & Cummings, 1983). If this uncertainty can not be dissolved and ways to reach one’s goal remain unclear (e.g., because feedback is not available) feelings of helplessness are likely to occur. Contrarily, a beneficial feedback environment is likely to provide employees with sufficient and useful feedback about their work behavior and performance and helps to overcome uncertainty, thus avoiding feelings of helplessness. Additionally, being provided with high quality feedback and being encouraged to actively seek feedback when needed is likely to give a feeling to the employee that he or she does not have to deal with the problem on his or her own but has the possibility to get some help if needed. We included helplessness into our study to examine a general lack of control beliefs in addition to our focus specifically about personal control over information and decisions.

We state the following hypothesis:

*Hypothesis 1.* The quality of supervisor-employee feedback environment is positively related to (a) personal control over information, to (b) personal control over decisions, and (c) negatively related to feelings of helplessness at work.

### **Personal Control, Feelings of Helplessness, and Well-Being at Work**

A wealth of research found personal control to be an important predictor of well-being (cf. Skinner, 1996; Spector, 2002). In a recent literature review, Warr (2007) showed that opportunities for personal control have been positively related to each of the three well-being axes, namely displeasure-to-pleasure, anxiety-to-comfort, and depression-to-enthusiasm. As many of these studies assessed control opportunities in self-report, we assume that these results generalize to personal control defined as a control believe. Additionally, Spector (2002) points to the importance of personal control for the perceptions of workplace stressors, thus highlighting the role of personal control for employee well-being. On the one side, personal control is beneficial to well-being in itself because the person perceives him- or her-

self to be able to achieve his or her goals through self-determination. On the other side, when employees perceive control over the work environment, they may manipulate several aspects of their environment which, in turn, might have beneficial effects for their well-being (Warr, 2007). Access to work-related and performance-related information is an important basis for successfully fulfilling one's job requirements. Being deprived of this information might lessen the chances of successful working and thus induces worry and stress for the employee. Therefore, personal control over information at work prevents employees from this source of stress and its negative consequences for well-being (cf. Spector, 2002). We expect personal control over decisions also to be positively related to well-being at work because this type of control enables employees to shape their work environment and work activities according to their own preferences.

Learned helplessness has been found to be related to feelings of depression, anxiety and physical illness (Peterson et al., 1993; Seligman, 1975). Although feelings of helplessness in work settings might be less severe than feelings of general helplessness in life they nevertheless are likely to impair well-being. Empirically, helplessness at work has been found to be positively related to work alienation, which is lack of job involvement and organizational identification (Ashforth, 1989), and to be negatively related to work adjustment in newcomers (Ashforth & Saks, 2000). These findings indicate the relevance of helplessness for employees' adaptation and well-being in organizations.

We therefore state the following hypothesis:

*Hypothesis 2.* (a) Personal control over information and (b) personal control over decisions are positively related and (c) feelings of helplessness are negatively related to well-being at work.

### **Feedback Environment, Personal Control, Feelings of Helplessness, and Well-Being**

We finally assume that an advantageous feedback environment is positively related to employee well-being at work. An advantageous feedback environment offers several valuable resources to employees, which are likely to establish and thus mediate the hypothesized relationship. We focused on personal control over information and decisions at work (and feelings of helplessness as the opposite of control) as important resources. Of course, personal control is not the only resource that employees gain from an advantageous feedback environment. For example, the finding of Anseel and Lievens (2007) that the feedback environment's relationship with job satisfaction was mediated by LMX quality stresses the importance of other aspects. We therefore assume a positive relationship between feedback environment and well-being at work being *partially* mediated by personal control over information, personal control over decisions, and helplessness:

*Hypothesis 3.* (a) Personal control over information, (b) personal control over decisions, and (c) feelings of helplessness partially mediate the relationship between

the quality of the supervisor-employee feedback environment and well-being at work.

## Method

### Sample and Procedure

Three hundred and forty-five employees from different organizations in Germany participated in this study. On average the participants were 40.47 years old ( $SD = 10.11$ ), 53.3% were female. About half of the sample had a university degree or a comparable education (55.0%), 9.4% had a craftsman's diploma, 33.8% had completed an apprenticeship and only 1.8% indicated to have no formalized professional training. Mean professional experience was 18.27 years ( $SD = 10.63$ ) and mean job tenure was 14.31 years ( $SD = 9.21$ ). About one third of the sample indicated to have a supervisory position (32.8%) and more than half of the sample worked in teams (57.2%). This overall sample consists of sub-samples from three different industries, namely (1) public administration ( $n = 218$ ), (2) research and development (R&D) ( $n = 96$ ) and (3) health care ( $n = 30$ ). One person failed to provide the information about his or her industry.

Organizations belonging to these three industries were contacted by phone and invited for participation in this study introduced as research on "feedback, reactions to feedback, and behavior at work". When a contact person (e.g., head of personnel department) signaled interest in participation we emailed them information material explaining the aim and procedure of the study. We asked the contact persons to send the information material to their employees and to encourage them to participate. As an incentive for participation we offered feedback about the results of the study. For organizations taking part with ten or more participants we additionally offered specific feedback about results from this organization's members compared to the results of the whole sample from the respective industry. Participants could sign up individually per email or send a fax form. After signing up we sent an email to the participants with the web link to the questionnaire.

A total of 395 persons indicated that they would like to participate in the study via online questionnaire (119 participants from R&D, 22 participants from health care, 254 participants from public administration organizations). The number of filled-in online questionnaires was 332, which indicates a response rate of 84.05%. We additionally sent about 65 paper questionnaires to three different hospitals where participants did not have access to the internet. Thirteen paper questionnaires were returned. The low response rate of the paper questionnaire procedure occurred because contact persons in these hospitals severely overestimated the number of persons willing to participate. In total, 345 persons completed the self-report questionnaire (total response rate: 76.67%). Most of these individuals (62.8 %) worked in public administration organizations, 28.5 % worked in R&D, and the 8.6% worked

in hospitals. Please note that the following analyses are based on 344 persons because one person had missing values at a mediator variable.

### Measures

All data are based on participants' self-reports. Questionnaires were provided in German. Table 1 displays means, standard deviations, and zero-order correlations between study variables. In all cases where no German version of the scales we used was available, we employed a translation-back-translation procedure to translate the items from English into German language.

*Supervisor-employee feedback environment.* To assess the supervisor-employee feedback environment we used the supervisor part of the feedback environment scale (FES) from Steelman et al. (2004). Specifically, we concentrated on five core facets of the feedback environment as created by the supervisor, namely *source credibility* ("My supervisor is fair when evaluating my job performance"), *feedback quality* ("My supervisor gives me useful feedback about my job performance"), *feedback delivery* ("My supervisor is tactful when giving me performance feedback"), *source availability* ("My supervisor is usually available when I want performance information") and *promotion of feedback seeking* ("I feel comfortable asking my supervisor for feedback about my work performance"). Based on information about item-scale intercorrelations as provided by the reliability analysis we chose the three best fitting items from each facet, resulting in one overall feedback-environment measure with 15 items. Participants answered on a 7-point Likert-type scale (1 = *I strongly disagree*; 7 = *I strongly agree*). Cronbach's Alpha was .94. The five single facets were highly correlated and had similar relationships to the mediator variables and outcomes compared to the overall feedback environment measure (see Table 1).

*Personal control.* We developed three items to measure personal control over information ("How much influence do you have on the information-exchange in your department?", "How much influence do you have on getting important information about your work?" and "How much influence do you have in being well informed about the results of your work?"). Personal control over decisions was measured with a three-item sub-scale from Menon's (2001) empowerment questionnaire. One sample item is "I can influence decisions taken in my department." Participants answered on a 5-point Likert-type scale (1 = *very little*; 5 = *very much*) for the information-control scale and on a 6-point Likert-type scale (1 = *I do not agree at all*, 6 = *I do fully agree*) for the decision-control scale. Cronbach's Alphas were .82 and .88 respectively. We performed a confirmatory factor analysis to differentiate between these two personal control constructs. Results showed that the two-factor solution had a good fit ( $\chi^2 = 17.14$ ,  $df = 8$ ,  $p < .05$ ; RMSEA = .06, GFI = .98, CFI = .99) and fitted the data better than a one-factor solution ( $\Delta\chi^2 = 269.00$ ,  $df = 1$ ,  $p < .001$ ).

*Helplessness.* We used two items from the helplessness scale of Bretkopf (1985) which can be well applied to the work context. We asked participants how often they have the following thoughts at work: “My situation is completely out of control” and “Even though I struggle, however, there are no results”. These questions mirror typical helplessness situations that are characterized by lack of control and lack of contingency between one’s actions and the outcomes. Participants answered on a 5-point Likert-type scale (1 = *very seldom*, 5 = *very often*). Cronbach’s Alpha was .79.

We performed a confirmatory factor analysis to make sure that the two personal control variables and the helplessness variable represented different constructs. Results showed that the three factor solution had a good fit ( $\chi^2 = 36.16$ ,  $df = 17$ ,  $p < .01$ ; RMSEA = .057, CFI = .99, GFI = .97) and was significantly better than a one-factor solution ( $\Delta\chi^2 = 444.32$ ,  $df = 3$ ,  $p < .001$ ).

*Negative affect at work.* We measured the dimensions “job depression” and “job anxiety” with the scale of Warr (1990). Sample items were “When you reflect on the last few weeks, how often did you feel depressed at work?”, “When you reflect on the last few weeks, how often did you feel tense at work?”. Participants answered on a 5-point Likert-type scale (1 = *never*, 5 = *always*). Cronbach’s Alphas were .85 and .71 respectively. Confirmatory factor analyses showed that the two dimensions of negative affect at work were well distinguishable ( $\chi^2 = 23.58$ ,  $df = 8$ ,  $p < .01$ ; RMSEA = .08, GFI = .98, CFI = .99). The two-factor solution had a significantly better fit than the one-factor solution ( $\Delta\chi^2 = 52.65$ ,  $df = 1$ ,  $p < .001$ ).

*Job satisfaction.* We measured job satisfaction using the faces scale from Kunin (1955) with the answer scale ranging from (1) “*I am very dissatisfied*” to (7) “*I am extraordinarily satisfied*”. We used this single-item measure to assess overall job satisfaction relying on meta-analytic findings, that single-item measures of job satisfaction are highly correlated to scale measures (corrected  $r = .67$  for face measures; Wanous, Reichers, & Hudy, 1997); thus, using a single-item measure is a worthy alternative to less parsimonious scales.

*Turnover intentions.* We combined three items to assess turnover intentions. These items were namely “I often think on quitting.”, “I already looked around for another job.” and “How likely is it that you will quit your job voluntarily during the next 12 months?” Participants answered the first two items on a 7-point Likert-type scale (1 = *does not apply at all* to 7 = *does fully apply*) and the third item on a 7-point Likert-type scale (1 = *very unlikely* to 7 = *very likely*). Cronbach’s Alpha was .77.

To make sure that our well-being at work measures were distinct constructs, we performed a confirmatory factor analysis to separate job depression, job anxiety, and turnover intentions. This three-factor solution showed good fit to the data ( $\chi^2 = 42.19$ ,  $df = 24$ ,  $p < .05$ ; RMSEA = .05, GFI = .97, CFI = .99) and was significantly better than the one-factor solution

( $\Delta\chi^2 = 304.63$ ,  $df = 3$ ,  $p < .001$ ). Because helplessness was highly correlated to the well-being variables we additionally performed a confirmatory factor analyses to check the distinctness of these constructs. The four-factor solution with job anxiety, job depression, turnover intentions, and helplessness showed good fit to the data ( $\chi^2 = 63.54$ ,  $df = 38$ ,  $p < .01$ ; RMSEA = .044, GFI = .97, CFI = .99) and was significantly better than the one-factor solution ( $\Delta\chi^2 = 391.20$ ,  $df = 6$ ,  $p < .001$ ).

*Control variables.* As control variables we assessed industry type and frequency of positive and negative feedback from the supervisor. More specifically, we created two dummy variables for the three industry types: Industry Type 1 (1 = health care, 0 = others), Industry Type 2 (1 = R&D, 0 = others). Including the frequency of supervisor feedback enabled us to examine the qualitative aspects of the feedback environment regardless of the amount of feedback received, which may greatly differ between individuals. Participants answered to the questions “How often did you get negative feedback from your supervisor in the last time?” and “How often did you get positive feedback from your supervisor in the last time?” Answer options ranged from 1 = *less than once a month* to 7 = *several times a day*.

## Results

We used hierarchical regression analyses to test our hypotheses. In a first step, we entered the control variables, namely the two industry type dummies and frequency of positive and negative feedback from the supervisor into the regression models. In a second step, we entered feedback environment, respectively the mediator variables, as predictors.

In a first set of models, we tested Hypotheses 1a to 1c, namely the relationships between feedback environment and the mediator variables personal control over information, personal control over decisions, and helplessness. Results are displayed in Table 2. Analysis in the first step showed that both industry types had significant positive relationships with personal control over information and decisions, indicating that employees from hospitals and R&D reported more personal control than employees from public administration. Frequency of negative feedback from the supervisor was negatively related to personal control over information, personal control over decisions and positively related to helplessness. Frequency of positive feedback from the supervisor was positively related to personal control over information and negatively related to helplessness. Feedback environment entered in the second step was positively related to personal control over information, explaining an additional 7 percent of the variance, and negatively related to helplessness, explaining an additional 4 percent of the variance. Feedback environment was only marginally related to personal control over decisions. Thus, Hypotheses 1a and 1c received support from the data, Hypothesis 1b was marginally supported.

Table 1  
Means, Standard Deviations, Reliability, and Intercorrelations

Variable	M	SD	1	2	3	4	5	6	7
1. Industry 1	0.08	0.28	-						
2. Industry 2	0.28	0.45	-.19**	-					
3. Frequency negative feedback	1.49	0.92	-.09	.03	-				
4. Frequency positive feedback	2.15	1.18	-.01	.14*	.07	-			
5. Personal control over information	3.50	0.86	.09	.28**	-.18**	.24**	.82		
6. Personal control over decisions	4.07	1.24	.11*	.16**	-.14**	.10	.53**	.88	
7. Helplessness	1.53	0.84	-.05	.04	.32**	-.21**	-.27**	-.17**	.79
8. Feedback environment	4.67	1.25	.12*	.15**	-.34**	.44**	.43**	.21**	-.39**
9. Feedback quality	4.67	1.50	.05	.21**	-.28**	.43**	.42**	.22**	-.40**
10. Feedback credibility	4.95	1.45	.06	.12*	-.34**	.39**	.40**	.20**	-.41**
11. Feedback delivery	4.59	1.57	.11*	.10	-.39**	.35**	.33**	.14**	-.30**
12. Promotes feedback seeking	4.24	1.35	.17**	.14**	-.32**	.37**	.40**	.22**	-.31**
13. Source availability	4.53	1.45	.14**	.01	-.15**	.36**	.30**	.13*	-.26**
14. Job depression	1.97	0.89	.02	-.08	.30**	-.18**	-.32**	-.21**	.60**
15. Job anxiety	2.52	0.74	-.01	.10	.23**	-.13*	-.16**	-.08	.49**
16. Job satisfaction	5.17	1.12	-.03	.22*	-.29**	.24**	.46**	.37**	-.52**
17. Turnover intentions	1.74	1.20	.05	.06	.24**	-.06	-.14**	-.11*	.42**

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. Cronbach's Alphas appear along the diagonal. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

Table 1 (continued)

<i>Variable</i>	8	9	10	11	12	13	14	15	16	17
1. Industry 1										
2. Industry 2										
3. Frequency negative feedback										
4. Frequency positive feedback										
5. Personal control over information										
6. Personal control over decisions										
7. Helplessness										
8. Feedback environment	.94									
9. Feedback quality	.90**	.89								
10. Feedback credibility	.91**	.83**	.88							
11. Feedback delivery	.78**	.67**	.70**	.82						
12. Promotes feedback seeking	.78**	.68**	.65**	.58**	.66					
13. Source availability	.79**	.57**	.62**	.49**	.56**	.72				
14. Job depression	-.36**	-.33**	-.36**	-.22**	-.30**	-.29**	.85			
15. Job anxiety	-.20**	-.13*	-.19**	-.11*	-.18**	-.19**	.61**	.71		
16. Job satisfaction	.43**	.44**	.43**	.32**	.32**	.27**	-.62**	-.36**	-	
17. Turnover intentions	-.32**	-.27**	-.30**	-.23**	-.24**	-.25**	.44**	.26**	-.43**	.77

*Note.* Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. Cronbach's Alphas appear along the diagonal. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.



Table 2

*Regression Results for Hypotheses 1 a to 1c*

	Personal control over informa- tion		Personal control over deci- sions		Helplessness	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 1						
Industry 1	.13	2.48*	.14	2.60*	-.03	-0.55
Industry 2	.28	5.41***	.18	3.33**	-.02	-0.46
Frequency negative feedback from supervisor	-.18	-3.66***	-.14	-2.63**	.32	6.40***
Frequency positive feedback from supervisor	.22	4.47***	.09	1.72	-.24	-4.76***
	$R^2 = .18$		$R^2 = .08$		$R^2 = .16$	
Step 2						
Industry 1	.09	1.77	.12	2.31*	.00	0.05
Industry 2	.24	4.80***	.16	3.03**	.01	0.14
Frequency negative feedback from supervisor	-.07	-1.26	-.09	-1.65	.23	4.31***
Frequency positive feedback from supervisor	.07	1.26	.03	0.54	-.12	-2.11*
Feedback environment	.33	5.63***	.13	1.94 <sup>+</sup>	-.26	-4.28***
	$R^2 = .25$ $\Delta R^2 = .07***$		$R^2 = .09$ $\Delta R^2 = .01^+$		$R^2 = .20$ $\Delta R^2 = .04***$	

*Note.* Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

In a second set of models Hypotheses 2a to 2c were tested, in particular the relationships between the mediator variables personal control over information, personal control over decisions, and helplessness with well-being consisting of the variables job depression, job anxiety, job satisfaction, and turnover intentions (see Table 3). In the first steps, we again entered the control variables (these steps are identical for testing Hypothesis 2a to 2c and therefore are displayed only once in Table 3, Step 1). Industry type 2 revealed a positive relationship with job anxiety as well as with job satisfaction, indicating that participants from R&D reported more job anxiety but also more job satisfaction than participants from hospitals or public administration. Frequency of negative feedback from the supervisor was positively related to job depression, job anxiety, and turnover intentions and negatively related to job satisfaction. Frequency of positive feedback from the supervisor was negatively related to job depression and job anxiety and positively related to job satisfaction, but unrelated to turnover intentions. In the second step, we entered the mediator variables separately as predictors of well-being at work. Personal control over information turned out as significant negative predictor of job depression, job anxiety, and turnover intentions, and a significant positive predictor of job satisfaction. These results support Hypothesis 2a. Personal control over decisions also had a significant positive relationship to job satisfaction and a significant negative relationship to job depression, but was unrelated to job anxiety and turnover intentions. Thus, the data provided partial support for Hypothesis 2b. Helplessness was positively related to job depression, job anxiety, and turnover intentions, and negatively related to job satisfaction. These results fully support Hypothesis 2c.

In a third set of models we tested our partial mediation hypotheses (Hypothesis 3a to 3c). We followed the Baron and Kenny (1986) procedure for mediation analysis and additionally used the Sobel Test (1982) to examine if the mediator carries the influence of the independent variable to the dependent variables. Support for the first requirement of the Baron and Kenny (1986) procedure was provided in finding the feedback environment to be related to the mediator variables (see test of Hypotheses 1a to 1c). Results testing the second and third steps are displayed in Table 4. In the first regression step, we entered the control variables. These steps are identical to the first steps in testing Hypotheses 2a to 2c (see Table 3, Step 1). In the second step, we entered feedback environment into the model. Feedback environment was a significant negative predictor of job depression and turnover intentions, and a significant positive predictor of job satisfaction.

Table 3

*Regression Results for Hypotheses 2 a to 2c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
<b>Step 1</b>								
Industry 1	.04	0.72	.03	0.60	-.02	-0.35	.08	1.50
Industry 2	-.06	-1.07	.12	2.20*	.19	3.73***	.08	1.44
Frequency negative feedback from supervisor	.30	5.96***	.24	4.61***	-.29	-5.93***	.23	4.43***
Frequency positive feedback from supervisor	-.20	-3.88***	-.16	-2.99**	.26	5.25***	-.10	-1.87
	$R^2 = .13$		$R^2 = .09$		$R^2 = .19$		$R^2 = .07$	
<b>Step 2a</b>								
Industry 1	.07	1.33	.05	0.91	-.06	-1.30	.10	1.77
Industry 2	.01	0.21	.15	2.79**	.09	1.85	.11	1.99*
Frequency negative feedback from supervisor	.26	5.13***	.22	4.09***	-.23	-4.84***	.21	3.95***
Frequency positive feedback from supervisor	-.14	-2.81**	-.13	-2.37*	.18	3.80***	-.07	-1.32
Personal control over information	-.24	-4.49***	-.13	-2.35*	.35	6.97***	-.12	-2.14*
	$R^2 = .18$		$R^2 = .10$		$R^2 = .29$		$R^2 = .08$	
	$\Delta R^2 = .05***$		$\Delta R^2 = .02^*$		$\Delta R^2 = .10***$		$\Delta R^2 = .01^*$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 3 (continued)

*Regression Results for Hypotheses 2 a to 2c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 2b								
Industry 1	.06	1.12	.04	0.72	-.06	-1.18	.09	1.72
Industry 2	-.03	-0.54	.13	2.34*	.14	2.77**	.10	1.73
Frequency negative feedback from supervisor	.28	5.55***	.23	4.42***	-.25	-5.31***	.22	4.15***
Frequency positive feedback from supervisor	-.19	-3.63***	-.15	-2.89**	.23	4.94***	-.09	-1.70
Personal control over decisions	-.15	-2.97**	-.05	-1.00	.29	6.05***	-.09	-1.74
	$R^2 = .15$		$R^2 = .09$		$R^2 = .27$		$R^2 = .08$	
	$\Delta R^2 = .02^{**}$		$\Delta R^2 = .00$		$\Delta R^2 = .08^{***}$		$\Delta R^2 = .01$	
Step 2c								
Industry 1	.05	1.15	.04	0.90	-.03	-0.62	.09	1.80
Industry 2	-.04	-0.98	.13	2.67**	.18	3.90***	.09	1.73
Frequency negative feedback from supervisor	.13	2.85**	.09	1.89	-.16	-3.30**	.11	2.10*
Frequency positive feedback from supervisor	-.07	-1.54	-.05	-0.98	.16	3.43**	-.01	-0.12
Helplessness	.54	11.52***	.46	8.97***	-.42	-8.82***	.39	7.29***
	$R^2 = .38$		$R^2 = .26$		$R^2 = .34$		$R^2 = .20$	
	$\Delta R^2 = .25^{***}$		$\Delta R^2 = .18^{***}$		$\Delta R^2 = .15^{***}$		$\Delta R^2 = .13^{***}$	

*Note.* Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 4

*Regression Results for Hypotheses 3a to 3c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
<b>Step 2</b>								
Industry 1	.05	1.03	.02	0.45	-.04	-0.77	.10	1.87
Industry 2	-.03	-0.51	.13	2.38*	.15	3.13**	.12	2.21*
Frequency negative feedback from supervisor	.22	4.01***	.21	3.75***	-.20	-3.74***	.13	2.24*
Frequency positive feedback from supervisor	-.09	-1.51	-.12	-2.03*	.13	2.42*	.04	0.74
Feedback environment	-.25	-4.00***	-.08	-1.30	.28	4.71***	-.32	-5.02***
	$R^2 = .17$		$R^2 = .10$		$R^2 = .24$		$R^2 = .13$	
	$\Delta R^2 = .04$ ***		$\Delta R^2 = .01$		$\Delta R^2 = .05$ ***		$\Delta R^2 = .07$ ***	
<b>Step 3a</b>								
Industry 1	.07	1.38	.03	0.64	-.06	-1.37	.10	1.94
Industry 2	.02	0.38	.16	2.83**	.08	1.70	.13	2.32*
Frequency negative feedback from supervisor	.21	3.83***	.21	3.62***	-.18	-3.52***	.12	2.19*
Frequency positive feedback from supervisor	-.07	-1.29	-.11	-1.90	.11	2.13*	.05	0.78
Feedback environment	-.18	-2.87**	-.04	-0.65	.18	3.00**	-.31	-4.58***
Personal control over information	-.20	-3.47**	-.12	-2.03*	.31	5.85***	-.04	-0.73
	$R^2 = .20$		$R^2 = .11$		$R^2 = .31$		$R^2 = .14$	
	$\Delta R^2 = .03$ **		$\Delta R^2 = .01$ *		$\Delta R^2 = .07$ ***		$\Delta R^2 = .00$	

*Note.* Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 4 (continued)

*Regression Results for Hypotheses 3a to 3c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
<b>Step 3b</b>								
Industry 1	.07	1.35	.03	0.54	-.07	-1.51	.11	2.01*
Industry 2	-.01	-0.09	.14	2.48*	.11	2.30*	.13	2.37*
Frequency negative feedback from supervisor	.21	3.80***	.21	3.66***	-.17	-3.39**	.12	2.13*
Frequency positive feedback from supervisor	-.08	-1.44	-.12	-2.01*	.13	2.36*	.05	0.77
Feedback environment	-.23	-3.74***	-.08	-1.21	.25	4.30***	-.31	-4.87***
Personal control over decisions	-.13	-2.55*	-.04	-0.79	.27	5.66***	-.06	-1.19
	$R^2 = .19$		$R^2 = .10$		$R^2 = .31$		$R^2 = .14$	
	$\Delta R^2 = .02^*$		$\Delta R^2 = .00$		$\Delta R^2 = .07^{***}$		$\Delta R^2 = .00$	
<b>Step 3c</b>								
Industry 1	.05	1.17	.02	0.47	-.04	-0.82	.10	1.97
Industry 2	-.03	-0.68	.13	2.57*	-.16	3.47**	.11	2.28*
Frequency negative feedback from supervisor	.10	2.06*	.11	2.02*	-.11	-2.15*	.05	0.85
Frequency positive feedback from supervisor	-.03	-0.50	-.07	-1.23	.09	1.70	.08	1.50
Feedback environment	-.11	-2.07*	.04	0.61	.18	3.19**	-.23	-3.72***
Helplessness	.52	10.78***	.46	8.85***	-.39	-7.96***	.34	6.37***
	$R^2 = .39$		$R^2 = .27$		$R^2 = .36$		$R^2 = .23$	
	$\Delta R^2 = .21^{***}$		$\Delta R^2 = .17^{***}$		$\Delta R^2 = .12^{***}$		$\Delta R^2 = .09^{***}$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

To indicate a mediation of the relationship between feedback environment and well-being at work, each single mediator variable should predict the outcomes in the third step, additionally, the regression weight for feedback environment must be reduced in Step 3 compared to Step 2. Personal control over information and personal control over decisions were significant predictors for job depression and job satisfaction, while the respective regression weights of feedback environment were reduced but still significant, thus indicating partial mediation. Finally, helplessness significantly predicted job depression, job satisfaction, and turnover intentions. The simultaneous consideration of helplessness and feedback environment reduced the regression weights of feedback environment compared to Step 2, but the regression weight was still significant, thus, indicating partial mediation. No mediation could be tested for job anxiety because the feedback environment did not predict job anxiety in the second step.

Results of the Sobel tests revealed that personal control over information indeed partially mediated the relationship between feedback environment and job depression (*Sobel's*  $z = 3.51, p < .001$ ) and job satisfaction (*Sobel's*  $z = 4.38, p < .001$ ). Personal control over decisions marginally mediated the relationship between feedback environment and job satisfaction (*Sobel's*  $z = 1.85, p < .10$ ) but not with job depression (*Sobel's*  $z = 1.62, n.s.$ ). Helplessness was a significant mediator in the relationships between feedback environment and job depression (*Sobel's*  $z = 4.01, p < .001$ ), job satisfaction (*Sobel's*  $z = 3.85, p < .001$ ), and turnover intentions (*Sobel's*  $z = 3.69, p < .001$ ). Therefore, Hypotheses 3a, 3b, and 3c received partial support from our data.

## Discussion

In this study we examined the mediating role of personal control over information and decisions and feelings of helplessness in the relationship between supervisor-employee feedback environment and well-being at work. Replicating findings from other studies (Anseel & Lievens, 2007; Rosen et al., 2006) we found feedback environment to be positively related to job satisfaction. Moreover, feedback environment was negatively related to job depression, turnover intentions and feelings of helplessness and was positively related to personal control over information and (marginally) decisions at work. Personal control over information, in turn, was negatively related to job depression, job anxiety and turnover intentions, and positively related to job satisfaction and helplessness was related to these outcome variables in the reverse direction. Personal control over decisions positively predicted job satisfaction and negatively predicted job depression. Finally, personal control over information partially mediated the relationships between the feedback environment on the one hand and job depression and job satisfaction at the other hand. Personal control over decisions partially mediated the relationship between feedback environment and job satisfaction. Feelings of helplessness partially mediated the relationships of the feedback environment to

job satisfaction, job depression, and turnover intentions. The relationship between the feedback environment and personal control over decisions was only marginally significant and therefore should be interpreted only with caution.

Taken together, our findings support and underline the relevance of the supervisor-employee feedback environment for employees' well-being at work and reveal the different roles of personal control and feelings of helplessness as mediating variables of these relationships. Helplessness was found to be the strongest mediating variable out of the three variables used. This finding suggests that personal control at work might be one important resource in an advantageous feedback environment, but that the prevention of lack of control (helplessness) is even more important. Additionally, personal control over information was a stronger mediating variable than was personal control over decisions. Personal control over information might be a more proximal benefit from an advantageous feedback environment than personal control over decisions, which could be one explanation for these results. Furthermore, personal decision control is likely to be affected from a broader range of variables in the work context.

Until now there are only a few studies using the scale of Steelman et al. (2004) to assess feedback environment. Most of these studies have been conducted in the United States (one exception is Anseel & Lievens, 2007). In our study, we applied the concept and instrument to German employees and were able to replicate earlier findings from Steelman et al. (2004), Rosen et al. (2006), and Anseel and Lievens (2007), particularly its relationship to job satisfaction. Therefore, we can preliminarily conclude that feedback environment is an important aspect of the work context - at least in Western countries. Additionally, in our study we surveyed regular employees from different industries what enhances the possibility of generalizing the results. Moreover, our study adds to the existing literature on feedback environment by extending evidence for important outcomes of the feedback environment and introducing personal control and helplessness as mediating variables.

Controlling for the frequency of positive and negative feedback from the supervisor enabled us to examine the qualitative aspects of the feedback environment separated from the quantity of feedback received from the supervisor. Frequency of negative feedback from the supervisor had moderate negative relationships and frequency of positive feedback from the supervisor had moderate positive relationships to the feedback environment facets (see Table 1). Different interpretations of these results are plausible. First, employees in an advantageous feedback environment might experience feedback in a less negative and more positive way than employees in disadvantageous feedback environments. Second, positive feedback might be important for employees to evaluate their feedback environment as advantageous and negative feedback threatens this image. Findings showed that while the frequency of negative feedback from the supervisor was positively related to job depression,



job anxiety and turnover intentions, and negatively related to job satisfaction in the first step (see Table 3), these effects got smaller when entering the feedback environment variable in the second step (see Table 4). The same was true for the frequency of positive feedback from the supervisor with its relationship to job depression, job anxiety, and job satisfaction becoming smaller after entering the feedback environment variable. Feedback environment does not have a significant relationship to job anxiety when frequency of feedback is controlled, but does have a significant effect when it is not. Together, these results indicate that both quality and quantity of the feedback environment are important for well-being at work. Therefore, it might be worthwhile to examine qualitative and quantitative aspects of the feedback environment as well as possible interactions separately before they are integrated into one construct.

Of course, our study has some limitations. One apparent limitation is the cross-sectional design with self-report data which does not allow for drawing causal conclusions. It might well be that, for example, job satisfaction also influences the feedback environment, either because more satisfied employees participate in creating more advantageous feedback environments, or because more satisfied employees see their work context in a more positive light. For example, the study of van Dierendonck et al. (2004) has shown that leadership behaviors including feedback delivery were connected to employee well-being in a feedback loop which can also be reasonably assumed for the relationship between the supervisor feedback environment and well-being.

### **Further Research and Practical Implications**

All in all we found a meaningful pattern of results concerning the relationships between supervisor-employee feedback environment, personal control, helplessness, and well-being at work. These findings promise to bring new insights into the relationships between feedback and important work-related outcomes. More research is required to learn about the development and stability of the feedback environment. Probably the most fruitful next steps in theory building would be attempts to integrate research on the feedback environment with the feedback-seeking (e.g., Ashford & Cummings, 1983; Ashford, Blatt, & VandeWalle, 2003) and feedback intervention literatures (e.g., Kluger & DeNisi, 1996), thus developing an integrated theory about feedback in the work context. A systematic identification and examination of moderators in the relationships between the feedback environment and important work-related outcomes should be encouraged, based on the moderators identified in studies about feedback seeking (e.g., Renn & Fedor, 1991) and in testing the feedback intervention theory (Kluger & DeNisi, 1996).

In our study, we concentrated on the supervisor-employee feedback environment. Of course, more research is needed about the co-worker part of the feedback environment and, as mentioned before, the interplay between these two feedback environment components.

Personal control is a construct that is central in theory and research about psychological empowerment (e.g., Menon, 1991; Spreitzer, 1995; Thomas & Velthouse, 1990). In a meaningful next step it would be interesting to examine the relationships between feedback environment and the four psychological experiences of empowerment, namely meaning, competence, self-determination and impact (Spreitzer, 1995, 1996; Thomas & Velthouse, 1990) in order to find out if high quality feedback environment expresses itself in psychological experiences of empowerment. This research might enhance our understanding of feedback environment's effects on important work-related outcomes as psychological empowerment has been found to prevent employees from ill health (Hochwalder, & Brucefors, 2005), enhance job satisfaction (Laschinger, Finegan, Shamian, & Wilk, 2004) and influence the propensity to leave (Koberg, Boss, Senjem, & Goodman, 1999).

In our study, feedback environment was negatively related to job depression and turnover intentions and positively related to job satisfaction. These findings underline the importance of the feedback quality as well as the importance of a favorable context in which feedback information is delivered and available for employees. These results together with the results from Norris-Watts and Levy (2004) on organizational citizenship behavior and Rosen et al. (2006) on task performance strengthen the argument that supervisors need to be trained thoroughly in feedback delivery skills in order to enhance their employees' motivation, affect and performance. Additionally, leadership trainings that provide skills for enhancing the feedback environment might also have positive effects on the co-worker part of the feedback environment. The trained supervisor could serve as role model for constructive feedback practices at the work-place.

Taken together, our results give support to the assumption that creating an advantageous feedback environment might be a valuable resource for employees that has beneficial effects on feelings of control and well-being at work. Making aware the importance of feedback and constructive dealing with feedback could therefore contribute to both the employees' and organization's well-being.

### 3. Fairness Perceptions of Supervisor Feedback, LMX and Employee Well-Being at Work (Study 2)<sup>3</sup>

Jennifer L. Sparr & Sabine Sonnentag

In a field study we examined employees' fairness perceptions of supervisor feedback and their relationships with employee well-being (job depression, job anxiety, job satisfaction, turnover intentions) and perceived control at work. We hypothesized quality of leader-member exchange (LMX) to partially mediate these relationships. We measured the above constructs in two different industries at two separate times over an interval of six months. Results from hierarchical regression analyses based on data from 99 employees supported our hypotheses. Perceived fairness of feedback was positively related to job satisfaction and feelings of control at work, and negatively related to job depression and turnover intentions. These relationships were mediated by the quality of LMX. Job anxiety was neither related to fairness perceptions of feedback nor to LMX, but positively related to frequency of negative feedback from the supervisor. Our research contributes to both, the feedback and leadership fairness literature, in connecting fairness of leader feedback to LMX and important work-related outcomes.

---

<sup>3</sup> We would like to thank Eva J. Mojza for her helpful comments on earlier drafts of this paper.

This manuscript is published in the *European Journal of Work and Organizational Psychology*. Sparr, J. L., & Sonnentag, S. (2008). Fairness perceptions of supervisor feedback, LMX, and well-being at work. *European Journal of Work and Organizational Psychology*, 17, 198-225.

## Introduction

Providing performance feedback to employees, i.e. giving them information about how their performance is evaluated (Ilgen, Fisher, & Taylor, 1979), is a core task within efficient leadership (Yukl, 2002; Leung, Su, & Morris, 2001). Leadership behavior including feedback delivery and fair treatment has been shown not only to influence employees' self-conceptions (van Knippenberg, van Knippenberg, De Cremer, & Hogg, 2004) and employees' performance (Gerstner & Day, 1997), but also employee well-being (e.g., van Dieren-donck, Haynes, Borrill, & Stride, 2004). In an empirical study, leaders as well as subordinates indicated that they believed feedback from the supervisor to be negatively related to stress at work (Offermann & Hellmann, 1996). These findings highlight the meaning of supervisor feedback as an important resource at work which reduces uncertainty, enhances role-clarity, and helps to create competencies (Ashford & Cummings, 1983). Feedback is widely acknowledged to be central not only to employee motivation and performance, but also to job satisfaction (Hackman & Oldham, 1976; Ilgen et al., 1979; Ashford & Cummings, 1983; Fedor, 1991; Kluger & DeNisi, 1996). Therefore, it is important to explore how specific features of feedback and feedback delivery are related to the supervisor-subordinate relationship and to well-being at work.

One condition for feedback to unfold its beneficial effects is that it is accepted and trusted by the recipient (Ilgen et al., 1979). For feedback to be accepted by the recipient it is necessary that it is perceived to be fair (McDowall & Fletcher, 2004). Leung et al. (2001) revealed that recipients had higher levels of trust in and satisfaction with the supervisor and accepted negative feedback more readily when they perceived this feedback to be interpersonally fair. These findings suggest that fair feedback delivery is relevant to the employee's relationship with his or her supervisor. Although the importance of giving feedback might be salient to supervisors, they often perceive giving feedback as unpleasant, especially when the feedback is negative (Moss & Sanchez, 2004; Larson, 1989; 1986, 1984). Therefore, it is important to find ways for supervisors to make feedback delivery more interpersonally fair in order to have their feedback accepted by the employee and to improve the supervisor-employee relationship.

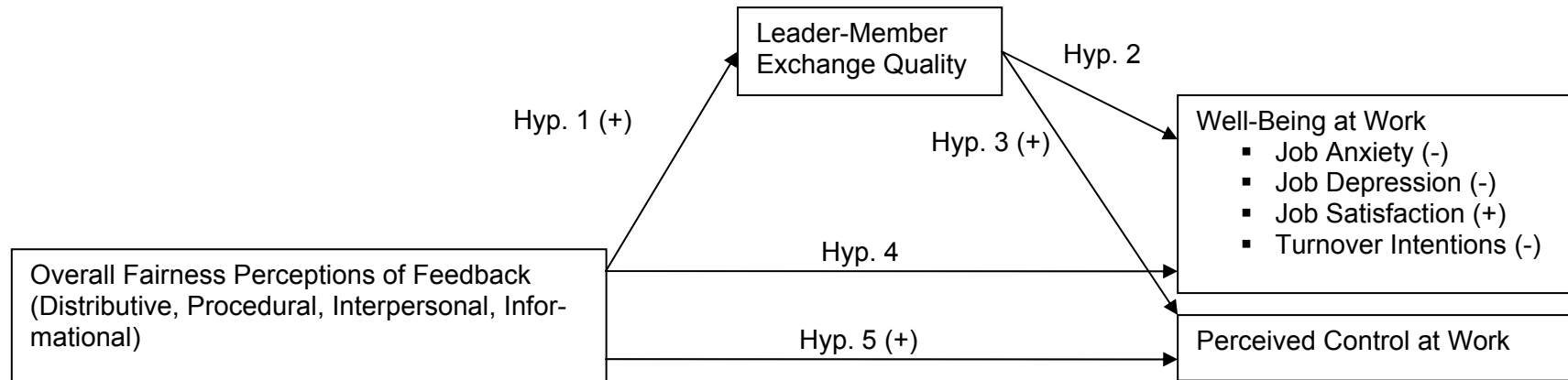
In this study, we examined the quality of leader-member exchange (LMX; Graen & Uhl-Bien, 1995) as a partial mediator in the relationship between fairness perceptions of supervisor feedback and employee well-being at work. Figure 2 displays our research model. With this study we aimed to further connect feedback and leadership fairness research and to add to both, the feedback and the leadership fairness literature in several ways: First, studying fairness perceptions of feedback promises to provide valuable insight into the properties feedback needs to have in order to benefit employee affect, cognitions and behavior at work. We argue that feedback needs to be perceived as fair in order to contribute positively

to the exchange relationship between supervisor and employee and to the employee well-being at work. Second, while several studies have previously examined the relationship between fairness, LMX, and important work-related outcomes (cf. van Knippenberg, de Cremer, & van Knippenberg, 2007; Colquitt, Conlon, Wesson, Porter, & Ng, 2001; Cohen-Charash & Spector, 2001), we focus on the fairness of one specific important leadership behavior, namely feedback delivery, which has been neglected in leadership fairness research so far. Considering the fairness of specific leadership behaviors such as feedback delivery and examining their relationships with work-related outcomes, will enhance our understanding of which leadership behaviors are important to employees and how they can be improved. Practical implications of our study are obvious: supervisors should be encouraged and trained to provide fair feedback in order to invigorate their relationships with their employees, to enhance employee performance, and to increase employee feelings of control and well-being at work.

### **Feedback and Fairness**

Fairness perceptions at work influence employees' attitudes and behaviors in organizations (Blader & Tyler, 2005). Employees care about being treated fairly, because fairness serves psychological needs, including "control, belonging, self-esteem and meaningful existence" (Cropanzano, Byrne, Bobocel, & Rupp, 2001, p. 175). We assume that employees also care about the fairness of the feedback they receive from their supervisors. To examine fairness of feedback, we relied on organizational justice research (Colquitt, 2001; Colquitt et al., 2001) as a starting point. Based on an extensive literature review, Colquitt (2001) suggested four justice dimensions, namely distributive, procedural, interpersonal, and informational justice, and developed a measure to assess these dimensions. Distributive justice refers to the outcomes of decisions and is determined by equity or equality norms. Procedural justice is concerned with justice of the procedures employed for decision-making and is affected by the application of fair process criteria like accuracy or consistency. Interactional justice can be defined as fairness of the treatment employees receive from the decision makers. This justice dimension itself includes two sub-dimensions, interpersonal and informational justice. While interpersonal justice refers to a respectful treatment, informational justice refers to the truthfulness and adequacy of explanation of the decision. The distinction between these different justice dimensions is not indisputable; empirical research has shown that oftentimes the dimensions are highly intercorrelated (cf. Colquitt, 2001) and some authors argue that the justice dimensions are very similar (Cropanzano & Ambrose, 2001).

With respect to feedback, we define distributive justice as the fairness of the feedback content. A feedback message will be perceived as fair if it properly reflects the employee's effort, performance and results of work. Procedural fairness regarding to feedback refers to



*Figure 2.* Model examined in the study. Partial mediation between fairness of feedback and well-being and control at work via LMX is hypothesized in Hypotheses 6 and 7. Signs in brackets indicate the direction of the postulated relationships.

the process in which information was gathered that formed the feedback message. This process is considered as fair if it relies on accurate information, is free from bias and is based on adequate procedures. Interpersonal feedback fairness refers to the way the feedback source treats the feedback recipient. Fair treatment is characterized by politeness and respectfulness. Finally, informational feedback fairness encompasses the sincerity of the communication and provision of adequate explanations of the feedback message.

### **Fairness Perceptions of Feedback and LMX**

Leader-member exchange (LMX) refers to the quality of the supervisor-employee relationship (Graen & Scandura, 1987). LMX theory assumes that a supervisor has a unique relationship to each of his or her employees (Graen & Uhl-Bien, 1995). These relationships are formed by social exchange processes between supervisor and employee. A high-quality relationship is characterized by a reciprocal exchange in which one member of the dyad gets something favorable from the other member and comes up with something equally favorable in turn (Blau, 1964; Kelley & Thibaut, 1978). In-group members are distinguished from out-group members, with the former receiving more attention and resources from the supervisor. Being an in-group member is associated with better performance, more commitment and a higher degree of mutual liking (Liden, Wayne, & Stilwell, 1993; Engle & Lord, 1997). Organizational fairness has been shown to facilitate the formation of social exchange relationships (e.g., Rupp & Cropanzano, 2002; Cohen-Charash, & Spector, 2001; Scandura, 1999). In our study, we focused on one specific aspect of fairness, namely employees' fairness perceptions of feedback from the supervisor, and examined its relationship with LMX. Fair feedback from the supervisor is a valuable resource for the employee which signals him or her that the supervisor is interested in the employee's performance and cares for his or her development.

If an employee is treated fairly by his or her supervisor with respect to distributive, procedural, interpersonal, and informational aspects, the employee will perceive the feedback as a benefit (Reis, 2002). According to social exchange theory (Blau, 1964; Kelley & Thibaut, 1978) this benefit received from the supervisor requires reciprocation from the employee. Therefore, the employee is likely to cooperate and reinvest into the relationship to the supervisor. If the employee did not reciprocate, this would set the exchange relationship at risk (Blader & Tyler, 2005). Thus, perceptions of feedback fairness enhance the quality of the leader-member relationship because they motivate the employee to reciprocate and reinvest into the relationship.

Support for the assumption that fairness enhances LMX comes from a study by Masterson, Lewis, Goldman, and Taylor (2000). These authors found in a large sample of university employees that interactional justice perceptions were positively related to LMX, which in turn was a mediating variable in the relationship between interactional justice and supervisor-directed organizational citizenship behavior, as well as job satisfaction. Also,

Rupp and Cropanzano (2002) found interactional justice to be positively related to the exchange between supervisor and employee, indicating the importance of interactional justice for LMX quality. In our study, we examined the relationship of an overall fairness perception of feedback, including fairness of the feedback message and fairness of feedback delivery by the supervisor. We state the following hypothesis:

*Hypothesis 1.* Fairness perceptions of feedback are positively related to LMX.

### **LMX, Well-Being, and Control at Work**

Well-being is a heterogeneous construct (for an overview see Danna & Griffin, 1999). Diener, Suh, Lucas, and Smith (1999) categorized well-being into pleasant and unpleasant affect, life satisfaction, and domain satisfactions. In our study we concentrated on the relationship between fairness perceptions of feedback and LMX with a specific domain of well-being, namely well-being at work. Warr (1999, p. 393) defined “job-specific” well-being as “people’s feelings about themselves in relation to their job”. Warr (1999) conceptualized job-related well-being around three axes: displeasure-pleasure, anxiety-comfort, and depression-enthusiasm. We chose job satisfaction (the positive pole of displeasure-pleasure), job anxiety, and job depression to represent one pole of each dimension. Furthermore, we assessed turnover intentions as a behavioral indicator for well-being, as turnover intentions have been shown to be related to well-being at work (Warr, 1999). Additionally, we examined perceived control at work as an outcome variable of fairness perceptions of feedback and LMX. Personal control has been found to be an important environmental correlate of well-being (Warr, 1999; Daniels & Guppy, 1994).

LMX is positively related to employee job satisfaction (Gerstner & Day, 1997; Graen, Novak, & Sommerkamp, 1982), low turnover intentions (Gerstner & Day, 1997; Ferris, 1985; Graen, Liden, & Hoel, 1982), and other indicators of well-being at work (van Dierendonck et al., 2004). Lagace, Castleberry, and Ridnour (1993) found that employees with higher quality LMX relationships (in-group members) were more motivated and experienced less role-related stress. These findings highlight the importance of a good supervisor-employee relationship for well-being. Why is it so important for employees to have a high quality exchange with their supervisor? LMX theory states that employees with high LMX quality belong to the “in-group” (e.g., Graen & Uhl-Bien, 1995). The affiliation with the in-group is related to employees’ feelings of being accepted and valued, employees’ motivation (Lagace et al., 1993) and employees’ occupational self-efficacy (Schyns, Paul, Mohr, & Blank, 2005). In higher LMX quality relationships, leaders provide their subordinates with helpful resources for their work (Liden, Sparrowe, & Wayne, 1997). We propose that these beneficial consequences of high LMX quality enhance employees’ well-being at work:

*Hypothesis 2.* LMX is positively related to employee well-being at work.



Beside well-being at work as a desirable work-related outcome we were interested in the relationship between LMX quality and perceived control at work. Feelings of control are vital for physical and mental well-being (cf. Skinner, 1996; Parker & Price, 1994). Cropanzano et al. (2001, p. 176) described control as manifested in “a desire to predict and manage important interactions, including (perhaps especially) those that involve the exchange and/or receipt of desired outcomes.” These authors further argue that fairness makes rewards and punishments more predictable to employees. Accordingly, fairness perceptions of feedback make implications and expectations based on the feedback more foreseeable, which strengthens the perceived control of the employee.

Employees with a high quality LMX relationship receive a high level of trust, support and rewards from their supervisors (Graen & Scandura, 1987). Their high-quality relationship with their supervisors might also imply that in-group members are more involved in supervisors’ decision processes than are out-group members (cf. Scandura, Graen, & Novak, 1986). Therefore, we predict a positive relationship between LMX and perceived control.

Perceived control is also discussed under the concept of impact in psychological empowerment literature (e.g., Thomas & Velthouse, 1990). Impact refers to a person’s feeling that his or her behavior has intended effects on the environment. There is some additional empirical evidence for LMX to be positively related to psychological empowerment and psychological empowerment to be a (partial) mediator in the relationship between LMX and performance and job satisfaction (e.g., Chen, Kirkman, Kanfer, Allen, & Rosen, 2007; Aryee, & Chen, 2006).

Therefore, we propose the following hypothesis:

*Hypothesis 3.* LMX is positively related to perceived control at work.

### **Fairness Perceptions of Feedback, LMX, and Well-Being**

In their meta-analysis, Cohen-Charash and Spector (2001) found distributive, procedural, and interactional fairness, among others, to be positively related to job satisfaction and commitment to the organization, and negatively related to turnover intentions and negative emotions at work. Receiving feedback at work has been shown to be relevant not only for performance (Kluger & DeNisi, 1996), but also for employees’ job satisfaction (e.g., Hackman & Oldham, 1976; Renn & Prien, 1995). Feedback helps employees to reduce uncertainties regarding their goal-related behavior (Ashford & Cummings, 1983). This uncertainty reduction might induce an increased feeling of control because the employee learns which of his or her decisions lead to success and which of them lead to failure.

Therefore, one can conclude that fairness perceptions of feedback will contribute to employee well-being and perceived control at work. We suggest that the quality of leader-member exchange is crucial for linking fairness perceptions of feedback to well-being and feelings of control at work. As argued before, the perception that one’s supervisor’s feedback

is fair is vital for a high-quality relationship between supervisor and employee. Moreover, a good LMX quality, that is being an in-group member, contributes to employee well-being and feelings of control at work. Thus, fairness perceptions of feedback should be related to employee well-being and feelings of control via a favorable LMX.

Concluding, we predict LMX to partially mediate the relationship between perceived fairness of feedback, well-being, and perceived control at work. We assume a partial mediation because besides LMX, there might be other mediators in the relationship between fairness perceptions of feedback, well-being and control at work. For example, feedback that is perceived as fair might be processed more thoroughly by the employee and thus might help the employee to perform well, which in turn makes him or her more satisfied with his or her work.

Recently, van Knippenberg et al. (2007) raised the discussion whether leader fairness causes high-quality LMX or high-quality LMX causes fair treatment from the leader. While most studies up to now treated fairness as an antecedent of LMX (cf. van Knippenberg et al., 2007), Bhal (2006) tested a reversed model. However, as this study relied on cross-sectional data, only limited empirical evidence on the true causal chain exists. In this paper, we argue that LMX mediates the relationship between fairness perceptions of feedback and employee outcomes - and not the other way around. There are both, conceptual and empirical reasons for including LMX (and not fairness) as the mediator: First, we argue that providing feedback is one important leadership responsibility, which is valuable to employees because it helps them to keep their performance up to or above organizational standards. Graen and Scandura (1987) noted that it is necessary for establishing a high-quality leader-member exchange relationship that the exchange in this relationship is perceived as fair from both sides. Therefore, fairness perceptions of supervisory behaviors are important inputs into individuals' judgments of their relationships with their supervisor (Masterson et al., 2000). In essence, the LMX construct has three dimensions: respect, trust, and obligation (Graen & Uhl-Bien, 1995, p. 237). Feedback from the supervisor is needed to tell employees if their performance, potential, and working problems are adequately evaluated and treated by the supervisor. Fair feedback about these issues signalizes to the employee that the supervisor is to be respected because he or she does his or her job well, that he or she is to be trusted and feels an obligation towards the employee. Therefore, fair feedback is required for employees to appraise the relationships with their supervisors. Without feedback, respectively without adequate feedback, the employees will be unsure about the quality of their relationship with the supervisor. Second, Leung et al.'s (2001) experimental study (Study 1) showed that fair interpersonal treatment in feedback delivery enhanced trust in and satisfaction with the supervisor and feedback acceptance, as well as reduced negative attribution of the employee to the supervisor. Although relying on single feedback events, these results strongly

support the assumption that fairness influences the employee's relationship with the supervisor. Taken together, there is good reason to regard LMX (and not fairness perceptions of feedback) as the mediator - although we acknowledge that it is also plausible to assume the inverse relationship with fairness perceptions of feedback as the mediator.

We therefore further propose the following hypotheses:

*Hypothesis 4.* Fairness perceptions of feedback are positively related to well-being at work.

*Hypothesis 5.* Fairness perceptions of feedback are positively related to perceived control at work.

*Hypothesis 6.* LMX partially mediates the relationship between fairness perceptions of feedback and well-being at work.

*Hypothesis 7.* LMX partially mediates the relationship between fairness perceptions of feedback and perceived control at work.

## **Method**

### **Sample and Procedure**

This study used a longitudinal design with two data collection times, approximately half a year apart. Participants were contacted at a popular international online business networking platform. Selection criteria were (1) being employed in Germany, Austria or Switzerland, (2) German language proficiency, and (3) an occupation either in research and development (R&D) or public administration and service. We chose R&D and public administration/service, two very different white-collar occupational fields, in order to be able to generalize our findings to some degree. R&D and public administration jobs differ in at least two aspects. First, while R&D can be considered as a fairly creative and low-routine business, public administration is much the opposite. Second, employees in public administration jobs in Germany face high job security, which is less so for employees in R&D occupations.

We applied the three criteria when using the member search function of the online platform. Appropriate members found by this search were contacted via the message blank and invited for participation. The study was introduced as being part of the dissertation of the first author and as seeking "to learn more about experiences with feedback in everyday work context". Participants were invited to fill out the first online questionnaire. Additionally, they were asked to indicate if they were willing to work on a second questionnaire half a year later. As an incentive for participation we offered feedback about the results of the study. Those contacted could sign up via email or the message board of the platform. After indicating their agreement to participate, we sent an email or posted a message for the participants containing the web link to the questionnaire and information about handling the questionnaire. All participants who agreed to fill out the first questionnaire were contacted by email half a year later and asked if they were willing to work on the second questionnaire (in case

they did not indicate their readiness to do so before). This email contained the web link to the second questionnaire. Several weeks later all participants were again reminded to fill out the second questionnaire and were thanked for their participation. Two months after the end of data collection they received the written feedback about the study results, along with practical advice for dealing with feedback in everyday work.

In total, 954 members of the online platform were invited to participate, 221 people from R&D and 733 people from public administration and service. At the first time of data collection, 283 participants signed up for participation (52 participants from R&D and 231 participants from public administration and service). Taken together, 29.66% of those invited signed up for participation. At the second time of data collection, 132 men and women agreed to fill out the follow-up questionnaire (113 from public administration and service and 19 from R&D). Several people answered months later that they were willing to participate, but could not be included because too much time had passed.

Overall, 260 employees with occupations either in research and development (R&D) or public administration and service actually participated in the first round of data collection (equals a response rate of 91.87% of the persons who signed up). On average, participants were 33.53 years old ( $SD = 7.63$ ), 69.1% were male. The majority of the sample had a university degree or a comparable education (85.50%), 6.3% had a craftsman's diploma, 7.8% completed an apprenticeship, and 0.4% had no formal professional training. On average, participants reported 9.34 years ( $SD = 8.08$ ) of professional experience and 5.48 years ( $SD = 6.33$ ) of job tenure. Approximately one third of the sample had a supervisory position (29.70%).

One-hundred and eleven participants completed the second questionnaire half a year later, which corresponds to a response rate of 84.09% of the persons who signed up for the second round of data collection and to 42.69% of the Time 1 participants. Questionnaires were matched with the help of a coding procedure. However, due to coding problems only 99 questionnaires could be matched successfully. Participants of the final sample on average were 34.12 years old ( $SD = 8.28$ ), had 9.99 years of professional experience ( $SD = 8.71$ ) and job tenure for 5.80 years ( $SD = 6.17$ ). The majority of this final sample was male (69.70%) and had a university degree or a comparable education (83.30%). Of the final sample, 8.10% had a craftsman's diploma, 7.10% had completed an apprenticeship and 1% indicated to have not completed any formal professional training. Approximately one third of the sample had a supervisory position (29.30%).

Simple *t*-tests showed that those who participated only at the first time of data collection did not differ significantly from the participants who completed surveys at both times with respect to demographic variables and all other variables assessed at Time 1. These findings indicate that drop-out of participants was not selective.

## Measures

We used self-report questionnaires for assessing our data. All items were in German. Table 5 displays means, standard deviations, and zero-order correlations between study variables. In all cases where no German version of the scales was available we employed a translation-back-translation procedure to translate the items from English into German.

*Fairness perceptions of feedback (Time 1).* To assess fairness perceptions related to feedback content (distributive justice), feedback process (procedural justice), and feedback delivery (interpersonal justice and informational justice) from the supervisor source, we adapted the justice scale from Colquitt (2001) and used four items for each facet of fairness perceptions. Sample items were “How much did the feedback reflect the efforts you invested into work?” (distributive justice), “How consistently are the criteria for feedback giving applied?” (procedural justice), “To what extent did your supervisor treat you respectfully when he/she gave you feedback?” (interpersonal justice), and “How much did your supervisor explain the reasons for the feedback thoroughly?” (informational justice). All items referred to the feedback participants received in general; this scale was assessed at Time 1. Participants answered on a five-point Likert-type scale (1 = *very little*, 5 = *very much*). Cronbach’s alphas for the four dimensions of fairness perceptions of feedback ranged from .82 to .93.

We performed a set of confirmatory factor analyses to examine the factor structure of our fairness measure. The four-factor solution had a significantly better fit to the data compared to a one-factor solution ( $\Delta\chi^2 = 150.48$ ,  $df = 6$ ,  $p < .001$ ), a two-factor solution treating procedural, interpersonal and informational justice as one factor and distributive justice as the second factor ( $\Delta\chi^2 = 104.51$ ,  $df = 5$ ,  $p < .001$ ), and a three-factor solution integrating interpersonal and interactional justice into one single factor and treating procedural and distributive justice as factors of their own ( $\Delta\chi^2 = 18.63$ ,  $df = 3$ ,  $p < .001$ ). As the four dimensions were highly intercorrelated (mean  $r = .69$ ) and thus likely to cause problems of multicollinearity, we entered one overall fairness-perceptions-of-feedback scale into regression analyses when testing our hypotheses. Cronbach’s alpha of this combined scale was .95. Nevertheless, we ran additional sets of regression analyses using all four single justice dimensions separately and explored their relationships to LMX and the outcome variables.

*Leader-member exchange (Time 2).* We used the seven-item LMX 7 scale (Graen & Uhl-Bien, 1995) in its German version (Schyns & Paul, 2006) for measuring leader member exchange. One sample item is “How well does your supervisor understand your work-related problems and needs?”. Instructions told the participants that the questions refer to their relationship with their supervisor during the last six months. Cronbach’s alpha was .92. Participants answered on 5-point Likert-type scales with question-specific labels (for the sample item 1 = *not at all*, 5 = *very good*).

As Table 5 shows, our fairness perceptions of feedback and LMX measures were rather highly correlated. Therefore, we ran confirmatory factor analyses to ensure independ-

ency of the single constructs. We tested a two-factor model including LMX as one latent factor and fairness perceptions of feedback as a second latent factor. The fairness perceptions of feedback factor was created as a higher order factor that was influenced from the four first-order latent factors of distributive, procedural, interactional, and informational fairness. This model showed good fit to the data ( $\chi^2 = 338.85$ ,  $df = 225$ ,  $p < .001$ ; CFI = .97, RMSEA = .072). The model with LMX and perceived fairness of feedback as separate factors had a significantly better fit to the data than a model with LMX and perceived fairness of feedback represented as one factor ( $\Delta\chi^2 = 166.72$ ,  $df = 1$ ,  $p < .001$ ).

*Job depression and job anxiety (Time 2).* We measured job depression and job anxiety with a three-item sub-scale each developed by Warr (1990). Sample items were “When you think of the last six months, how often did you feel depressed / gloomy / miserable at work?” and “When you think at the last six months, how often did you feel worried / uneasy / tense at work?”. Participants answered on 5-point Likert-type scales (1 = *never*, 5 = *always*). Cronbach’s alpha was .88 for job depression and .76 for job anxiety.

*Job satisfaction (Time 2).* We measured job satisfaction with the faces scale from Kunin (1955) with the answer scale ranging from (1) *I am very dissatisfied* to (7) *I am extraordinarily satisfied*. We used this single-item measure to assess overall job satisfaction because meta-analytic evidence shows that single-item measures of job satisfaction are highly correlated with measures including more items and thus are a worthy alternative to less parsimonious scales (Wanous, Reichers, & Hudy, 1997).

*Turnover intentions (Time 2).* We used three items to assess turnover intentions. These items were “I often think of quitting.” “I already looked around for another job.” The third item was “How likely is it that you will quit your job voluntarily during the next 12 months?” Participants answered the first two items on a 7-point Likert-type scale (1 = *does not apply at all* to 7 = *does fully apply*) and the third item on a 7-point Likert-type scale (1 = *very unlikely* to 7 = *very likely*). Cronbach’s alpha was .89.

*Feelings of control at work (Time 2).* To assess feelings of control at work we used the perceived control sub-scale from Menon’s (2001) empowerment questionnaire with three items. One sample item was “I can influence decisions taken in my department.” Participants answered on a 5-point Likert-type scale (1 = *very little*; 5 = *very much*). Cronbach’s alpha was .85.

Similar to the predictor variables, our outcome variables showed substantial intercorrelations with each other (see Table 5). Therefore, we performed a confirmatory factor analysis with job depression, job anxiety, turnover intentions and perceived control as separate factors and tested this model against an overall one-factor model. Results show that the four factor model fitted the data better than the one-factor model ( $\Delta\chi^2 = 226.85$ ,  $df = 6$ ,  $p < .001$ ). We decided also to test the four factor model against a three factor model with job depres-

sion and turnover intentions being collapsed into one factor because these two variables were highly correlated ( $r = .80$ ). This test revealed that the four factor model had a significantly better fit to the data than the three factor model ( $\Delta\chi^2 = 85.02$ ,  $df = 3$ ,  $p < .001$ ).

*Control variables (Time 1 and Time 2).* As control variables we assessed industry type, the frequency of positive and negative supervisor feedback, and holding a supervisory position or not (1 = *yes* and 2 = *no*) at Time 1 and trait negative affectivity at Time 2. More specifically, we created a dummy variable for the two industry types: Industry type (1 = R&D, 2 = public administration and service).

To assess the frequency of feedback we adapted items from Ashford (1986). Before presenting these items we briefed our participants to take a moment and think about occasions in which they sought or got feedback during their everyday work. Feedback was described as information about participants' behavior and results at work, which could be either positive (i.e., praising) or negative (i.e., criticizing). We assessed frequency of positive and negative feedback through feedback interventions from the supervisor. Specifically we asked: "During the last six months how often did you receive negative feedback about your behavior and results at work from your supervisor without asking for it?" The same question was asked for positive feedback. Participants answered on a 7-point Likert-type scale (1 = *less than once a month*, 7 = *several times per day*).

Because this study is based on self-report data we wanted to rule out bias due to trait negative affectivity (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We used the ten negative affectivity items from the PANAS (Watson, Clark, & Tellegen, 1988) in the German version by Krohne, Egloff, Kohlmann, and Tausch (1996) (together with the question "In general, how much do you feel in the following way at work?"). Sample items were "distressed" or "nervous". Participants answered on a 5-point Likert-type scale (1 = *not at all*, 5 = *extremely*). Cronbach's alpha was .90.

Table 5  
Means, Standard Deviations, Reliabilities, and Intercorrelations

Variable	M	SD	1	2	3	4	5	6	7	8
1. Industry	1.80	0.40	-							
2. Trait negative affectivity	1.80	0.65	.06	.90						
3. Frequency negative supervisor feedback (T1)	1.36	0.76	-.06	.29**	-					
4. Frequency positive supervisor feedback (T1)	2.22	1.22	.01	-.07	.00	-				
5. Supervisory position (T1)	1.71	0.46	-.05	.10	-.16	-.14	-			
6. Fairness perceptions of feedback (T1)	3.26	0.87	-.17	-.17	-.23*	.62**	-.08	.95		
7. Distributive fairness (T1)	3.24	1.07	-.08	-.22*	-.24*	.59**	-.04	.92**	.93	
8. Procedural fairness (T1)	2.86	0.90	-.29**	-.10	-.11	.56**	-.11	.87**	.75**	.82
9. Interpersonal fairness (T1)	3.96	0.93	-.09	-.28**	-.38**	.47**	-.11	.85**	.77**	.60**
10. Informational fairness (T1)	3.08	0.98	-.17	-.05	-.14	.55**	-.02	.91**	.77**	.74**
11. LMX (T2)	3.02	0.94	-.11	-.39**	-.10	.43**	.04	.57**	.55**	.49**
12. Job anxiety (T2)	3.01	1.26	-.15	.57**	.39**	-.11	.02	-.25*	-.30**	-.14
13. Job depression (T2)	2.57	1.56	.04	.56**	.27**	-.04	.07	-.35**	-.37**	-.23*
14. Job satisfaction (T2)	5.06	1.43	-.13	-.52**	-.12	.02	-.10	.31**	.34**	.24*
15. Turnover intentions (T2)	3.13	2.04	-.11	.35**	.03	.03	.06	-.24*	-.24*	-.13
16. Control at work (T2)	4.16	1.16	.09	-.28**	-.12	.17	-.22*	.29**	.27**	.22*

Note. T1 = Time 1, T2 = Time 2; Industry was coded 1 = R&D, 2 = public administration. Supervisory position was coded 1 = yes, 2 = no. Cronbach's alphas appear along the diagonal. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.



Table 5 (continued)

*Means, Standard Deviations, Reliabilities, and Intercorrelations*

<i>Variable</i>	9	10	11	12	13	14	15	16
1. Industry								
2. Trait negative affectivity								
3. Frequency negative supervisor feedback (T1)								
4. Frequency positive supervisor feedback (T1)								
5. Supervisory position (T1)								
6. Fairness perceptions of feedback (T1)								
7. Distributive fairness (T1)								
8. Procedural fairness (T1)								
9. Interpersonal fairness (T1)	.92							
10. Informational fairness (T1)	.75**	.86						
11. LMX (T2)	.49**	.49**	.92					
12. Job anxiety (T2)	-.33**	-.14	-.32**	.76				
13. Job depression (T2)	-.39**	-.31**	-.48**	.48**	.88			
14. Job satisfaction (T2)	.31**	.25*	.52**	-.42**	-.74**	-		
15. Turnover intentions (T2)	-.31**	-.23*	-.35**	.27**	.65**	-.61**	.89	
16. Control at work (T2)	.29**	.26*	.46**	-.30**	-.50**	.55**	-.38**	.85

*Note.* T1 = Time 1, T2 = Time 2; Industry was coded 1 = R&D, 2 = public administration. Supervisory position was coded 1 = yes, 2 = no. Cronbach's alphas appear along the diagonal. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

## Results

### Bivariate Relationships

We used hierarchical regression analyses to test our hypotheses. In a first step, we entered the control variables (industry type, trait negative affectivity, frequency of positive and negative feedback from the supervisor, and holding a supervisory position) into the regression models. In a second step, we entered fairness perceptions of feedback at Time 1, respectively LMX at Time 2, as predictors.

In our first model, we tested Hypothesis 1. Results are displayed in Table 6. We entered the control variables in a first step and fairness perceptions of feedback at Time 1 in the second step to predict LMX at Time 2. Trait negative affectivity had a highly negative relationship with LMX and frequency of positive feedback from the supervisor showed a highly positive relationship with LMX. Fairness perceptions of feedback were positively related to LMX, explaining 11.4 percent of variance in LMX. Thus, Hypothesis 1 was supported.

In a second set of models, we examined Hypotheses 2 and 3 which assume LMX to predict well-being and perceived control at work. Results are displayed in Table 7. In a first step, we again entered the control variables. Type of industry was related to job anxiety, indicating that employees from R&D reported more job anxiety than employees from public administration and service. Trait negative affectivity was a significant predictor of all outcome variables, showing a negative relationship with job satisfaction and perceived control and a positive relationship with job anxiety, job depression and turnover intentions. Frequency of negative feedback from the supervisor was a significant predictor of job anxiety, indicating a positive relationship. In the second step, LMX revealed to be a significant negative predictor of job depression (explaining 10.7 percent of variance) and turnover intentions (explaining 9.7 percent of variance), and a significant positive predictor of job satisfaction (explaining 15.6 percent of variance) and feelings of control (explaining 15.4 percent of variance). Therefore, Hypotheses 2 (with the exception of job anxiety) and 3 were supported.

In a third set of models we examined Hypotheses 4 and 5, namely the relationships between fairness perceptions of feedback on the one hand and well-being and perceived control on the other hand. Results are displayed in Table 8. The first step including the control variables is similar to the first steps of the models tested before (see first part of Table 7). In the second step, we entered fairness perceptions of feedback as predictor, which revealed significant negative relationships to job depression (explaining 10.0 percent of variance) and turnover intentions (explaining 12.1 percent of variance), and significant positive relationships to job satisfaction (explaining 8.9 percent of variance) and feelings of control (explaining 4.1 percent of variance). Thus, results supported Hypothesis 4 (with the exception of job anxiety) and Hypothesis 5.

Table 6  
 Regression Results for Hypothesis 1

	LMX (T2)	
	$\beta$	$t$
Step 1		
Industry	-.086	-1.018
Trait negative affectivity	-.373	-4.159***
Frequency negative supervisor feedback (T1)	.029	0.321
Frequency positive supervisor feedback (T1)	.424	4.979***
Supervisory position (T1)	.138	1.582
	$R^2 = .339^{***}$	
Step 2		
Industry	.001	0.009
Trait negative affectivity	-.351	-4.265***
Frequency negative supervisor feedback (T1)	.136	1.576
Frequency positive supervisor feedback (T1)	.143	1.414
Supervisory position (T1)	.156	1.951
Fairness perceptions of feedback (T1)	.463	4.372***
	$R^2 = .453$	
	$\Delta R^2 = .114^{***}$	

Note. T1 = Time 1, T2 = Time 2; Industry was coded 1 = R&D, 2 = public administration. Supervisory position was coded 1 = yes, 2 = no. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 7

*Regression Results for Hypothesis 2 and Hypothesis 3*

	Job anxiety (T2)		Job depression (T2)		Job satisfaction (T2)		Turnover intentions (T2)		Control at work (T2)	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 1										
Industry	-.166	-2.069*	.019	0.219	-.103	-1.172	-.133	-1.385	.084	0.872
Trait negative affectivity	.508	5.989***	.517	5.695***	-.521	-5.595***	.388	3.813***	-.236	-2.305*
Frequency negative supervisor feedback (T1)	.226	2.641**	.124	1.358	.023	0.247	-.093	-0.906	-.072	-0.698
Frequency positive supervisor feedback (T1)	-.077	-0.953	.004	0.043	-.025	-0.277	.058	0.603	.131	1.351
Supervisory position (T1)	-.011	-0.135	.035	0.391	-.051	-0.566	.009	0.091	-.182	-1.831
	$R^2 = .410^{***}$		$R^2 = .325^{***}$		$R^2 = .289^{***}$		$R^2 = .150^{**}$		$R^2 = .144^*$	
Step 2										
Industry	-.177	-2.199*	-.016	-0.201	-.061	-0.778	-.167	-1.817	.126	1.425
Trait negative affectivity	.461	5.010***	.367	4.021 ***	-.340	-3.769***	.245	2.337*	-.055	-0.543
Frequency negative supervisor feedback (T1)	.229	2.691**	.136	1.610	.009	0.109	-.082	-0.843	-.086	-0.916
Frequency positive supervisor feedback (T1)	-.024	-0.261	.175	1.951	-.231	-2.613*	.221	2.146*	-.074	-0.745
Supervisory position (T1)	.006	0.074	.090	1.091	-.119	-1.452	.062	0.652	-.249	-2.713**
LMX (T2)	-.125	-1.283	-.402	-4.161 ***	.486	5.091***	-.383	-3.443**	.436	4.499***
	$R^2 = .420$		$R^2 = .432$		$R^2 = .445$		$R^2 = .247$		$R^2 = .298$	
	$\Delta R^2 = .010$		$\Delta R^2 = .107^{***}$		$\Delta R^2 = .156^{***}$		$\Delta R^2 = .097^{**}$		$\Delta R^2 = .154^{***}$	

Note. T1 = Time 1, T2 = Time 2; Industry was coded 1 = R&D, 2 = public administration. Supervisory position was coded 1 = yes, 2 = no. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 8

*Regression Results for Hypothesis 4 and Hypothesis 5 (Step 2), Hypothesis 6 and Hypothesis 7 (Step 3)*

	Job anxiety (T2)		Job depression (T2)		Job satisfaction (T2)		Turnover intentions (T2)		Control at work (T2)	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
<b>Step 2</b>										
Industry	-.199	-2.417*	-.063	-0.765	-.026	-0.306	-.223	-2.411*	.137	1.399
Trait negative affectivity	.500	5.927***	.496	5.874***	-.501	-5.711***	.365	3.844***	-.222	-2.210*
Frequency negative supervisor feedback (T1)	.186	2.101*	.024	0.272	.118	1.278	-.203	-2.040*	-.007	-0.069
Frequency positive supervisor feedback (T1)	.028	0.275	.267	2.579*	-.273	-2.534*	.349	2.985**	-.039	-0.315
Supervisory position (T1)	-.018	-0.218	.018	0.216	-.035	-0.415	-.010	-0.103	-.171	-1.754
Fairness perceptions of feedback (T1)	-.173	-1.596	-.434	-3.995***	.409	3.623***	-.477	-3.905***	.280	2.164*
	$R^2 = .426$		$R^2 = .424$		$R^2 = .377$		$R^2 = .271$		$R^2 = .185$	
	$\Delta R^2 = .016$		$\Delta R^2 = .100^{***}$		$\Delta R^2 = .089^{***}$		$\Delta R^2 = .121^{***}$		$\Delta R^2 = .041^*$	
<b>Step 3</b>										
Industry	-.199	-2.409*	-.063	-0.791	-.026	-0.333	-.223	-2.454*	.137	1.497
Trait negative affectivity	.474	5.121***	.394	4.420***	-.360	-4.022***	.278	2.722**	-.061	-0.597
Frequency negative supervisor feedback (T1)	.196	2.179*	.064	0.736	.063	0.723	-.169	-1.709	-.070	-0.700
Frequency positive supervisor feedback (T1)	.039	0.371	.309	3.058**	-.331	-3.263**	.384	3.314**	-.104	-0.898
Supervisory position (T1)	-.006	-0.076	.063	0.782	-.099	-1.214	.029	0.317	-.243	-2.615*
Fairness perceptions of feedback (T1)	-.139	-1.163	-.299	-2.598*	.222	1.924	-.362	-2.746**	.067	0.510
LMX (T2)	-.074	-0.687	-.291	-2.825**	.404	3.902***	-.249	-2.103*	.458	3.866**
	$R^2 = .429$		$R^2 = .471$		$R^2 = .467$		$R^2 = .304$		$R^2 = .300$	
	$\Delta R^2 = .003$		$\Delta R^2 = .046^{**}$		$\Delta R^2 = .089^{***}$		$\Delta R^2 = .034^*$		$\Delta R^2 = .115^{***}$	

*Note.* Step 1 is left out because it is similar to Step 1 in Table 7. T1 = Time 1, T2 = Time 2; Industry was coded 1 = R&D, 2 = public administration. Supervisory position was coded 1 = yes, 2 = no. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

### Mediation Analyses

To test our partial mediation hypotheses (Hypotheses 6 and 7) we followed the Baron and Kenny (1986) procedure. Baron and Kenny suggest a series of regression analyses to identify mediators. First of all, the independent variable should predict the mediator variable (Hypothesis 1). Second, the independent variable should predict the dependent variable (Hypotheses 4 and 5). Third, the mediator variable should predict the dependent variable, after controlling for the independent variable (Hypotheses 6 and 7). If the mediator variable fully mediates the relationship between the independent variable and the dependent variable, then the regression weight of the independent variable becomes non-significant in the third step. If the mediator variable partially mediates the relationship between the independent variable and the dependent variable, then the regression weight of the independent variable gets smaller than before. The Sobel Test (1982) is used to test the significance of the indirect effect of the mediator.

We found support for the first two steps of the Baron and Kenny procedure as fairness perceptions of feedback were positively related to LMX (see Table 6), well-being (including job depression, job satisfaction, turnover intentions, but not job anxiety), and perceived control at work (see Table 8).

To test the requirements of Baron and Kenny's Step 3, we ran a final set of regression analyses. In Model 1 we again entered the control variables, in Model 2 we entered fairness perceptions of feedback and in Model 3 we entered LMX as predictor. Results are presented in Table 8 (Step 3). To fulfill the Baron and Kenny (1986) criteria, the mediator variable should predict the outcomes in the third step. This was the case for all our outcome variables, with the exception of job anxiety. Additionally, the regression weight for fairness perceptions of feedback must be reduced in Step 3 compared to Step 2. The regression coefficient weights of fairness perceptions of feedback in the third step were reduced in size compared to the second step, indeed, but continued to be a significant predictor for job depression and turnover intentions after entering the mediator variable. This result indicates partial mediation. Feedback perceptions of fairness were non-significant for control at work and only marginally significant for job satisfaction after inserting LMX into the analysis, thus indicating full mediation. Using the Sobel test (Sobel, 1982) we tested the significance of the indirect mediation paths. Results show that LMX indeed was a mediator in the relationship between fairness perceptions of feedback and job depression (*Sobel's*  $z = 2.37, p < .05$ ), job satisfaction (*Sobel's*  $z = 2.91, p < .01$ ), turnover intentions (*Sobel's*  $z = 1.89, p < .06$ ), and feelings of control (*Sobel's*  $z = 2.94, p < .01$ ). Therefore, Hypothesis 6 was supported with the constraint that LMX fully mediated the relationship between fairness perceptions of feedback and job satisfaction. Hypothesis 7 received partial support as LMX was found to fully,

not partially, mediate the relationship between perceived fairness of feedback and perceived control at work.

Additionally, we ran the same sets of regression analyses with each of the single feedback fairness dimensions (distributive, procedural, interpersonal, and informational justice) as separate predictors of LMX and the well-being outcomes. Table 9 gives an overview over the results and displays the standardized beta coefficients for the respective fairness variables and for LMX. All four feedback fairness dimensions were highly significant predictors of LMX. Furthermore, neither of the dimensions predicted job anxiety, but all of them significantly predicted job depression, job satisfaction, and turnover intentions. Control at work was predicted by informational fairness, by distributive and procedural fairness only marginally, and not by interpersonal fairness. Finally, inserting LMX in the third step into the regression equation predicted job depression significantly while distributive fairness remained significant, albeit smaller than before. The same pattern emerged for informational fairness, indicating partial mediation. When predicting job depression, the regression weights of procedural fairness and interpersonal fairness became non-significant after inserting LMX, thus suggesting a full mediation. We again conducted Sobel tests to examine the significance of the indirect mediation paths which was supported for all four fairness dimensions (*Sobel's z (DJ)* = 2.37,  $p < .05$ , *Sobel's z (PJ)* = 2.43,  $p < .05$ , *Sobel's z (IPJ)* = 2.37,  $p < .05$ , *Sobel's z (InfJ)* = 2.31,  $p < .05$ ). Introducing LMX into the regression analyses predicting job satisfaction indicated a partial mediation for distributive fairness as predictor, as the beta weight was reduced but remained significant and full mediation for the remaining three fairness dimensions. Again, Sobel tests confirmed the significance of the indirect mediation paths (*Sobel's z (DJ)* = 2.71,  $p < .01$ , *Sobel's z (PJ)* = 2.68,  $p < .01$ , *Sobel's z (IPJ)* = 2.66,  $p < .01$ , *Sobel's z (InfJ)* = 2.73,  $p < .01$ ). For turnover as outcome variable after inserting LMX in the third step, all fairness dimensions remained significant with the exception of procedural fairness, while LMX significantly predicted the outcome. Therefore, we found partial mediation for distributive, interpersonal, and informational fairness and full mediation for procedural fairness (*Sobel's z (DJ)* = 2.07,  $p < .05$ , *Sobel's z (PJ)* = 2.16,  $p < .05$ , *Sobel's z (IPJ)* = 1.94,  $p < .06$ , *Sobel's z (InfJ)* = 1.96,  $p < .06$ ). Full mediation of the relationships between informational fairness and control at work through LMX was found also for the marginal relationships between distributive and procedural fairness with control at work (*Sobel's z (DJ)* = 2.72,  $p < .01$ , *Sobel's z (PJ)* = 2.61,  $p < .01$ , *Sobel's z (InfJ)* = 2.64,  $p < .01$ ). In summary, these additional analyses show that the single fairness-of-feedback dimensions were very similarly related to LMX and the well-being outcomes compared to the overall fairness measure, with small variations only in strength of the relationships and mediation.

Table 9

Overview over the results from multiple regression analyses with single fairness dimensions

	LMX	Job Anxiety	Job Depression	Job Satisfaction	Turnover Intentions	Control at Work
<b>Step 2</b>						
Distributive fairness	.383***	-.171	-.391***	.406***	-.385**	.218 <sup>+</sup>
Procedural fairness	.353***	-.127	-.274*	.286*	-.287*	-.207 <sup>+</sup>
Interpersonal fairness	.345***	-.143	-.317**	.288*	-.459***	.197
Informational fairness	.356***	-.107	-.403***	.340**	-.431***	.264*
<b>Step 3</b>						
Distributive fairness		-.141	-.271*	.252*	-.273*	.038
LMX		-.078	-.312**	.403***	-.293*	.471***
Procedural fairness		-.093	-.148	.128	-.171	.041
LMX		-.096	-.356**	.446***	-.330**	.471***
Interpersonal fairness		-.112	-.199 <sup>+</sup>	.135	-.366**	.034
LMX		-.090	-.340**	.444***	-.269*	.473***
Informational fairness		-.072	-.297**	.190 <sup>+</sup>	-.336**	.105
LMX		-.100	-.299**	.420***	-.267*	.447***

Note. Values in the cells are standardized beta coefficients of the respective regression analyses. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$



## Discussion

Our study showed that fairness perceptions of feedback were related to higher quality LMX, which in turn predicted higher well-being (as indicated by lower levels of job depression and turnover intentions and increased job satisfaction) and a higher level of perceived control at work. LMX was a partial mediator in the relationship between fairness perceptions of feedback on the one hand and two indicators of well-being at work (job depression and turnover intentions) on the other hand. LMX was found to fully mediate the relationship between fairness perceptions of feedback and job satisfaction as well as perceived control at work. Fairness perceptions of feedback explained 11.4% of variance in LMX quality, rated six months later. A similar amount of variance was accounted for by fairness perceptions of feedback (ranging between 4.1% and 12.1%) and LMX (ranging between 9.7% and 15.6%) in the outcome variables. These findings suggest that fairness perceptions of feedback are highly relevant for the relationship between supervisor and employee and for employee well-being at work. Additionally, the results indicate that LMX quality is important for employee well-being at work.

While we had expected to find only partial mediation, LMX fully mediated the relationship between overall feedback fairness perceptions and job satisfaction as well as perceived control at work. This result suggests that fairness perceptions of feedback unfold their beneficial potential for job satisfaction and perceived control via the enhancement of LMX quality, particularly highlighting the importance of LMX quality for satisfaction and control perceptions at work.

Neither fairness perceptions of feedback nor LMX were related to job anxiety. Instead, frequency of negative feedback from the supervisor and industry type, entered into the regression models as control variables, were positively related to job anxiety. The first of these results is similar to the finding of Daniels and Larson (2001) who showed negative performance feedback to be positively related to state anxiety in an experiment where participants got bogus feedback after they held a mock counseling session. It is plausible that frequent negative feedback from the supervisor and anxiety relate to each other. People who are tense at work probably make more mistakes and get more negative feedback. It is equally likely that frequent negative feedback makes employees more anxious. One further explanation for this finding refers to the actual job market situation in Germany which is characterized by a high degree of unemployment and threat to job security. Job insecurity has been shown to be negatively related to well-being at work (de Witte, 1999).

In our study, the four perceived fairness of feedback dimensions were highly correlated (mean  $r = .67$ ). Generally, fairness measures tend to be correlated as the meta-analysis of Colquitt et al. (2001) shows (mean  $r = .48$ ). Nevertheless, the correlations between our feedback fairness scales were even higher. This finding might indicate that the four different

fairness aspects, particularly with respect to feedback, are not independently judged by the recipients.

Our additional analyses examining the unique relationships of the single feedback fairness dimensions with LMX and the outcomes showed that all four feedback fairness dimensions were strongly related to LMX and were also consistently related to the outcome variables, with the exception of control at work and - as before the overall fairness measure - job anxiety. Moreover, mediation of the relationships between the fairness dimensions and the outcomes through LMX were consistent, too, with variation in full versus partial mediation. These additional analyses indicate that all four facets of fairness of feedback are related to the quality of the relationship between supervisor and coworker. This finding speaks against the model by Roch and Shanock (2006), who expect only interpersonal and informational fairness to be related to LMX, with procedural fairness being related to perceived organizational support and distributive fairness to pay satisfaction. From a feedback perspective our results are quite meaningful nonetheless. Feedback tells the recipient how his or her performance is evaluated by the feedback source, what is especially important if the supervisor is the source and his or her evaluation is likely to have consequences for the recipient (e.g., promotions, pay rise, getting more responsibility; cf. van Knippenberg et al. 2007). Concerning the consequences of feedback, it is important for the recipient to receive feedback that he or she perceives as fair with respect to the content (distributive fairness) and fair with respect to the applied standards and accuracy of the information used (procedural fairness). It is unlikely that the relationship between the receiver and the supervisor is at its best if the recipient gets unfair feedback which threatens to prevent him or her being successful at his or her job. Being treated with respect and dignity (interpersonal fairness) in feedback situations most intuitively relates to the LMX quality as well as being informed properly (informational fairness) which is likely to convey trust into the supervisor.

### **Limitations**

Before we discuss theoretical and practical implications of our findings, we need to consider them in the light of the study's limitations. An apparent methodological weakness of the study is that all data is based on employee self-assessment. Self-report measures are likely to be affected by biases, such as social desirability effects or employees' implicit theories. However, because we were interested in employees' perceptions and feelings, self-report data rarely can be avoided. Following the suggestions of Podsakoff et al. (2003) we used two strategies to cope with this problem. First, we separated the measurement of the predictor variable and the outcome variables by collecting data on two separate occasions. This approach allowed us to minimize the influence of temporal moods on the examined relationships and to get some insight into the nature of the relationships between the variables

over the time. Second, we controlled for trait negative affectivity to attenuate the potential bias to a general affective disposition.

Even though we had two data collection times, this does not allow us to draw causal conclusions from our data. However, beside our theoretical reasons to examine LMX as a mediator in the relationships between perceived fairness of feedback and the outcomes, the way we assessed the variables might be a further affirmation for this causal order. We assessed fairness of feedback from the supervisor in general at Time 1 as a predictor of LMX quality rated for the following six months. Having a general measure predicting a more specific one strengthens the argument for the causal order we assumed in this study.

A short note upon the method used to recruit participants and the characteristics of our sample is indicated. We contacted participants on a well-known professional online business platform. Members of this platform are especially interested in business contacts, exchange and career opportunities. Therefore, our participants might be a rather selective sample concerning career engagement and interest in work-related issues. Furthermore, not all members of the platform visited their accounts on a regular basis and therefore might have missed our messages. Our sample therefore is likely to overrepresent persons who were active on the platform. Infrequent activities on the platform might also be responsible for changes in sample size between Time 1 and Time 2. For these reasons we need to be careful in generalizing our results. Fortunately, persons who only responded at Time 1 did not differ significantly from the final sample in demographic and other study variables.

### **Implications for Further Research and Practice**

Our study is one of the first to explicitly examine fairness perceptions of informal feedback and their relationship to LMX, well-being and control at work. Based on a sample of employees from different industries, the major contribution of our study is to reveal significant relationships between perceptions of feedback, the relationship between supervisor and employee, and well-being as well as perceived control at work.

We have several suggestions for future research about fairness of feedback, LMX and work-related outcomes. First of all, we deem it necessary to learn more about the causality between fairness of feedback and LMX. Therefore, we recommend conducting experimental studies both in laboratory and field settings. Experiments manipulating the fairness of feedback and examining the effect on LMX could employ direct manipulations of feedback in a laboratory experiment or trainings on how to give fair feedback in field experiments. To test reverse causality, experiments manipulating the supervisor-employee relationship in the laboratory and measuring the fairness perceptions of feedback should be conducted. Together, these experiments will provide insight into the causal relationship between fairness perceptions and LMX. Additionally, longitudinal field studies are required to examine the dynamic development of fairness perceptions of feedback and LMX.

Second, in our study we focused on employees' subjective feelings and perceptions. Although examining employees' perceptions and feelings is important, our results need to be extended by using more objective measures of feedback fairness and employee well-being, respectively work-related stress.

Third, we suggest further examining the importance of fairness of feedback for work-related outcomes. It would be interesting to take into account other well-being concepts (e.g., burnout), and also job performance variables (Griffin, Neal, & Parker, 2007), including contextual performance (Motowidlo, Borman, & Schmit, 1997), personal initiative (Frese, Fay, Hilburger, Leng, & Tag, 1997), and innovation behavior (Janssen, 2000). Focusing on fairness of feedback as a specific leadership behavior will complement and extend existing research on leader fairness and important work-related outcomes (cf. van Knippenberg et al., 2007; Colquitt et al., 2001; Cohen-Charash & Spector, 2001). Additionally, connecting fairness of supervisor feedback to employee performance might give valuable insights into the question why feedback sometimes has beneficial effects on performance and sometimes it does not (Kluger & DeNisi, 1996).

Forth, in our study we focused on employees' perceptions and experiences at work. It might be equally important to learn more about the supervisors' perceptions of the exchange relationship with their employees and how supervisors' feedback-giving behavior might be associated with these perceptions. Frequent discrepancies between fairness perceptions might set the exchange relationship at risk. Therefore, it can be assumed that a common representation of fairness is essential.

Taken together, our results support the assumption that fairness perceptions of feedback and LMX are meaningfully interrelated with well-being at work, which was shown for job depression and job satisfaction as measures of affective well-being, turnover intentions as a behavioral indicator of well-being, and perceived control as an important environmental determinant of well-being at work. An additional result we did not predict before was that the frequency of negative feedback from the supervisor was positively related to job anxiety. We suggest the most important practical implication of these findings is to strongly emphasize the importance of adequate communication between supervisors and employees, particularly regarding to feedback. Supervisors should be trained to be sensitive to fairness aspects in the content of feedback messages they give to employees (distributive fairness), in the way criteria relevant for the feedback are applied (procedural fairness), in their treatment of the employee during the feedback delivery (interactional fairness), and in the explanations regarding the feedback information (informational fairness).

In conclusion, we assume that a fair handling of feedback is likely to be positively related not only to employee well-being and feelings of control at work, but also to performance and thus to the well-being of the whole organization.

## **4. Perceived Supervisor Feedback Fairness and Proactive Behavior: The Moderating Role of Thinking about Task Details (Study 3)<sup>4</sup>**

Jennifer L. Sparr & Sabine Sonnentag

This field study examined the relationships between perceived fairness of supervisor feedback and two types of proactive behavior at work (personal initiative, innovative behavior). The individual's tendency to focus on task details after feedback reception was considered as a moderator of these relationships. Data were gathered from 126 employees by additionally using external-source ratings of behavior. Results from hierarchical linear modeling (random intercept, fixed effect models) showed that fairness perceptions of feedback per se were unrelated to personal initiative and innovative behavior. However, we found interaction effects between fairness of feedback and task-detail focus on the outcomes. Fairness of feedback was positively related to personal initiative when participants reported frequent feedback-based thinking about task details, but was negatively related to personal initiative and innovative behavior when thinking about task details was infrequent. Thus, providing fair feedback seems to be not enough to promote proactive behavior at work but depends on adequate thinking about the feedback. Findings and practical implications for supervisor feedback are discussed in the light of feedback intervention theory.

---

<sup>4</sup> This research was founded by an AFF-Grant from the University of Konstanz. This grant is gratefully acknowledged. We would like to thank Katharina Burde, Mareike Haase, and Andrea Tietz for their support in data collection, Willi Nagl for his help with data analysis strategy, and Jan R. Böhnke, Eva J. Mojza, Cornelia Niessen, and Anne Spsychala for their helpful comments on earlier drafts of this paper. An oral presentation based on these data is accepted for presentation at the XXIX International Congress of Psychology 2008 in July, Berlin, Germany.

## Introduction

Feedback is an important resource at work, reducing uncertainty, enhancing role clarity, and helping to create competencies (Ashford & Cummings, 1983). Thus, providing feedback is an important leadership tool that helps to synchronize leaders' and employees' goal representations, communicate performance information and direct employees' efforts (London, 1997; Smircich & Morgan, 1982). In order that this resource will be used by feedback recipients, the feedback first needs to be accepted and trusted by the recipient (Ilgen, Fisher, & Taylor, 1979). Recipients will accept feedback more readily if they perceive the feedback to be fair (McDowall & Fletcher, 2004). Until now, fairness of supervisor feedback has been shown to enhance acceptance of critical leader feedback (Leung, Su, & Morris, 2001), the motivation to improve (Roberson & Steward, 2006), quality of leader-member exchange, employee control perceptions and well-being at work (Sparr & Sonnentag, 2008). This study addressed the question whether supervisor feedback fairness is also positively related to proactive behavior at work. Nowadays, proactive behaviors are of growing importance for organizations as work environments are characterized by decentralized work and rapid changes (Crant, 2000; Frese & Fay, 2001; Janssen, 2000; Parker & Collins, in press; Ramamoorthy, Flood, Slattery, & Sardesai, 2005).

Leader behaviors have been identified to be important for proactive behaviors (Amabile, Schatzel, Moneta, & Kramer, 2004; Frese, Garst, & Fay, 2007; Janssen, 2005; Mumford, Scott, Gaddis, & Strange, 2002; Parker, Williams, & Turner, 2006; Scott & Bruce, 1994). In the present study, we examined feedback from the supervisor as a particularly important leader behavior. More precisely, we examined employees' fairness perceptions of supervisor feedback as predictor of proactive behaviors. Fairness of leader behavior has been shown to stimulate extra-role behaviors and cooperation as a consequence of the followers' positive evaluations and affective responses (van Knippenberg, de Cremer, & van Knippenberg, 2007). We will argue that fair feedback combines two advantages, namely being a resource for learning and improvement and enhancing the likelihood of positive work behavior. Nevertheless, showing proactive behavior is not the only possible reaction to fair feedback. We therefore test the assumption, based on the feedback intervention theory (Kluger & DeNisi, 1996), that only if feedback directs the recipient's attention to problematic aspects of the work that need to be improved (referred to as task details), fairness of feedback is likely to result in proactive behavior.

Thus, we pursued two goals in this study. First, we examined the relationship between perceived fairness of supervisor feedback on the one hand and two types of proactive behavior, namely personal initiative and innovative behavior, which extends both, research about important predictors of proactive behaviors and the growing literature about leadership and fairness (van Knippenberg et al., 2007). Second, we tested the hypothesis derived from

feedback intervention theory (Kluger & DeNisi, 1996) that providing fair feedback is not enough to enhance these desirable behaviors but that the feedback message needs to direct employees' attention to task details identifying work-related problems. Finding evidence for these relationships will have practical implications for leader feedback delivery practice. Recognizing and learning that providing fair feedback contributes to desirable work behaviors might support and encourage supervisors who are reluctant in feedback delivery (Moss & Sanchez, 2004) and, thus, help unfolding the employee proactive potential in the organization.

### **Fairness of Supervisor Feedback**

Fairness in organizations has been shown to be positively related to a large variety of desirable outcomes, including job satisfaction, organizational commitment, evaluation of authorities, in-role and extra-role performance (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Thus, there is strong evidence that employees care about fairness at work and particularly about supervisor fairness (van Knippenberg et al., 2007). Research on organizational fairness has established four separable dimensions of fairness, namely distributive, procedural, interpersonal, and informational fairness (Colquitt, 2001; Colquitt et al., 2001). While distributive fairness refers to the fairness of decision outcomes received, based on equity or equality norms, procedural fairness refers to the fairness of the procedures (i.e., consistent and accurate) used to derive outcomes at work. Interpersonal fairness and informational fairness are two separate facets of interactional fairness, referring to respectful treatment, and the adequacy and truthfulness of decision explanations.

As the Colquitt (2001; Colquitt et al., 2001) taxonomy of organizational fairness is the most widely accepted one nowadays (cf. van Knippenberg et al., 2007), Sparr and Sonntag (2008) adapted these general fairness definitions to fairness of feedback. Accordingly, distributive fairness of feedback is defined as fairness of the feedback content. Distributive fair feedback properly reflects the employee's efforts, behaviors, and achievements at work. Procedural feedback fairness refers to the fairness of the process in which feedback information is gathered. Procedural fair feedback is based on accurate, consistent and un-biased procedures and recipients have opportunities to give their opinions in these processes. Interpersonal feedback fairness describes respectful and appreciating treatment of the feedback recipient by the feedback source during feedback delivery. Adequate explanations of the feedback and sincere communication describe informational feedback fairness. In short, feedback recipients will perceive a feedback interaction as fair according to all four fairness dimensions if they feel that the feedback message accounts adequately for all of their efforts and results at work, if the feedback interaction fulfils established norms of how to derive and deliver feedback, and if the feedback is delivered respectfully and with adequate explanations.

### **Fairness of Supervisor Feedback and Proactive Behavior**

Proactive behavior is defined as a particular form of motivated behavior (Bateman & Crant, 1993) characterized by “taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions” (Crant, 2000, p. 436). In this study, we focused on personal initiative, that is “a behavior syndrome that results in individuals taking an active and self-starting approach to work goals and tasks and persisting in overcoming barriers and setbacks” (Fay & Frese, 2001, p. 97) and innovative work behavior, defined as “the intentional creation, introduction and application of new ideas within a work role, group or organization, in order to benefit role performance, the group, or the organization” (Janssen, 2000, p. 288). We chose these two behaviors because personal initiative captures the starting and persisting energy needed for change and innovative behavior focuses on the concrete implementation of the change. Personal initiative predicts innovative work behavior (Rank, Pace, & Frese, 2004; see also Frese & Fay, 2001 for a distinction; Seibert, Kraimer, & Crant, 2001) and innovative behavior contributes to the organization’s development and long-term survival (Scott & Bruce, 1994).

How is fairness of supervisor feedback related to these desirable behaviors? Our basic argument is that fairness helps to accept feedback and thus enhances the likelihood that the feedback recipient uses the information and hints for learning and improvement (Ilgen et al., 1979; McDowall & Fletcher, 2004; Leung et al., 2001; Roberson & Steward, 2006). For example, George and Zhou (2007) showed that both, supervisor developmental feedback, defined as useful information focusing on improvement and learning, and supervisor interactional justice contribute to employee creativity, another form of proactivity. This example underlines the relevance of fair treatment and beneficial feedback for proactive behavior at work. Fair feedback is potentially useful for both, identifying need for future improvement and change (Frese, 2001), and evaluating and modifying initiative and innovative acts if necessary. Additionally, fair feedback is positively related to employee personal control (Sparr & Sonnentag, 2008) which is crucial for personal initiative (Frese et al., 2007). Furthermore, in the following paragraphs we propose that fairness of feedback serves fundamental self-relevant needs and thus is motivating. Moreover, according to social exchange theory (Blau, 1964) individuals will reciprocate for fair treatment. One possibility to reciprocate for leader feedback fairness is going beyond the formal job description and to engage in proactive behaviors.

The multiple needs model of justice (Cropanzano, Byrne, Bobocel, & Rupp, 2001) explains that individuals care for fairness because fairness serves fundamental human needs, namely the needs for control, belonging, meaning, and positive self-regard. In short, the model claims that fairness makes particular outcomes more predictable and thus provides control; fairness fosters trust and thus brings individuals closer together which serves the need for belonging; fair treatment is an indicator for the dignity and respect received from



others and thus relevant to the self-regard; and finally, fairness as part of enduring morality contributes to the need for a meaningful existence. This model can be easily applied to fairness of feedback. Specifically, fair feedback serves the need for control because it makes supervisory performance evaluation more predictable as evaluation criteria are consistently and accurately applied (procedural fairness) and properly reflect the recipient's performance (distributive fairness). Furthermore, fairness of feedback has been found to be positively related to the quality of the relationship between feedback source and recipient (Masterson, Lewis, Goldman, & Taylor, 2000, Sparr & Sonnentag, 2008). Therefore, we assume that particularly respectful treatment (interpersonal fairness) and adequate explanations (informational fairness) in the feedback processes serve the need for belonging and self-regard. In conclusion, we assume that fairness of feedback contributes to employee motivation, growth and well-being (Deci & Ryan, 2000). At work, personal initiative and innovative behavior are possible outcomes.

Why should need-satisfaction increase the likelihood of proactive behavior at work? Supervisor fairness is an important benefit contributing to the exchange relationship between supervisor and employee (Graen & Scandura, 1987; van Knippenberg et al., 2007). A positive relationship between supervisor feedback fairness and quality of leader-member exchange has already been found (Sparr & Sonnentag, 2008). Social exchange theory (Blau, 1964) states that individuals feel an obligation to reciprocate for received benefits in a similar manner. Reciprocating benefits from the supervisor in going beyond one's formal duties (including personal initiative and innovative behavior) is a straightforward opportunity (cf. Ramamoorthy et al., 2005); positive relationships between fairness of supervisor behavior and discretionary behaviors at work have already been documented (van Knippenberg et al., 2007). Therefore, we argue that supervisor feedback that is perceived as fair by the recipient will stimulate the recipient's obligation to reciprocate for this benefit. Together with the proposed potential for learning and improvement included in fair feedback and the assumed satisfaction of self-relevant need by fair feedback, on average, we hypothesize a positive relationship between perceived fairness of supervisor feedback and personal initiative as well as innovative behavior. Nevertheless, it is important to note that fairness of feedback might enhance the likelihood of these behaviors but that other outcomes are similarly likely (e.g., enhanced task performance, organizational citizenship behavior). Therefore, in the next section we propose feedback-related focus on task details as moderating mechanism of the fair feedback - proactive behavior relationships.

*Hypothesis 1.* Fairness perceptions of feedback are positively related to (a) personal initiative and (b) innovative behavior.

### **Focusing on Task Details as a Moderator**

Feedback intervention theory (Kluger & DeNisi, 1996) is the most comprehensive theory about the feedback-performance relationship we have today, impressively documented by approximately 300 citations in PsycInfo by the end of March 2008. Five assumptions are at the core of the feedback intervention theory: “(a) Behavior is regulated by comparisons of feedback to goals or standards, (b) goals or standards are organized hierarchically, (c) attention is limited and therefore only *feedback-standard gaps* that receive attention actively participate in behavior regulation, (d) attention is normally directed to a moderate level of the hierarchy, and (e) FIs change the locus of attention and therefore affect behavior” (Kluger & DeNisi, 1996, p. 259). In the assumed goal hierarchy (for the idea of goal hierarchies see Carver & Scheier, 1982; Frese & Zapf, 1994), three generalized goal levels are distinguished, namely task-detail, task-motivation, and meta-task level. The attention is assumed to be normally directed to the task-motivation level that includes goals of the ongoing activity. Meta-task processes are at the top of the goal hierarchy and include attention to self-relevant goals, affect as well as attention to non-focal task goals. The task-detail level embraces action goals; this is the level where task-learning processes occur. Attention is directed at task details if the comparison of the actual performance with performance standards (feedback) is negative and the strategy to increase effort does not suffice to bring the performance in accordance with the standard. The attention is also directed to task details if the feedback message contains cues directing to task details (e.g., corrective information). While focusing on the meta-task level is assumed to disturb task accomplishment, focusing the attention to the task-motivational level and task-detail level is assumed to foster task accomplishment. Paying attention to task details involves the potential of learning, and thus, performance improvement, particularly in new and complex tasks (Kluger & DeNisi, 1996).

Personal initiative and innovative behavior are both characterized by going beyond the formal requirements of one’s jobs and thus doing something beneficial for the organization. While for formalized tasks standards are established and likely to be salient to the employee, fewer established standards are available for actively taken approaches to fulfill anticipated work goals by personal initiative or for the implementation of new ideas by innovative behavior. Therefore, feedback is necessary for the employee to evaluate if the behavior goes into the right direction and meets the organization’s interests.

As showing personal initiative and innovation involves new tasks, no routines are available for task accomplishment (cf. Grant & Ashford, in press) and the employees will need to focus on task details in order to ensure the success of their actions. Moreover, Frese and Fay (2001) state that personal initiative results from deep analysis of the tasks individuals are confronted with at work. For these reasons, we argue that a positive relationship between fair feedback and personal initiative as well as innovative behavior is most likely if recipients focus on details of their work and tasks after feedback reception. Focusing on task

details will stimulate learning and improvement as well as new directions for more innovative and initiative behavior.

On the opposite, not focusing on task details can be detrimental to personal initiative and innovative behavior in two ways. First, not focusing on task details after feedback reception means missing chances to find initiative and innovative approaches about how to deal with given problems in the current work tasks in the case of negative feedback, and missing chances to develop strengths at hand in case of positive feedback. The attention might be distracted and directed to other performance areas or to self-related goals. Second, particularly if feedback that indicates erroneous assumptions or misfit with organizational goals was received for the personal initiative and innovative behavior, not drawing the attention to task details sets the implementation of the intended changes at risk. Shortcomings are unlikely to be adequately addressed without focusing on task details and failure is likely to occur, to undermine individuals' self-efficacy, and thus decreasing the likelihood of further proactive behaviors (Lindsley, Brass, & Thomas, 1995). Therefore, we conclude that task-detail focus is an important moderator in the relationship between fairness of feedback and personal initiative and innovative behavior.

*Hypothesis 2.* The relationship between fairness perceptions of feedback and (a) personal initiative and (b) innovative behavior is moderated by focus on task details.

These relationships are positive if focus on task details is high and negative if focus on task details is low.

## **Method**

### **Procedure and Sample**

We tested our hypotheses in a field study using online questionnaires. Supplementary to the participants' self-reports we included ratings from external sources (including ratings from supervisors, direct colleagues and subordinates of the participants) about the participants' work behavior. Our sample was composed of participants working in project teams or small agencies. We contacted organizations either by telephone or contacted their CEOs on a large online business platform, explained the purpose of our study and invited persons working in project teams or working closely with each to participate. This criterion of working closely together was important because we assessed work behavior with external-source ratings. Working closely together is likely to enhance the reliability of external-source ratings. We offered information about the results of the study together with practical advice for all participants. Separate analyses comparing the team's answers to average answers of the whole sample and respective industry were offered for teams participating with eight or more persons. If the contact person (e.g., CEO, staff manager, secretaries) was interested in our study we sent information material both for managers as well as for potential participants via e-mail and asked the contact person to distribute the information material if the organization

decided to participate. The information material enclosed information about the study's goals, requirements for and procedure of participation, gratification for participation, and an assurance of confidentiality. Individual persons and their raters of behaviors could sign up for participation using an application form and send this to our research office via e-mail or fax. After registration we sent e-mails containing the links to the online questionnaires to the participants and their external sources.

All together, 190 persons who belonged to 28 different teams or work-units signed up for participation; 31 of these persons failed to name another person for the external source ratings, 39 named one person, 37 named two persons, 73 named three persons, and one participant each named four and five persons, resulting in a total of 341 expected reports by external sources.

One-hundred and fifty-eight persons out of 27 different teams finally participated in this study (response rate = 83.16%). These participants were recruited from organizations belonging to information technology (47.8%), media and advertising (15.9%), finances (15.9%), research or research and development (14.0%), and consulting (6.4%) industries. On average, participants were 36.56 years old ( $SD = 8.94$ ), had a mean tenure of 10.31 years ( $SD = 8.48$ ), and a mean job tenure of 6.18 years ( $SD = 6.29$ ). The majority of the sample (75.6%) was male, highly educated (71.2% had a university degree or a comparable degree, 3.2% were master craftsmen or comparable, 23.1% had completed an apprenticeship, and 2.6% of the sample had not yet completed their vocational training), and more than one third of the participants held a supervisory position (38.5%). The average team size was 7.23 persons ( $SD = 5.19$ ).

A total of 294 external source ratings were completed (response rate = 86.22%). External sources were supervisors (20.6%), direct co-workers (65.8%), and subordinates (13.6%). Self-reports and external-source ratings were matched with the help of a coding procedure. External-source ratings of personal initiative and innovative behavior were available for 126 participants. *T*-tests showed no differences concerning the independent and demographic variables between participants with and without external-source ratings.

All together, 257 external-source ratings matched with self-reports (39 participants had one external-source rating, 46 had two ratings, 39 had three, one had four, and one had five ratings). External-source ratings were provided from persons that were on average 37.83 ( $SD = 8.56$ ) years old, 76.2% male, 33.5% had a supervisory position. External sources had an average tenure of 11.46 years ( $SD = 8.39$ ) and an average job tenure of 6.49 years ( $SD = 6.66$  years). Similar to the participants, external sources were well educated (67.3% had a university degree or comparable, 9.7% had were master craftsmen or comparable, 21.8 had completed an apprenticeship, and 1.2% had not yet completed their professional training). All tests of hypotheses are based on the final *N* of 126.

## Measures

Questionnaires were provided in German. Table 10 displays means, standard deviations, and zero-order correlations between study variables. In all cases where no German version of the scales was available we employed a translation-back-translation procedure to translate the items from English into German.

*Fairness perceptions of supervisor feedback.* To assess the four dimensions of fairness perceptions of supervisor feedback we used an adaptation of the justice scale from Colquitt (2001; cf. Sparr & Sonnentag, 2008). Sample items were “How much did the feedback reflect the efforts you invested into work?” (distributive justice), “How consistently are the criteria for feedback giving applied?” (procedural justice), “To what extent did your supervisor treat you respectfully when he/she gave you feedback?” (interpersonal justice), and “How thoroughly did your supervisor explain the reasons for the feedback?” (informational justice). Participants answered on a five-point Likert-type scale (1 = *very little*, 5 = *very much*). Cronbach’s alphas for the four dimensions of fairness perceptions of feedback ranged from .83 to .93 (see Table 10 for detailed information).

We performed a set of confirmatory factor analyses to examine the factor structure of our fairness measure ( $N = 158$ ). The four-factor solution had a good fit to the data ( $\chi^2 = 162.58$ ,  $df = 98$ ,  $p < .001$ ; RMSEA = .065; CFI = .99; NFI = .97) and showed a significantly better fit to the data compared to a one-factor solution ( $\chi^2 = 869.11$ ,  $df = 104$ ,  $p < .001$ ; RMSEA = 0.216; CFI = .89; NFI = .87;  $\Delta\chi^2 = 706.43$ ,  $\Delta df = 6$ ,  $p < .001$ ), a two-factor solution treating procedural, interpersonal and informational justice as one factor and distributive justice as the second factor ( $\chi^2 = 587.28$ ,  $df = 103$ ,  $p < .001$ ; RMSEA = 0.173; CFI = .93; NFI = .91;  $\Delta\chi^2 = 424.70$ ,  $\Delta df = 5$ ,  $p < .001$ ), and a three-factor solution integrating interpersonal and interactional justice into one single factor and treating procedural and distributive justice as factors of their own ( $\chi^2 = 351.30$ ,  $df = 101$ ,  $p < .001$ ; RMSEA = 0.126; CFI = .96; NFI = .94;  $\Delta\chi^2 = 188.72$ ,  $\Delta df = 3$ ,  $p < .001$ ). As the four fairness dimensions were highly intercorrelated (latent variable mean  $r = .65$ ) and we did not have different assumptions for the single fairness dimensions we entered one overall fairness-perceptions-of-feedback scale into analyses when testing our hypotheses. Cronbach’s alpha of this combined scale was .93. Nevertheless, we also ran separate models for each fairness dimension.

*Task detail.* We assessed feedback-related focus on task details with three items that were developed for this study. “How intensively do you reflect on the following questions after you have received feedback? Are there any weaknesses in the detailed steps of my work completion? What weak points are there in my work processes that I must learn to improve? What steps of my work execution should I analyse more closely?” Participants answered on a 4-point scale (0 = *not at all*, 1 = *not intensively*, 2 = *quite intensively*, and 3 = *very intensively*). Cronbach’s alpha was .76.

Table 10

*Means, Standard Deviations, Reliabilities, and Intercorrelations*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Frequency negative supervisor FI	1.42	0.92	-														
2 Frequency positive supervisor FI	2.60	1.35	.00	-													
3 Frequency feedback seeking supervisor	2.15	1.36	.08	.36**	-												
4 Supervisory position	0.39	0.49	.21*	.08	-.08	-											
5 Job tenure	6.19	6.45	-.04	.20*	-.06	.24**	-										
6 Percent supervisor in external-source ratings	0.18	0.29	-.01	.04	.04	.01	.08	-									
7 Percent subordinates in external-source ratings	0.13	0.29	.06	-.02	.05	.23**	.17	-.19*	-								
8 Fairness	3.61	0.70	-.18*	.34**	.30**	-.01	-.08	.10	.07	.93							
9 Procedural fairness	3.10	0.95	-.22*	.32**	.30**	.01	-.04	.07	.08	.80**	.83						
10 Distributive fairness	3.56	0.92	-.14	.31**	.29**	.04	-.13	.13	.05	.88**	.62**	.93					
11 Interpersonal fairness	4.27	0.71	-.18*	.17	.12	-.12	-.11	-.02	.01	.78**	.38**	.63**	.88				
12 Informational fairness	3.52	0.80	-.04	.31**	.25**	-.00	.01	.13	.09	.86**	.55**	.64**	.68**	.87			
13 Task detail	1.96	0.62	-.11	-.08	-.04	-.01	.01	.03	.02	.23**	.20*	.22*	.18*	.16	.76		
14 Personal initiative (External-source rated)	3.96	0.51	.01	.07	.08	.20*	-.08	-.15	.21*	.03	.06	.09	-.02	-.04	.04	.86	
15 Innovative behavior (External-source rated)	4.60	0.83	.10	.12	.21*	.21*	-.05	-.23**	.19*	.01	.08	.06	-.07	-.07	.02	.64**	.88

*Note.* FI = feedback intervention. Supervisory position was coded 1 = yes, 0 = no. Cronbach's alphas appear along the diagonal. \*  $p < .05$ , two-tailed. \*\*  $p < .01$ , two-tailed.

*Personal initiative.* We used the German version of the 7-item personal initiative scale from Frese, Fay, Hilburger, Leng, and Tag (1997) and adapted the item wording for the external-source report. Sample items are “He/she actively attacks problems” and “He/she uses opportunities quickly in order to attain his/her goals”. The answer scale ranged from 1 = *not at all true* to 5 = *very true*. Cronbach’s alpha was .86.

*Innovative behavior.* Innovative behavior was assessed with the subscale idea realization consisting of three items from the innovation behavior scale (Janssen, 2000) adapted for external-source report. Sample items are “Please evaluate how often your colleague... transforms innovative ideas into useful applications...evaluates the utility of innovative ideas”. Additionally, we assessed the newly developed item “...cares for the implementation of innovative ideas”. Raters answered on a 7-point scale (1 = *never*, 2 = *very rarely*, 3 = *rarely*, 4 = *sometimes*, 5 = *often*, 6 = *very often*, 7 = *always*). Cronbach’s alpha of this four-item scale was .88. We chose to focus on idea realization as this is the component that makes a creative idea become true and unfold its contribution to organizational success (cf. Rank et al., 2004 and West & Farr, 1990 on the need to distinguish between creativity and innovation).

We performed a CFA in order to verify that personal initiative and innovative behavior are separate constructs. The two-factor solution ( $\chi^2 = 78.35$ ,  $df = 43$ ,  $p < .001$ , RMSEA = .081, CFI = .98, NFI = .95) had a significantly better fit to the data than the one-factor solution ( $\chi^2 = 219.80$ ,  $df = 44$ ,  $p < .001$ ; RMSEA = 0.179; CFI = .92; NFI = .89;  $\Delta\chi^2 = 141.45$ ,  $\Delta df = 1$ ,  $p < .001$ ).

As a measure of the interrater agreement we calculated the average deviation index (Burke, Finkelstein, & Dusig, 1999; Burke & Dunlap, 2002). The averaged average deviation index for the dependent variables was 0.391 (with an upper-limit cut-off of 0.833) for personal initiative and 0.658 (with an upper-limit cut-off of 1.167) for innovative behavior. As these values are clearly below their cut-off scores, good interrater agreement is indicated. Additionally, average  $\eta^2$  were calculated with .512 for personal initiative and .487 for innovative behavior. Additionally, we calculated interrater reliabilities for those persons who had two or three ratings from direct colleagues only (one type of source). The averaged average deviation index for personal initiative was .363 and for idea realization .628. Average  $\eta^2$  for personal initiative was .532 and for innovative behavior .485. As these values were very similar to the interrater agreements with mixed sources (i.e., supervisors, co-workers, subordinates), we concluded that using ratings from different sources is not a problem for the reliability of the measure.

*Control variables.* We included frequency of positive and negative supervisor feedback interventions, frequency of feedback seeking, job tenure, supervisory position, and two

variables indicating the relationship between participant and external source as described below into our analyses.

Frequency of positive and negative feedback interventions from the supervisor were included into the analyses as control variable because one might assume that fairness of feedback is more important for persons receiving frequent feedback. Participants answered to one question (adapted from Ashford, 1986) each: "How often did you get positive (negative) feedback from your supervisor about your behavior and your results at work during the last six month without asking for feedback?" Answer options ranged from 1 = *less than once a month* to 7 = *several times a day*. Additionally, frequency of feedback seeking was assessed with one item (adapted from Ashford, 1986): "How often did you get feedback from your supervisor about your behavior and your results at work during the last six months when you asked him/her explicitly for feedback?" Answer options ranged from 1 = *less than once a month* to 7 = *several times a day*.

Job tenure was included as a control variable because feedback might be less important for more tenured employees (cf. Ashford & Cummings, 1985). Participants were asked "How long have you been working for your organization?" Supervisory position was controlled for because providing feedback belongs to the supervisor role and might change perceptions of feedback. The question asked was "Do you have a supervisory position?"

External-source ratings were averaged when more than one rating was available for one participant. Because external-source ratings were provided by supervisors, direct colleagues, and subordinates we decided to consider source of rating as control variable in our analyses testing the hypotheses. We created two variables: the first variable gives information about how many percent of the ratings for a given person come from a supervisor; the second variable informs about how many percent of the ratings for a given person come from a subordinate. (For example, if a person had three external source-ratings, one coming from a supervisor and two ratings from subordinates, than the first variable had the value 0.33 and the second variable 0.67).

### **Data Analysis**

Our data were structured hierarchically because we had persons in teams; therefore, individuals (Level 1) were nested in teams (Level 2). We chose hierarchical linear modelling (HLM; Raudenbush & Bryk, 2002) for data analysis and used the program HLM 6.0 (Raudenbusch, Bryk, Cheong, & Congdon, 2004). More precisely, we calculated models with random intercept and fixed effects. Thus, we were able to account for the dependences in our data allowing for different intercepts in the teams. No predictor variables were entered at the team level and we did not analyze any team processes. All predictor variables entered into the analyses were grand mean centered because we were interested in differences be-



tween the individuals. Before calculating the interaction term, predictor variables were standardized.

## Results

For both dependent variables, personal initiative and innovative behavior, we calculated one set of models each, including the Null model containing the intercept, a model containing the control variables (Model 1), a model containing the control variables and the main effects (Model 2), and a final model additionally containing the interaction term (Model 3).

*Personal initiative.* Results for personal initiative are displayed in Table 11. The Null model showed a significant intercept and indicated that 99.19% of variance was at the individual level. Model 1 showed significant improvement over the Null model and explained 9.95% of variance at the person level. In Model 1, there were no significant relationships. Model 2 showed no improvement over Model 1 and explained no variance at the person level. Model 2 revealed that fairness of feedback was no significant predictor of personal initiative. Therefore, Hypothesis 1a was not supported. Finally, Model 3 showed significant improvement over Model 2 and explained additional 6.29% of variance at the person level. The interaction between fairness of feedback and focus on task details was significant. We performed simple slope tests, finding that at high levels of task-detail focus the relationship between fairness of feedback and personal initiative was positive (*simple slope* = 0.095, *SD* = 0.039,  $z = 2.456$ ,  $p < .05$ ) and at low levels of task-detail focus this relationship was negative (*simple slope* = -0.129, *SD* = 0.045,  $z = -2.888$ ,  $p < .01$ ). In finding a positive relationship between feedback fairness and personal initiative when individuals tended to focus their attention to task details after feedback reception and finding a negative relationship when attention to task details is low supported Hypothesis 2a. Figure 3 displays the interaction.

Additionally, we performed separate analyses for each single fairness dimension (see Table 12). Null model and Model 1 were similar for all fairness dimensions and similar to the results for overall fairness no significant main effects for the feedback fairness dimensions and task-detail focus were found in the Models 2. All interaction models (Models 3) showed significant improvement over Models 2, except for procedural feedback fairness. With the exception of procedural feedback fairness, all fairness dimensions interacted with focus on task-details on personal initiative.

Table 11

*Multilevel estimates for models predicting personal initiative*

Variable	Null model			Model 1			Model 2			Model 3		
	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t
Intercept	3.959	0.046	86.122***	3.956	0.046	86.614***	3.956	0.044	89.414***	3.953	0.043	91.425***
Frequency negative FI				-0.028	0.040	-0.691	-0.030	0.041	-0.736	-0.030	0.043	-0.707
Frequency positive FI				0.022	0.032	0.701	0.026	0.031	0.818	0.043	0.028	1.528
Frequency feedback seeking				0.022	0.037	0.599	0.026	0.038	0.690	0.024	0.040	0.590
Job tenure				-0.123	0.007	-1.715	-0.013	0.007	-1.736	-0.013	0.007	-1.895
Leadership position				0.218	0.110	1.976	0.220	0.111	1.988*	0.209	0.114	1.832
Percent supervisor				-0.192	0.113	-1.700	-0.185	0.116	-1.597	-0.224	0.111	-2.016*
Percent subordinate				0.276	0.142	1.947	0.283	0.139	2.032*	0.336	0.141	2.383*
Fairness of feedback							-0.024	0.045	-0.538	-0.017	0.038	-0.451
Task detail							0.024	0.043	0.570	0.032	0.037	0.886
Fairness x task detail										0.112	0.018	6.318***
Deviance			188.221			172.672			172.275			164.262
df			3			10			12			13
$\Delta$ Deviance						15.549*			0.397			8.013**
$\Delta$ df						7			2			1
Group-level intercept variance (SE)			0.001 (0.033)			0.002 (0.043)			0.001 (0.023)			0.001 (0.024)
Person-level intercept variance (SE)			0.260 (0.510)			0.234 (0.484)			0.234 (0.484)			0.220 (0.469)

*Note.* FI = feedback intervention. Percent supervisor = percent of external source-evaluations from a supervisor source, percent subordinate = percent of external source-evaluations from a subordinate source. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

Table 12

*Overview over multilevel estimates for single fairness dimensions predicting personal initiative*

Variable	Distributive Feedback Fairness			Procedural Feedback Fairness			Interpersonal Feedback Fairness			Informational Feedback Fairness		
	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t
Intercept	3.953	0.044	90.330***	3.956	0.044	89.086***	3.954	0.044	90.032***	3.951	0.042	94.716***
Frequency negative FI	-0.017	0.043	-0.398	-0.038	0.043	-0.880	-0.021	0.041	-0.522	-0.019	0.041	-0.471
Frequency positive FI	0.031	0.026	1.160	0.030	0.033	0.917	0.036	0.029	1.261	0.046	0.030	1.549
Frequency feedback seeking	0.017	0.039	0.442	0.024	0.038	0.627	0.027	0.038	0.714	0.021	0.040	0.525
Job tenure	-0.012	0.007	-1.615	-0.013	0.007	-1.792	-0.011	0.007	-1.613	-0.012	0.006	-1.907 <sup>+</sup>
Leadership position	0.206	0.115	1.793	0.221	0.110	2.001*	0.207	0.114	1.818 <sup>+</sup>	0.193	0.114	1.694 <sup>+</sup>
Percent supervisor	-0.261	0.118	-2.215*	-0.199	0.111	-1.783	-0.214	0.107	-1.992*	-0.202	0.118	-1.703 <sup>+</sup>
Percent subordinate	0.306	0.139	2.195*	0.299	0.141	2.124*	0.0307	0.139	2.213*	0.357	0.144	2.481*
Fairness of feedback	0.040	0.043	0.949	-0.016	0.049	-0.325	-0.001	0.035	-0.042	-0.047	0.040	-1.165
Task detail	0.022	0.037	0.599	0.019	0.045	0.418	0.034	0.034	1.000	0.040	0.036	1.120
Fairness x task detail	0.096	0.021	4.630***	0.060	0.032	1.835 <sup>+</sup>	0.105	0.015	7.178***	0.124	0.021	5.913***
Deviance			166.306			170.843			163.289			162.735
df			13			13			13			13
ΔDeviance			6.120*			1.616			8.772**			8.700**
Δdf			1			1			1			1
Group-level intercept variance (SE)			0.001 (0.021)			0.001 (0.028)			0.001 (0.035)			0.000 (0.013)
Person-level intercept variance (SE)			0.223 (0.473)			0.231 (0.481)			0.217 (0.466)			0.217(0.466)

*Note.* FI = feedback intervention. Percent supervisor = percent of external source-evaluations from a supervisor source, percent subordinate = percent of external source-evaluations from a subordinate source. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

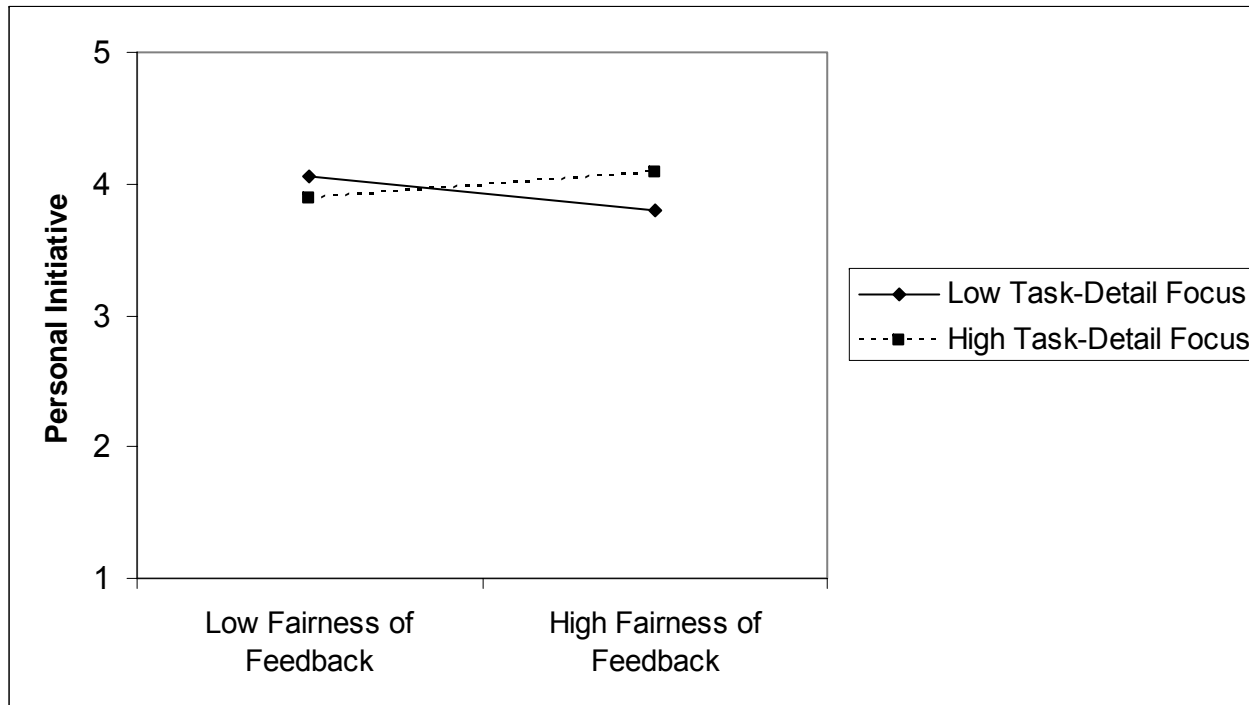


Figure 3. Interaction between fairness of feedback and thinking about task details on personal initiative.

Distributive feedback fairness explained 4.82% of variance compared to Model 2 (including the main effects), procedural feedback fairness explained 1.57%, interpersonal feedback fairness 7.20%, and informational feedback fairness explained 6.82% at the person level. Simple slope tests revealed a positive slope for distributive feedback at high task-detail level, and both a positive slope for interpersonal and informational fairness (marginally) at high task-detail level and a negative slope at low task-detail level. Thus, results of the single fairness dimensions are quite similar with the overall fairness results with the exception of distributive fairness which lacks a relationship to personal initiative at low task-detail level and procedural fairness not showing an interaction with task-detail level.

*Innovative Behavior.* Results for innovative behavior are displayed in Table 13. The Null model revealed that the intercept was significant and that 90.54% of variance were at the person level. Model 1 showed significant improvement over the Null model and explained 16.12% of variance at the person level. In Model 1, the control variable frequency of feedback seeking and the control variable percent of supervisor ratings in ratings of innovative behavior were both positively related to innovative behavior. Model 2 showed no significant improvement over Model 1 and explained only 1.67% of variance at the person level. Fairness of feedback was not significant in Model 2, thus Hypothesis 1b was not supported. Finally, Model 3 showed significant improvement over Model 2 and explained additional 5.28% of variance at the person level. In Model 3, the interaction between fairness of feedback and task-detail focus was significant. Simple slope tests revealed that the relationship between fairness of feedback and innovative behavior was not significant at high levels of task-details focus (*simple slope* = 0.107, *SD* = 0.083, *z* = 1.286, *n.s.*) but that this relationship was negative at low levels of task-details focus (*simple slope* = -0.253, *SD* = 0.060, *z* = -4.189, *p* < .001). Therefore, in finding that fairness of feedback was negatively related to innovative behavior when individuals had no tendency to direct their attention to task details after feedback reception, but unrelated if they focus on task-details, Hypothesis 2b was partially supported. Figure 4 displays this interaction.

Again, we performed separate analyses for each single fairness dimension. Results of the interaction models (Model 3) for innovative behavior are presented in Table 14. All Models 3 showed significant improvement over Models 2 (procedural fairness only marginal). Distributive feedback fairness explained additional 3.15% of variance compared to Model 2 (including the main effects), procedural feedback fairness explained 2.42%, interpersonal feedback fairness explained 3.94%, and informational feedback fairness explained 4.52% of variance at the person level. All four feedback fairness dimensions interacted with task-detail focus on innovative behavior.

Table 13

*Multilevel estimates for models predicting innovative behavior*

Variable	Null model			Model 1			Model 2			Model 3		
	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>	Coefficient	SE	<i>t</i>
Intercept	5.610	0.092	60.953***	4.588	0.086	53.231***	4.590	0.087	52.684***	4.586	0.081	56.322***
Frequency negative FI				0.002	0.065	0.025	-0.017	0.059	-0.280	-0.019	0.059	-0.321
Frequency positive FI				0.034	0.048	0.716	0.050	0.050	1.000	0.076	0.044	1.734
Frequency feedback seeking				0.117	0.059	1.992*	0.130	0.064	2.052*	0.126	0.068	1.855
Job tenure				-0.015	0.009	-1.685	-0.017	0.009	-1.831	-0.016	0.008	-1.948
Leadership position				0.344	0.192	1.790	0.345	0.191	1.802	0.338	0.186	1.815
Percent supervisor				-0.634	0.270	-2.348*	-0.609	0.275	-2.215*	-0.659	0.296	-2.223*
Percent subordinate				0.318	0.204	1.555	0.354	0.201	1.761	0.431	0.205	2.180*
Fairness of feedback							-0.087	0.070	-1.234	-0.073	0.059	-1.229
Task detail							0.028	0.067	0.419	0.042	0.063	0.675
Fairness x task detail										0.180	0.042	4.291***
Deviance			306.706			281.190			280.045			271.486
df			3			10			12			13
ΔDeviance						25.516**			1.155			8.559***
Δdf						7			2			1
Group-level intercept variance (SE)			0.065 (0.254)			0.062 (0.250)			0.069 (0.262)			0.052 (0.228)
Person-level intercept variance (SE)			0.618 (0.786)			0.518 (0.720)			0.714 (0.510)			0.483 (0.695)

*Note.* FI = feedback intervention. Percent supervisor = percent of external source-evaluations from a supervisor source, percent subordinate = percent of external source-evaluations from a subordinate source. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 14

Overview over multilevel estimates for single fairness dimensions predicting innovative behavior

Variable	Distributive Feedback Fairness			Procedural Feedback Fairness			Interpersonal Feedback Fairness			Informational Feedback Fairness		
	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t	Coefficient	SE	t
Intercept	4.580	0.082	56.096***	4.593	0.084	54.606***	4.584	0.081	56.543***	4.583	0.083	55.429***
Frequency negative FI	0.007	0.066	0.104	-0.027	0.062	-0.431	-0.003	0.062	-0.048	0.001	0.061	0.016
Frequency positive FI	0.056	0.046	1.217	0.051	0.053	0.965	0.061	0.043	1.401	0.077	0.043	1.776 <sup>+</sup>
Frequency feedback seeking	0.114	0.063	1.795 <sup>+</sup>	0.120	0.067	1.800 <sup>+</sup>	0.126	0.063	2.003 <sup>*</sup>	0.122	0.065	1.873 <sup>+</sup>
Job tenure	-0.015	0.009	-1.717 <sup>+</sup>	-0.015	0.009	-1.767 <sup>+</sup>	-0.014	0.009	-1.545	-0.014	0.008	-1.887 <sup>+</sup>
Leadership position	0.348	0.190	1.833 <sup>+</sup>	0.345	0.188	1.836 <sup>+</sup>	0.333	0.183	1.820 <sup>+</sup>	0.308	0.189	1.627
Percent supervisor	-0.702	0.304	-2.312 <sup>*</sup>	-0.648	0.290	-2.234 <sup>*</sup>	-0.660	0.286	-2.308 <sup>*</sup>	-0.619	0.279	-2.216 <sup>*</sup>
Percent subordinate	0.373	0.214	1.746 <sup>+</sup>	0.366	0.214	1.711 <sup>+</sup>	0.374	0.198	1.891 <sup>+</sup>	0.454	0.198	2.301 <sup>*</sup>
Fairness of feedback	0.020	0.070	0.282	-0.031	0.077	-0.408	-0.058	0.083	-0.692	-0.129	0.058	-2.232 <sup>*</sup>
Task detail	0.026	0.066	0.392	0.008	0.068	0.120	0.044	0.062	0.719	0.050	0.067	0.743
Fairness x task detail	0.145	0.042	3.459**	0.133	0.062	2.149 <sup>*</sup>	0.150	0.043	3.530**	0.180	0.046	3.950***
Deviance			275.404			277.695			271.951			270.536
df			13			13			13			13
ΔDeviance			5.664 <sup>*</sup>			3.438 <sup>+</sup>			7.352 <sup>*</sup>			7.537 <sup>*</sup>
Δdf			1			1			1			1
Group-level intercept variance (SE)			0.048 (0.220)			0.058 (0.240)			0.049 (0.222)			0.058 (0.242)
Person-level intercept variance (SE)			0.502 (0.708)			0.506 (0.711)			0.486 (0.697)			0.475 (0.689)

Note. FI = Feedback intervention. Percent supervisor = percent of external source-evaluations from a supervisor source, percent subordinate = percent of external source-evaluations from a subordinate source. <sup>+</sup>  $p < .10$ . <sup>\*</sup>  $p < .05$ . <sup>\*\*</sup>  $p < .01$ . <sup>\*\*\*</sup>  $p < .001$ .

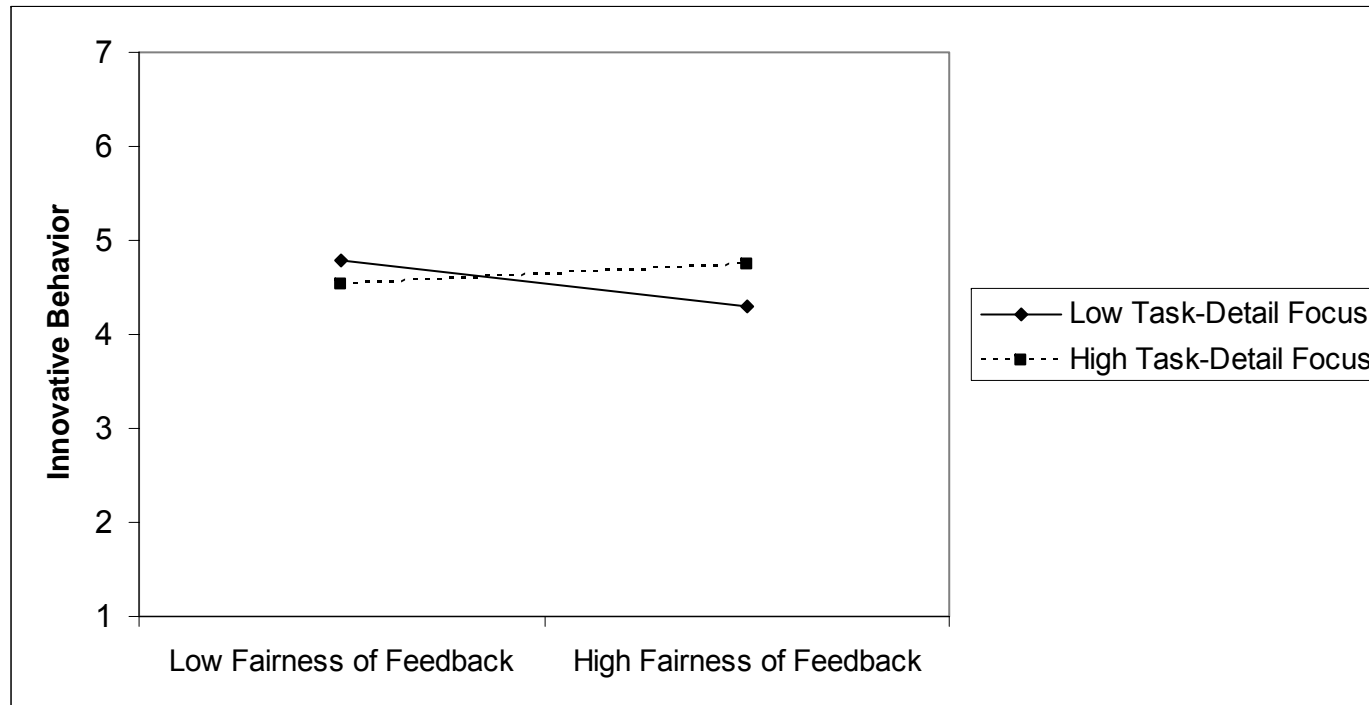


Figure 4. Interaction between fairness of feedback and thinking about task details on innovative behavior.



Simple slope tests showed a significant negative relationship between each single fairness dimension (not significant for procedural fairness, marginally significant for distributive fairness) and innovative behavior at low task-detail level and no relationship at high task-detail level (marginally significant for distributive fairness), thus, resembling the overall fairness results.

### **Discussion**

In this study, we examined the relationship between fairness perceptions of supervisor feedback on the one hand and personal initiative and innovative behavior on the other hand. Furthermore, we considered focus on task details, operationalized as focusing on weaknesses and need for improvement in one's work, after feedback reception as a moderator of this relationship. Contrary to our first hypothesis, we neither found a direct relationship of fairness of feedback with personal initiative nor with innovative behavior, but results indicated that these relationships depend on task-detail focus. More specifically, when participants reflected about task details after they had received feedback, there was a positive relationship between fair supervisor feedback and personal initiative and a negative relationship for both, personal initiative and innovative behavior when participants thought less at task details. These interactions explained a substantial amount of variance in personal initiative (6.29%) and innovative behavior (5.28%) even though the frequency of feedback was controlled. As our separate analyses showed, findings for procedural, distributive, interpersonal, and informational fairness were very similar as to those for overall fairness of feedback. Our analyses further suggest that no single fairness dimension is predominantly or singularly responsible for personal initiative or innovative behavior but that each dimension has a contribution. Looking at the variances explained by the interactions between feedback fairness and task-detail focus indicates that the interactions with interpersonal and informational fairness have the greatest explanatory power. Therefore, it seems worthwhile to enhance all fairness aspects in feedback delivery.

Although we found an interaction effect between fairness perception of supervisor feedback and task-detail focus on personal initiative and innovative behavior, the pattern of results is not exactly what we predicted. We expected a rather strong positive relationship between feedback fairness and the outcomes at high levels of task-detail focus and a weaker negative relationship at low levels of task-detail focus - the reason why we assumed an overall positive relationship between feedback fairness and the outcomes. What we found was a weaker or non-existing positive relationship at high levels and a comparatively larger negative relationship at low levels of task-detail focus. We suggest two possible explanations of these results.

The first suggestion is that feedback perceived as fair is no vigorous stimulator of personal initiative and particularly innovative behavior even if the recipients focus their atten-

tion to task details based on the feedback. Feedback intervention theory and its preliminary test (Kluger & DeNisi, 1996) propose that a feedback message must help to reject erroneous hypotheses in order to direct the recipient's attention to the details of the task. Therefore, besides being perceived as fair and directing the recipients' attention to task details, the feedback message must probably include helpful cues directly addressing the objects of particularly innovative behavior. Our results suggest that fair feedback might on the contrary discourage or prevent proactive behaviors if it does not facilitate focusing on task details because of two reasons. First, mainly negative feedback that is perceived as fair and thus accepted might carry the message that there is no need for this particular behavior and no attempts are made to elaborate on this issue. Second, meta-task processes are likely to occur that distract the attention away from the beneficial behavior and focus it on either self-relevant processes or other tasks (cf. Kluger & DeNisi, 1996). Nevertheless, our finding of a positive relationship between fairness perceptions of supervisor feedback and personal initiative when recipients tend to focus on task-details after feedback reception supports the notion that personal initiative stems from deep analysis of one's work tasks (Frese & Fay, 2001). This result is particularly noteworthy and underlines the relevance of feedback fairness for proactive behaviors.

The second conclusion from these results could be that supervisor feedback is not the most important source of information about future challenges to be addressed with personal initiative and innovative behavior. Reciprocation for fair supervisor feedback might express in different behavior domains. Parker et al. (2006) noticed that the importance of supervisor behavior as predictor of proactive behaviors is controversial. Our study contributes to this debate in showing that fairness perceptions of supervisor feedback might contribute to personal initiative under certain circumstances but might be detrimental under other circumstances. It would be interesting to examine fairness of supervisor feedback in concert with characteristics of the supervisor like his or her own innovation orientation. Maybe if the supervisor stresses the importance of change and innovation, employees are more likely to interpret supervisor feedback in terms of encouragement for proactive behaviors (see for example Boerner, Eisenbeiss, & Griesser, 2007 for an argumentation about the relationship between transformational leadership and employee innovation).

### **Study Strengths and Limitations**

The interpretation and derivation of implications of our results must be done in the light of our study's particular strengths and limitations. While the cross-sectional design is an obvious limitation, the behavior measures derived from external sources are clearly advantageous. Due to the cross-sectional design causal conclusions about the direction of the fairness of feedback – behavior relationships emerging at the task-detail focus levels are not possible. It is conceivable that over time employees who think about task details after receiv-

ing feedback are rewarded with fairer feedback for their personal initiative while at low levels of thinking about task details after receiving feedback there is no such reward for this engagement because results of personal initiative and innovative behavior might be poorer. It could simply be easier to give appreciating and careful feedback to employees who use to think about the feedback adequately and achieve sensible results with their initiative as compared to employees who do not. Thus, there might be reciprocal relationships. Nevertheless, the results of our study and our interpretation of the results are helpful in pointing to an important mechanism of encouraging personal initiative and innovative behavior: in providing fair feedback including cues that direct the recipients' attention to the task-detail level.

As our results are based on data from two different sources, they are less threatened by common source biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We included supervisor, colleagues, and subordinate ratings of the employee behaviors in our measures of the dependent variables. This might be considered as a disadvantage, because ratings from different rater sources have been found to agree only moderately (Harris & Schaubroek, 1988; Woehr, Sheehan, & Bennett, 2005). Nevertheless, the interrater-agreement indices show that there is no alarming difference in the agreement of colleague-only ratings and ratings stemming from the three different sources. Moreover, we controlled for possible rating-source effects in our analyses. Therefore, our results should be unaffected by eventual rater source-based biases. On the contrary, our behavior measures might have gained from including three rater sources in being particularly accurate.

Our measure of task-detail focus in its present form is restricted to thinking about task details concerning *weaknesses* in task accomplishment. This is a clear limitation of our measure as this is not the only possible way to focus on one's tasks. For example, focusing on very well accomplished work steps might be additionally helpful to separate more useful from less useful practices and being directed to alternative methods could enhance task accomplishment. In future studies, a broader range of task-detail level indicators is desirable.

### **Future Research and Practical Implications**

One necessary step in further research is to replicate our findings and extend them with regard to attention focus on meta-task and task-motivational level, thus testing the different assumptions of feedback intervention theory. Additionally, more research is needed about feedback characteristics that facilitate thinking about task details fostering proactive behaviors subsequently. Which cues must be included in the feedback message? Moreover, both supervisor and employee characteristics, leadership style, and contextual characteristics might influence the relationship between feedback, feedback-related attention focus, and proactive behavior. Important variables can be borrowed from research about predictors of proactive behaviors (Grant & Ashford, in press; Oldham & Cummings, 1996; Parker et al., 2006). Thus, we suggest to examine potential other moderators and three-way interactions in

the relationship between fair supervisor feedback and personal initiative and innovative behavior. Also feedback intervention theory might be a helpful starting point, suggesting feedback intervention cues, task characteristics, and situational variables as potential moderators in the feedback – performance relationship. The underlying question of these efforts is whether feedback is a suitable leadership tool to encourage proactive behaviors at work. A satisfactory answer to this question might help to understand the contradictory relationship between feedback and performance in the light of the requirements of nowadays work environments and contribute to our understanding of employee proactivity.

These research aims are ideally pursued in longitudinal studies examining both feedback – behavior relationships in established leader-follower configurations as well as the effect of fair feedback on the development of personal initiative and innovative behavior in newcomers. Moreover, studies including leader trainings in how to formulate and deliver feedback fairly to subordinates would be interesting for supporting the assumption that fair feedback causally affects employee proactive behaviors at work.

Similarly, as a practical implication of our results we recommend to introduce feedback fairness as central aspect in leadership trainings (see also Sparr & Sonnentag, 2008), teaching leaders about how to provide feedback in a fair manner in order to enhance not only well-being but also employee productivity. Additionally, including cues into the feedback directing the attention of the feedback recipient to the task at hand seems to be important for the feedback to unfold its beneficial effects.

As a conclusion, supervisor feedback perceived as fair seems to have the potential to benefit innovative and initiative behavior at work but only if the focus of the recipient's attention is directed to the details of the task at hand. Therefore, leaders need to take care in feedback delivery in order to encourage personal initiative and innovative behavior at work. They may want trying to be fair and giving helpful feedback cues at the task-detail level, thus deepening the employee's involvement into their work.

## 5. General Discussion

“The importance of justice cannot be overstated”  
(Folger, 1984, p. ix)

### 5.1 Overall Summary and Integration of the Results

Focusing on beneficial properties of informal performance feedback provided by supervisors in the daily work context, this dissertation aims to contribute to the literature by adding three pieces to the complex feedback - outcome puzzle. In this discussion, I first summarize the three dissertation's studies. Thereafter, I integrate the results of the three studies into an extended version of the feedback intervention theory (Kluger & DeNisi, 1996) by referring to social exchange theory (Blau, 1964) and the multiple needs model of justice (Cropanzano et al., 2001). I will argue that a beneficial feedback environment and fair feedback share several characteristics and that both serve important self-relevant needs of feedback recipients. As a result, both fair feedback and a beneficial feedback environment are motivating in fulfilling self-relevant goals. Thus, on the one side well-being is enhanced and on the other side the individual has an increased capacity for engaging in positive work behavior (personal initiative, innovative behavior). According to social exchange theory (Blau, 1964), the feedback recipient will be motivated to reciprocate for obtained benefits. Therefore, positive work behavior is more likely after the reception of fair feedback. Nevertheless, considering this in the framework of feedback intervention theory, it is evident that the attention of the feedback recipient must be directed specifically (i.e., via goal setting) to those tasks intended to improve. Otherwise, the positive feedback effects might not correspond with the source's intention or might fade away.

#### 5.1.1 Summary of the Studies

The first study examined the relationship between the feedback environment and well-being at work. Personal control over information, personal control over decisions, and low feelings of helplessness were suggested as mediating mechanisms of this relationship. As the results show, the feedback environment was positively related to job satisfaction and negatively related to job depression and turnover intentions, but unrelated to job anxiety. Furthermore, the relationships between the feedback environment and job depression as well as job satisfaction, were partially mediated by personal control and helplessness. Helplessness also partially mediated the relationship between feedback environment and turnover intentions. These results indicate that beneficial feedback as it is provided in a positive feedback environment contributes to the fundamental need for control. Although the study design does not allow for causal conclusions, the assumed causal mechanism that the feedback environment contributes to the need satisfaction, which results in enhanced well-being

at work, is plausible given the existing similar findings regarding the feedback environment (Anseel & Lievens, 2007; Rosen et al., 2006).

Study 2 examined the relationship between fairness perceptions of supervisory feedback and well-being at work as indicated by job satisfaction, job depression, job anxiety, turnover intentions and feelings of control. The leader member exchange relationship (LMX) was examined as a mediator of these relationships. Fair feedback is likely to contribute to a good relationship between feedback source and recipient (e.g., Roch & Shanock, 2006; Stinglhamber, De Cremer, & Mercken, 2006). Having a good relationship to one's supervisor can be assumed to serve important needs, including in particular the need for belonging, but also the needs of control and positive self-regard as the supervisor has impact on the individual's work environment and self-concept (Lord & Brown, 2001). Therefore, enhanced well-being is a likely favorable outcome. The results of this study show that LMX quality was indeed a partial mediator in the relationships between perceived supervisory feedback fairness and the outcomes with the exception of job anxiety. These results are comparable to the results from Study 1: beneficial feedback is related to well-being at work in satisfying central needs. Feedback fairness and the feedback environment facets have a lot in common, as I will point out below.

While the studies so far have shown that beneficial feedback is positively related to need satisfaction (personal control, high-quality exchange relationships) and well-being at work, Study 3 dealt with the relationship between fair feedback and proactive behavior at work (personal initiative and innovative behavior). Perceived fairness of supervisor feedback was differently related to proactive behavior, contingent on the individual's tendency to think about weaknesses in his or her work (referred to as task-detail focus) after feedback reception. When individuals tended not to think about these task details there was a negative relationship and when individuals tended to think a lot about task details there was either no or a positive relationship. Therefore, the conclusion can be drawn that fair feedback has the potential to benefit not only well-being but also proactive behavior at work under certain conditions. These results can be reasonably interpreted in the framework of feedback intervention theory. The rationale for this interpretation is outlined below.

Figure 5 provides a schematic overview over the three studies' results. In the next step, I will integrate these results into an overall model. Firstly, I will point out the similarity of the feedback environment facets and fairness of feedback. Secondly, the relationship between fairness and needs will be integrated into the feedback intervention theory. Thirdly, the implications for well-being and different types of performance are highlighted.

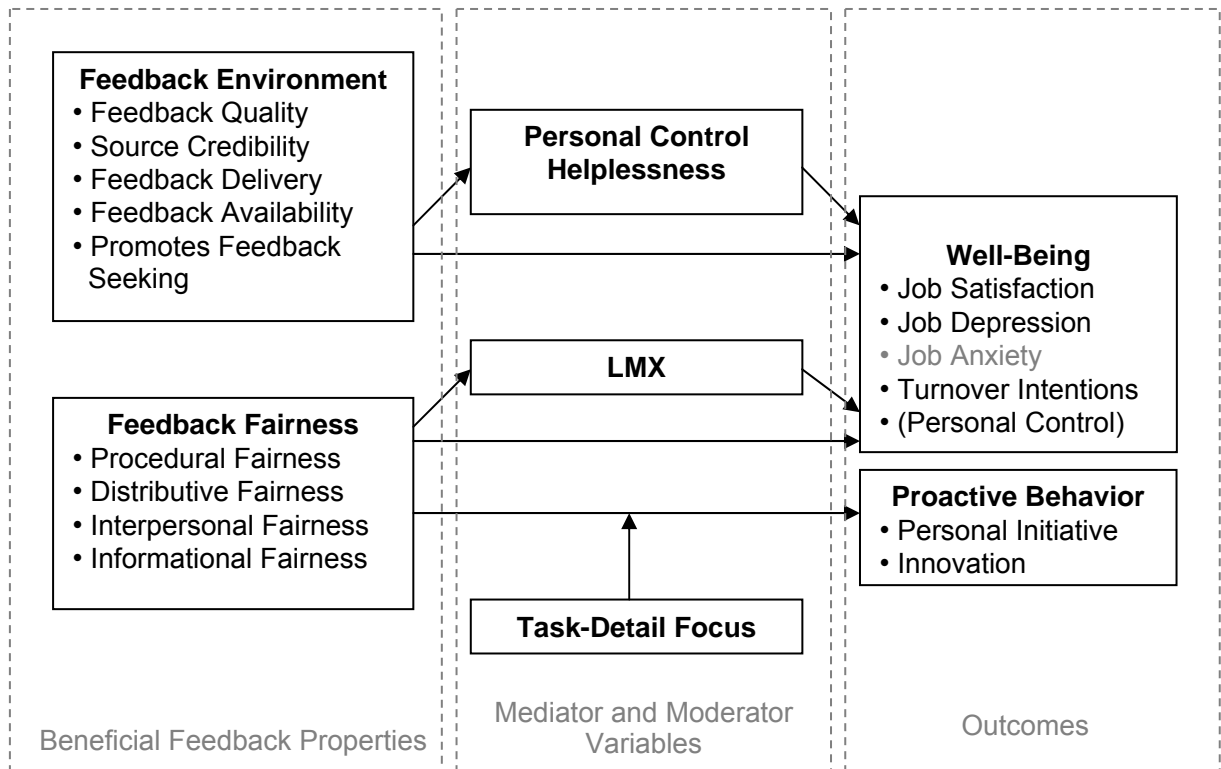


Figure 5. Overview of the relationships examined in this dissertation

### 5.1.2 Feedback Environment and Fairness of Feedback

The concepts of the feedback environment and fair feedback are both introduced in the General Introduction. In summary, a beneficial feedback environment is characterized by a trustworthy and expert source (source credibility) who provides consistent and useful feedback (feedback quality) in a considerate manner with positive intentions (feedback delivery), who provides both positive and negative feedback dependent on what the recipient's performance warrants (favorable and unfavorable feedback), who is readily available (source availability), and who encourages feedback seeking (promotes feedback seeking) (Steelman et al., 2004). Fair feedback adequately reflects the recipient's efforts and results (distributive fairness), is provided based on adequately and consistently applied procedures (procedural fairness), delivered in a polite, respectful, and appreciative manner (interpersonal fairness), and includes truthful and adequate explanations (informational fairness) (adapted from general organizational fairness; Colquitt, 2001).

Taking a closer look, similarities and relationships between these two concepts become evident. Fairness of feedback is likely to contribute to judgments on source credibility because trust in the feedback message and the source's expertise is fostered by fair procedures, content, treatment, and explanations (cf. Colquitt et al., 2001 for the relationships between organizational fairness, trust, and source evaluation). Feedback quality shares important features with distributive fairness and informational fairness perceptions, as recipients will experience feedback as helpful only if they can identify with it and accept the feedback due to the explanations. But also distributive fairness is likely to contribute to feedback qual-

ity because consistency has been found to be an important predictor of feedback acceptance (Ilgen et al., 1979). Favorable and unfavorable feedback share aspects with both procedural and distributive fairness as both the feedback content and the procedure of giving adequate feedback whenever the performance warrants it are judged. Feedback delivery and interpersonal fairness overlap grossly in their focus on respectful and appreciative treatment. Source availability and promotion of feedback seeking are likely to contribute to procedural, interpersonal, and informational fairness judgments as they allow the feedback recipient to be active in the feedback process and ensure adequate treatment. In conclusion, aspects of the feedback environment and fairness of feedback are likely to be closely interwoven. I assume that the fairness of feedback contributes to the development and maintenance of good feedback environments. The other way round, the facets of good feedback environments are likely to enhance feedback fairness perceptions in individuals. Both concepts bring along great potential for understanding beneficial feedback processes.

### **5.1.3 Feedback Environment, Fairness of Feedback, and Multiple Needs**

Why are a good feedback environment and feedback fairness important to employees? Of course, fairness is likely to enhance the perceived diagnostic value of the feedback, because it is particularly trustworthy. Additionally, the multiple needs model of justice (Cropanzano et al., 2001) claims that fairness matters to individuals because fairness serves fundamental psychological needs. The identified needs include control, belonging, self-esteem, and meaningful existence referring to the multiple needs model of Williams (1991). The need for belonging is “defined as the desire for frequent, positive, and stable interactions with others” (Williams, 1991, p. 148), the need for self-esteem refers to the individual’s belief to be a good and worthy person, the need for control “manifests itself as a desire to predict and manage important interactions (Cropanzano et al., 2001, p. 176), and the need for a meaningful existence roots in the individuals’ “want to be virtuous actors in a just world” (Cropanzano et al., 2001, p. 178). Mistreatment, that is unfair feedback, will result into “defensive cognitions, negative affect, and coping behavior” (Cropanzano et al., 2001, p. 175).

This model can be easily applied to fairness of feedback. Because of the proposed connection between the feedback environment facets and fairness of feedback (see 5.1.2) I cautiously assume similar benefits from the feedback environment. Both a good feedback environment and perceived feedback fairness are likely to give control to the recipients (as indicated in Study 1 (mediator) and 2 (outcome)), as fair feedback and a good feedback environment include important trustworthy information and open personal decision latitudes. As argued in Study 2, fair feedback is likely to contribute to the relationship between supervisor (feedback source) and employee, thus contributing to the need for belonging. Moreover, appreciative treatment in fair feedback, and a good feedback environment and careful explanations (interpersonal and informational fairness) are likely to protect the individual’s self-



regard, even in the case of negative feedback. Finally, Folger (1998) argued that fairness is a basic human quality that gives meaning to life and is therefore a reward in itself independent from other outcomes (see also Tolman, 2006).

Concluding, I assume from the above arguments that fairness of feedback and a good feedback environment (particularly feedback quality, feedback delivery, source credibility) fulfill central individuals' needs. Study 1 and 2 provided support for this assumption as a beneficial feedback environment was positively related to perceived control and fairness of feedback was positively related to a good LMX relationship, an indicator for belonging, and also perceived control at work. As individuals' selves are vulnerable to criticism, it is only if self-relevant needs are cared for in feedback interactions that individuals will be able to focus on their work tasks and benefit from the feedback content.

#### **5.1.4 Fairness of Feedback and the Feedback Intervention Theory**

Based on the assumption that fairness of feedback serves central individual needs, I suggest that fair feedback (and similarly a good feedback environment) is less likely to direct the recipient's attention to the self than unfair feedback. This assumption can be understood more easily when considered in the framework of justice goal hierarchies as proposed by Gillespie and Greenberg (2005). Similar to Cropanzano et al. (2001), Gillespie and Greenberg (2005) argue that fairness serves fundamental psychological needs. In addition, they suggest three levels of fairness goals: event level (fairness in events), entity level (fair relationships with entities; e.g., the supervisor), and at the top of the hierarchy the central needs (Gillespie and Greenberg identify the need for belonging as the ultimate need. The question whether there is an ultimate need is not important to the point I want to make here; for a discussion see Colquitt, Greenberg, and Scott, 2005). Achieving fairness in an event serves the goal of having fair relationships to entities, which finally serves the basic needs. In the goal hierarchy outlined in the feedback intervention theory (Kluger & DeNisi, 1996), these fairness goal levels can be identified as meta-task goals. Based on these assumptions, I propose that fair feedback satisfies basic needs that are high up in the goal hierarchy and thus reduces the likelihood that the feedback directs the recipient's attention to the meta-task level. Fair feedback signals to the individual that he or she is appreciated and cared for, that his or her self is safe from image loss, and that the feedback information's intention is friendly. Cognitive resources need not be burdened by self-relevant thoughts (attention to unmet or threatened needs at the meta-task level). Thus, the individual has capacities to direct attention to his or her work based on the feedback. Additionally, enhanced well-being is a likely positive outcome. Although free cognitive capacities are clearly advantageous, this does not mean that the attention is automatically directed to the intended tasks addressed by the feedback source. As DeNisi and Kluger (2000, p. 132) state

“the major point is that the effectiveness of any feedback intervention depends on the level at which the intervention focuses our attention. If no explicit cues are included in the feedback message of which behavior should be fostered, the feedback does not have the power to direct the behavior precisely.”

In the absence of explicit cues it is likely that the individual's aim of reciprocating for the received benefit (fair feedback) is expressed in a wide range of desirable behaviors at work. These desirable behaviors include increased task performance as well as going beyond what is required, for example, organizational citizenship behavior (cf. van Knippenberg et al., 2007 for correlates of leader fairness) or proactive behaviors like personal initiative and innovative behavior (see Chapter 4). Explicit cues directing the attention to the specific tasks intended by the sources could be specific goals based on the feedback. Based on the vast findings regarding goal-setting theory (Locke & Latham, 1990; 2002) we know that neither goals without feedback nor feedback without goals work well. Therefore, besides paying attention to fairness aspects in feedback delivery it is crucial to connect the feedback with a specific goal. Ideally, this goal represents a concept for future actions shared by feedback recipient and source. More specifically, this goal should either include specific aspects of task direction and progress (task motivation level; e.g., velocity information - cf. Kluger & DeNisi, 1996) or improvement in task details (task detail level; e.g. corrective information - cf. Kluger & DeNisi, 1996) that guide the recipient's attention (cf. DeNisi & Kluger, 2000).

As outlined above, this dissertation's studies provide some empirical support for these assumptions. Fairness of feedback and the feedback environment are both positively related to well-being at work. Important mechanisms are perceived control (assumed to serve the need for control; see Study 1) and high-quality LMX (assumed to serve at least the need for belonging but indirectly also the other needs; see Study 2). Moreover, fairness of feedback is positively related to personal initiative when individuals tend to think about their work after feedback reception (see Study 3). When they do not think about task details, there is a negative relationship to personal initiative and innovative behavior. In that case, the positive effects of fairness might be expressed differently, for example in showing enhanced helping behavior. Perhaps, without directing their attention to their work tasks based on the feedback individuals feel safe due to their enhanced well-being and do not feel a need for special initiative or innovative efforts. More research is needed to understand what happens when individuals do not focus on their work after fair feedback. Possible moderating variables could be the person's status of need satisfaction as persons with a high discrepancy between their actual and target states might nevertheless focus on self-relevant goals and miss the chance to focus on their work. Trait justice sensitivity (Schmitt, Gollwitzer, Maes, & Arbach, 2005) is also a likely moderator of the fairness-outcome relationship. Moreover, self-efficacy might be an important factor. Individuals with low self-efficacy can be assumed to be less likely to engage in improvement because they lack self-confidence (Bandura, 1997).

According to Kluger and DeNisi (1996), feedback recipients have four possibilities of how to deal with feedback: effort can be increased when a feedback-standard gap is indicated; the standard can be abandoned when it seems to be unlikely to reach the specified goal; the standard might be changed; the feedback can be rejected. These authors cite empirical evidence for each strategy. Unfairness enhances the likelihood of feedback rejection because the feedback will be perceived as unjustified (particularly when distributive and procedural fairness are low). For example, an experiment by Gilliland (1994) showed that students who were denied a job position due to an unfair process reported higher levels of self-efficacy than students who were denied the job position based on a fair process. This example indicates that unfair procedures allow for external attribution of failure (van den Bos, Bruins, Wilke, & Dronkert, 1999) and so protect the self from disturbance. To conclude, unfair treatment in the feedback process might be accountable for feedback rejection and thus for zero or negative relationships between feedback and positive behavior at work. Nevertheless, it is important to note again that providing fair feedback does not guarantee a performance improvement in the expected direction but that attention needs to be directed to the intended tasks, most effectively with the help of goal setting (cf. Locke & Latham, 1990; 2002).

## **5.2 Methodological Strengths and Limitations**

As there is no perfect study (Schmidt & Hunter, 2001 on the “myth of the perfect study”), also the three studies conducted in the scope of this dissertation are affected with methodical weaknesses - but also with specific strengths.

All three studies included in this dissertation were conducted in field settings using samples consisting of employees from varying branches (IT, advertising, public service, R&D, etc.) and positions. In all three studies, experiences with informal supervisor feedback were either assessed retrospectively over a time frame of six month or in general. This procedure allowed general experiences with feedback and their relationships with the outcome variable to be examined. While this generality can be considered as a strength as stable relationships are detected, at the same time it is a weakness because more subtle relationships might be masked by other influences. One might criticize the fact that no changes over time were examined in this dissertation’s studies. Taking a closer look at feedback research, it is apparent that changes in feedback-outcome relationships are only to be expected if there is a change in the relationship between the feedback source and recipient, if there is an intervention or if the work situation changes. Otherwise, it is very likely that supervisor and employee have developed a stable feedback interaction pattern that does not change significantly. If measurable change in outcomes based on feedback is the object of study, one needs to focus on newcomers or new supervisor-employee dyads. Therefore, the chosen

study designs suit the stable patterns of feedback interactions and are appropriate for examining stable relationships between feedback and outcomes.

All three studies were based on online questionnaires. Therefore, these studies are prone to common method variance (Podsakoff et al., 2003). Common method variance has two serious possible consequences. Firstly, existing relationships can be inflated, and second, non-existing relationships can get significant. There are numerous sources of common method bias resulting from reliance on pure self-reports, specific item characteristics, item context and measurement context. Podsakoff et al. (2003) summarize that common method bias can be controlled by either the study's design or statistical controls. In Study 2, predictor and criterion variables were obtained at different times. In Study 3, predictor and criterion variables were assessed from different sources. Both procedures are suggested to reduce biases. In all of the studies we took care to design our questionnaires in order to reduce any problems of comprehension and to avoid monotony in the answer formats. We included statements of confidentiality and no right or wrong answers. Moreover, in all of the studies we used confirmatory factor analysis to examine if similar constructs are separable. In Study 2, we statistically controlled for trait negative affectivity, a variable known to cause systematic biases. This procedure is not without controversy (Spector, Zapf, Chen, & Frese, 2000). As well-being was the outcome in Study 1 and 2, the concepts of negative affectivity and the well-being measures (particularly job anxiety and job depression) overlap and therefore controlling for negative affectivity affects the examined relationships of the predictor variables with well-being. Therefore, based on reviewers' comments, we renounced using this procedure in Study 1. With respect to the field studies, the conclusion can be drawn that particularly the results of Study 2 and 3 have been relieved from potential common method bias to a reasonable degree. Study 1 is based solely on self-reports. In additional analyses (reported in the Appendix) of the Study 1 relationships we included negative affectivity as a control variable. Analyses showed that including the general tendency to react with negative affect to positive and negative feedback did not affect the results. Therefore, negative affectivity seems to be no severe threat in this case. As the results of this study replicated earlier results from a study with two measurement times (Anseel & Lievens, 2007) the validity of the findings can be cautiously assumed.

A remaining problem is the question of causality. None of the field studies justifies causal conclusions. While there is good theoretical and empirical reason to assume the causal directions as proposed for each single study, reverse causality can not be ruled out. In fact, reciprocal relationships are very likely, for example, between the feedback environment and well-being. As argued, a good feedback environment satisfies important needs of the employee, thus fostering well-being. Conversely, a satisfied and well-balanced employee has more resources to contribute to a good feedback environment. In all field studies, partici-

pants had, on average, spent a considerable amount of time in their jobs, organizations, and with their respective supervisors. Therefore, reciprocal relationships between the dependent and independent variables are even more likely. Nevertheless, the directions examined and supported in the three studies are based on important mechanisms that can be reasonably influenced by interventions, for example, supervisor feedback trainings. Thus, theoretical, empirical and practical reasons support the assumed models and derived results despite methodological shortcomings and limitations.

### **5.3 Implications for Research and Practice**

Although there is a long tradition of feedback research (Kluger & DeNisi, 1996; Ashford, Blatt, & VandeWalle, 2003), there are still important questions left without answer and also a deep need for integrating the various findings. One promising attempt to integrate important properties of feedback is the feedback environment. Fairness of feedback seems to be equally promising for understanding and integrating consequences of feedback based on using the multiple needs theory of justice (Cropanzano et al., 2001). Feedback intervention theory is the most integrative theory about the feedback-performance relationship we do have today. This dissertation aimed at making a contribution in further extending feedback knowledge and integrating it into the feedback intervention theory. Based on these efforts and the theoretical considerations outlined above, I propose the following implications for future research.

Firstly, research on the feedback environment and fairness of feedback needs to be extended and integrated. The first important research question that is brought up by this dissertation is: What is the causal relationship between fairness perceptions of feedback and the facets of the feedback environment? Reciprocal relationships are likely but need to be tested. A related question is whether it would be more effective to train supervisors in the feedback environment facets, fairness aspects, or both. Both sorts of trainings are likely to have positive spill-over effects on other leadership roles, because supervisors are sensitized for fairness issues and their subordinates' needs. Additionally, longitudinal studies are needed to examine the interplay between beneficial feedback interactions and desirable outcomes over time. Idealized longitudinal feedback research accompanies employees from their first experiences with feedback in the hiring process until they leave the organization.

Secondly, more empirical evidence about the assumed relationship between fairness of feedback, the feedback environment, and need satisfaction is desirable. To examine if fair feedback indeed serves important self-relevant needs, and thus releases resources for task-related attention, experiments need to be conducted. An experimental setting could, for example, either include or ostracize participants from a desirable social interaction with other individuals, thus satisfying or inducing a highly salient need for belonging (but in fact, this treatment should also affect control and self-regard needs). Afterwards, participants receive

feedback about their performance in a task accomplished previously. From their reactions to this treatment we can learn whether need satisfaction is important for the feedback-performance relationship.

Thirdly, it is probably most important to further integrate the presented assumptions about feedback fairness and need satisfaction into the feedback intervention theory and in this respect empirically test the feedback intervention theory. Testing the feedback intervention theory needs to start with a good operationalization of the attention focus after feedback reception. It would be most interesting to assess individuals' thoughts about a feedback interaction and message over the course of time in order to understand initial and later reactions to the feedback and subsequent consequences of the reaction pattern. The relationships of different feedback cues together with goal-setting interventions on the attention focus need to be examined. Concluding from past feedback research, in all future studies I would expect and explicitly test complex interactions with situational and personal variables in the prediction of behavioral outcomes.

Of course, it would be interesting to examine all proposed relationships not only in informal feedback but also in formal feedback settings and with feedback from other sources than supervisors, including coworkers, subordinates, and customers.

All three studies included in this dissertation offered as practical implication to take efforts in order to enhance the feedback communication between source (supervisor) and receiver. Criteria for beneficial feedback included in feedback fairness and the feedback environment can be used to systematically train leaders' skills for feedback delivery. Moreover, the theoretical considerations presented in this overall discussion point to the need to additionally train leaders in how to actively direct the recipients' attention to focal points and how to negotiate feedback-based goals with their followers. Thus, practical advice regarding feedback can use cumulative evidence stemming from feedback, fairness, leadership, and goal-setting research. There is empirical evidence that fairness trainings are effective (Skarlicki & Latham, 2005). Skarlicki and Latham (2005) reviewed five studies that showed positive effects of supervisor fairness trainings on various outcomes like OCB or theft. A more recent study (Greenberg, 2006) showed that insomnia in nurses caused by reduced pay was lower in nurses whose supervisors had been trained in procedural fairness than in nurses whose supervisors did not receive such training. These findings highlight the potential of supervisor fairness trainings.

A prototypical training about fair feedback delivery could have the following elements. Firstly, according to Skarlicki and Latham (2005) the specific needs of the organization, trainees, and tasks requiring training need to be assessed. The focus of the training is directed to the desired outcomes (e.g., proactive behavior or employee well-being). Participants will be sensitized for communication problems in general, asked for personal experiences with fair

and unfair feedback and informed about feedback fairness criteria. Implications for well-being, need satisfaction, and positive work behavior are deduced from the participants' experiences. The need to specifically direct the feedback recipient's attention, to make prospects explicit and to form shared goals based on the feedback and the consent of goals has to be made explicit. The feedback source's motives and anxieties (cf. Larson, 1984) that hinder proper feedback delivery need to be addressed. Goal-setting practices need to be discussed in line with the findings of goal setting theory (Locke & Latham, 1990). This training concept will enable feedback sources, in this case, supervisors, to enhance their feedback-related behavior and thus contribute to the employees' well-being and positive work behaviors. Active participation, distributed practice, feedback on the trainees' progresses, and meaningful training material will contribute to the training success (Skarlicki & Latham, 2005).

Practical consequences also include the need to reconsider formal feedback systems such as 360° feedback. These systems need to be carefully designed in order to consider fairness and proper goals. For example, Elicker, Levy, and Hall (2006) found that employee fairness evaluation of the performance appraisal process was positively related to the perceived accuracy and utility of the feedback and to improvement motivation. Moreover, only feedback sources who are aware of the complexity of feedback processes and who already reflected their own feedback-related behavior will be able to contribute to good feedback processes. Therefore, supervisor fairness trainings might not only enhance the quality of informal feedback exchange but also the effectiveness of formal feedback processes. Moreover, training effects are likely to spill over to other leadership roles and thus contribute to effective organizational functioning, enhanced acceptance of decisions, beneficial ways of how to deliver bad news, business ethics, and coping with differences (Skarlicki & Latham, 2005).

#### **5.4 Final Conclusions**

I strongly believe that the capability of providing beneficial feedback to others has, on the one side a lot to do with deep respect and affection for human individuality, individual needs, and individual perceptions, and on the other side has a lot to do with knowing oneself - one's own needs, fears, and capabilities. Therefore, training leaders in how to provide feedback fairly to their employees is a good start but most probably is not the whole story. Leaders need to reflect how their behavior fosters or prevents employees' trust and openness for feedback and feedback seeking (cf. Moss & Sanchez, 2004) and how their feedback delivery is influenced by employee behavior (cf. Moss, Valenzi, & Taggart, 2003). Moreover, it seems to be crucial that leaders have a clear goal in mind when giving feedback so that they are able to share this goal with the recipient and to negotiate a common goal together. Fairness will support this process but the beneficial effects of fairness will fade away without proper direction. Therefore, leaders need to face themselves first, their own behavior and

their own needs and goals before they can benevolently direct the efforts of other people. Additionally and perhaps most importantly, sometimes feedback might stimulate growth in personality without necessarily finding positive expression in performance, but rather in personal development, thus contributing to a healthy and stable workforce. Finally, it seems for me to be quite evident that we cannot establish strict rules about feedback delivery but only give some guidance to feedback sources. The important task for each single person is to be open, sensitive, and appreciating for the unique human being he or she wants to give a feedback message in order to help him or her grow.



## 6. References

- Amabile, T. M., Schatzel, E. A., Moneta, G. B., & Kramer, S. J. (2004). Leader behaviors and the work environment for creativity: Perceived leader support. *Leadership Quarterly*, *15*, 5-32.
- Anseel, F., & Lievens, F. (2007). The long-term impact of the feedback environment on job satisfaction: A field study in a Belgian context. *Applied Psychology: An International Review*, *56*, 254-266.
- Anseel, F., Lievens, F., & Levy, P. E. (2007). A self-motives perspective on feedback-seeking behavior: Linking organizational behavior and social psychology research. *International Journal of Management Reviews*, *9*, 211-236.
- Aryee, S., & Chen, Z. X. (2006). Leader-member exchange in a Chinese context: Antecedents, the mediating role of psychological empowerment and outcomes. *Journal of Business Research*, *59*, 793-801.
- Ashford, S. J. (1986). Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal*, *29*, 465-487.
- Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance*, *32*, 370-398.
- Ashford, S. J., & Cummings, L. L. (1985). Proactive feedback seeking: The instrumental use of the information environment. *Journal of Occupational Psychology*, *58*, 67-79.
- Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. *Journal of Management*, *29*, 773-799.
- Ashforth, B. E. (1989). The experience of powerlessness in organizations. *Organizational Behavior and Human Decision Processes*, *43*, 207-242.
- Ashforth, B. E. & Saks, A. M. (2000). Personal control in organizations: A longitudinal investigation with newcomers. *Human Relations*, *53*, 311-339.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2000). Self-efficacy: The foundation of agency. In W. J. Perrig & A. Grob (Eds.), *Control of human behaviour, mental processes and consciousness* (pp. 17-33). Mahwah, NJ: Erlbaum.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior*, *14*, 103-118.

- Becker, T. E., & Klimoski, R. J. (1989). A field study of the relationship between the organizational feedback environment and performance. *Personnel Psychology, 42*, 343-358.
- Bhal, K. T. (2006). LMX-citizenship behavior relationship: Justice as a mediator. *Leadership & Organization Development Journal, 27*, 106-117.
- Blader, S. L., & Taylor, T. R. (2005). How can theories of organizational justice explain the effects of fairness? In J. Greenberg & J. A. Colquitt (Eds.). *Handbook of organizational justice* (pp. 329-354). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Boerner, S., Eisenbeiss, S. A., & Griesser, D. (2007). Follower behavior and organizational performance: The impact of transformational leaders. *Journal of Leadership & Organizational Studies, 13*, 15-26.
- Breitkopf, L. (1985). Die Hilflosigkeitsskala. (The helplessness scale). *Diagnostica, 31*, 221-233.
- Burke, M. J., & Dunlap, W. P. (2002). Estimating interrater agreement with the average deviation index: A user's guide. *Organizational Research Methods, 5*, 159-172.
- Burke, M. J., Finkelstein, L. M., & Dusig, M. S. (1999). On average deviation indices for estimating interrater agreement. *Organizational Research Methods, 2*, 49-68.
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality-social, clinical, and health psychology. *Psychological Bulletin, 92*, 111-135.
- Chen, G., Kirkman, B. L., Kanfer, R., Allen, D., & Rosen, B. (2007). A multilevel study of leadership, empowerment, and performance in teams. *Journal of Applied Psychology, 92*, 331-346.
- Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86*, 278-321.
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology, 86*, 386-400.
- Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology, 86*, 425-445.
- Colquitt, J. A., Greenberg, J., & Scott, B. (2005). Organizational justice: Where do we stand? In J. Greenberg & J. A. Colquitt (Eds.). *Handbook of organizational justice* (pp. 589-619). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management, 26*, 435-462.

- Cropanzano, R., & Ambrose, M. L. (2001). Procedural and distributive justice are more similar than you think: A monistic perspective and a research agenda. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organizational justice* (pp. 119-151). Lexington, MA: New Lexington Press.
- Cropanzano, R., Byrne, Z. S., Bobocel, D. R., & Rupp, D. E. (2001). Moral virtues, fairness heuristics, social entities, and other denizens of organizational justice. *Journal of Vocational Behavior, 58*, 164-209.
- Daniels, J. A., & Larson, L. M. (2001). The impact of performance feedback on counseling self-efficacy and counselor anxiety. *Counselor Education & Supervision, 41*, 120-130.
- Daniels, K., & Guppy, A. (1994). Occupational stress, social support, job control, and psychological well-being. *Human Relations, 47*, 1523-1544.
- Danna, K., & Griffin, R. W. (1999). Health and well-being in the workplace: A review and synthesis of the literature. *Journal of Management, 25*, 357-384.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.
- De Witte, H. (1999). Job insecurity and psychological well-being: Review of the literature and exploration of some unresolved issues. *European Journal of Work and Organizational Psychology, 8*, 155-177.
- DeNisi, A. S., & Kluger, A. N. (2000). Feedback effectiveness: Can 360-degree appraisals be improved? *Academy of Management Executive, 14*, 129-139.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276-302.
- Elicker, J. D., Levy, P. E., & Hall, R. J. (2006). The role of leader-member exchange in the performance appraisal process. *Journal of Management, 32*, 531-551.
- Engle, E. M., & Lord, R. G. (1997). Implicit theory, self-schemata, and leader-member exchange. *Academy of Management Journal, 4*, 988-1010.
- Fay, D., & Frese, M. (2001). The concept of personal initiative: An overview of validity studies. *Human Performance, 14*, 97-124.
- Fedor, D. B. (1991). Recipient responses to performance feedback: A proposed model and its implications. *Research in Personnel and Human Resources Management, 9*, 73-120.
- Ferris, G. R. (1985). Role of leadership in the employee withdrawal process: A constructive replication. *Journal of Applied Psychology, 70*, 777-781.
- Folger, R. (1984). Preface. In R. Folger (Ed.), *The sense of injustice: Social psychological perspectives* (pp. ix-x). New York: Plenum.

- Folger, R. (1998). Fairness as a moral virtue. In M. Schminke (Ed.), *Managerial ethics: moral management of people and processes* (pp. 13-34). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Frese, M. (2001). Personal initiative (PI): The theoretical concept and empirical findings. In M. Erez, U. Kleinbeck, & H. Thierry (Eds.), *Work Motivation in the Context of a Globalizing Economy* (pp. 99-110). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Frese, M., & Fay, D. (2001). Personal initiative (PI): An active performance concept for work in the 21st century. In B.M. Staw & R.M. Sutton (Eds.), *Research in Organizational Behavior* (Vol. 23, pp. 133-187). Amsterdam: Elsevier Science.
- Frese, M., & Zapf, D. (1994). Action as the core of work psychology: A German approach. In H. C. Triandis, M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (Second Ed., Vol. 4, pp. 271-340). Palo Alto, CA: Consulting Psychologists Press.
- Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Organizational and Occupational Psychology*, 70, 139-161.
- Frese, M., Garst, H., & Fay, D. (2007). Making things happen: Reciprocal relationships between work characteristics and personal initiative in a four-wave longitudinal structural equation model. *Journal of Applied Psychology*, 92, 1084-1102.
- George, J. M., & Jones, G. R. (1996). The experience of work and turnover intentions: Interactive effects of value attainment, job satisfaction, and positive mood. *Journal of Applied Psychology*, 81, 318-325.
- George, J. M., & Zhou, J. (2007). Dual tuning in a supportive context: Joint contributions of positive mood negative mood, and supervisory behaviors to employee creativity. *Academy of Management Journal*, 50, 605-622.
- Gerstner, C. R., & Day, D. V. (1997). Meta-analytic review of leader-member exchange theory: Correlates and construct issues. *Journal of Applied Psychology*, 82, 827-844.
- Gillespie, J. Z., & Greenberg, J. (2005). Are the goals of organizational justice self-interested? In J. Greenberg, & J. A. Colquitt (Eds.), *Handbook of Organizational Justice* (pp. 179-213). Mahwah, NJ: Lawrence Erlbaum Associates.
- Gilliland, S. W. (1994). Effects of procedural and distributive justice on reactions to a selection system. *Journal of Applied Psychology*, 79, 691-701.
- Gouldner, A. W. (1960). The norm of reciprocity. *American Sociological Review*, 25, 165-167.
- Graen, G. B., & Scandura, T. A. (1987). Toward a psychology of dyadic organization. *Research in Organizational Behavior*, 9, 175-208.

- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6, 219-247.
- Graen, G. B., Liden, R. C., & Hoel, W. (1982). Role of leadership in the employee withdrawal process. *Journal of Applied Psychology*, 67, 868-872.
- Graen, G. B., Novak, M. A., & Sommerkamp, P. (1982). The effects of leader-member exchange and job design on productivity and satisfaction: Testing a dual attachment model. *Organizational Behavior and Human Performance*, 30, 109-131.
- Grant, A. M., & Ashford, S. J. (in press). The dynamics of proactivity at work. *Research in Organizational Behavior*.
- Greenberg, J. (2006). Losing sleep over organizational injustice: Attenuating insomniac reactions to underpayment inequity with supervisor training in interactional justice. *Journal of Applied Psychology*, 91, 58-69.
- Greenberg, J., & Colquitt, J. A. (2005). *Handbook of organizational justice*. Mahwah, NJ: Lawrence Erlbaum.
- Greenberger, D. B., & Strasser, S. (1986). Development and application of a model of personal control in organizations. *Academy of Management Review*, 11, 164-177.
- Greller, M. M., & Herold, D. M. (1975). Sources of feedback: A preliminary investigation. *Organizational Behavior and Human Performance*, 13, 244-256.
- Griffeth, R. W., Hom, P.W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management*, 26, 463-488.
- Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, 50, 327-347.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16, 250-279.
- Harris, M. M., & Schaubroeck, J. (1988). A meta-analysis of self-supervisor, self-peer, and peer-supervisor ratings. *Personnel Psychology*, 41, 43-62.
- Herold, D. M., & Parsons, C. K. (1985). Assessing the feedback environment in work organizations: Development of the job feedback survey. *Journal of Applied Psychology*, 70, 290-305.
- Hochwalder, J., & Brucefors, A. B. (2005). Psychological empowerment at the workplace as a predictor of ill health. *Personality and Individual Differences*, 39, 1237-1248.
- Ilggen, D. R., Fisher, C. D., & Taylor, M. S. (1979). Consequences of individual feedback on behavior in organizations. *Journal of Applied Psychology*, 64, 349-371.

- Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behavior. *Journal of Occupational and Organizational Psychology*, 73, 287-302.
- Janssen, O. (2005). The joint impact of perceived influence and supervisor supportiveness on employee innovative behavior. *Journal of Occupational and Organizational Psychology*, 78, 573-579.
- Kelley, H. H., & Thibaut, J. (1978). *The social psychology of groups*. New York: Wiley.
- Kinicki, A. J., Prussia, G. E., Wu, B. J., & McKee-Ryan, F. M. (2004). A covariance structure analysis of employees' response to performance feedback. *Journal of Applied Psychology*, 89, 1057-1069.
- Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, 119, 254-284.
- Koberg, C. S., Boss, R. W., Senjem, J. C., & Goodman, E. A. (1999). Antecedents and outcomes of empowerment. *Group & Organization Management*, 24, 71-91.
- Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der „Positive and Negative Affect Schedule“ (PANAS). [Examinations with a German version of the „Positive and Negative Affect Schedule“ (PANAS)]. *Diagnostica*, 42, 139-156.
- Kunin, T. (1955). The construction of a new type of attitude measure. *Personnel Psychology*, 8, 65-78.
- Lagace, R. R., Castleberry, S. B., & Ridnour, R. E. (1993). An exploratory salesforce study of the relationship between leader-member exchange and motivation, role stress, and manager evaluation. *Journal of Applied Business Research*, 9, 110-119.
- Larson, J. R. (1984). The performance feedback process: A preliminary model. *Organizational Behavior and Human Performance*, 33, 42-76.
- Larson, J. R. (1986). Supervisors' performance feedback to subordinates: The impact of subordinate performance valence and outcome dependence. *Organizational Behavior and Human Decision Processes*, 37, 391-408.
- Larson, J. R. (1989). The dynamic interplay between employees' feedback seeking strategies and supervisors' delivery of performance feedback. *Academy of Management Review*, 14, 408-422.
- Laschinger, H. K. S., Finegan, J. E., Shamian, J., & Wilk, P. (2004). A longitudinal analysis of the impact of workplace empowerment on work satisfaction. *Journal of Organizational Behavior*, 25, 527-545.
- Leung, K., Su, S., & Morris, M. W. (2001). When is criticism *not* constructive? The roles of fairness perceptions and dispositional attributions in employee acceptance of critical supervisory feedback. *Human Relations*, 54, 1155-1187.

- Levy, P. E., & Williams, J. R. (2004). The social context of performance appraisal: A review and framework for the future. *Journal of Management*, *30*, 881-905.
- Liden, R. C., Sparrowe, R. T., & Wayne, S. J. (1997). Leader-member exchange theory: The past and potential for the future. *Research in Personnel and Human Resources Management*, *15*, 47-119.
- Liden, R. C., Wayne, S. J., & Stilwell, D. (1993). A longitudinal study on the early development of leader-member exchanges. *Journal of Applied Psychology*, *78*, 662-674.
- Lindsley, D. H., Brass, D. J., & Thomas, J. B. (1995). Efficacy-performance spirals: A multilevel perspective. *Academy of Management Review*, *20*, 645-678.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice Hall.
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal-setting and task motivation. A 35 year odyssey. *American Psychologist*, *57*, 705-717.
- London, M. (1997). *Job feedback: Giving, seeking, and using feedback for performance improvement*. Mahwah, NJ: Erlbaum.
- Lord, R. J., & Brown, D. J. (2001). Leadership, values, and subordinate self-concepts. *Leadership Quarterly*, *12*, 133-152.
- Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management Journal*, *43*, 738-748.
- McDowall, A., & Fletcher, C. (2004). Employee development: An organizational justice perspective. *Personnel Review*, *33*, 8-29.
- Menon, S. T. (2001). Employee empowerment: An integrative psychological approach. *Applied Psychology: An International Review*, *50*, 153-180.
- Moss, S. E., & Sanchez, J. I. (2004). Are your employees avoiding you? Managerial strategies for closing the feedback gap. *Academy of Management Executive*, *18*, 32-44.
- Moss, S. E., Valenzi, E. R., & Taggart, W. (2003). Are you hiding from your boss? The development of a taxonomy and instrument to assess the feedback management behaviors of good and bad performers. *Journal of Management*, *29*, 487-510.
- Motowidlo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance*, *10*, 71-83.
- Mumford, M. D., Scott, G. M., Gaddis, B., & Strange, J. M. (2002). Leading creative people: Orchestrating expertise and relationships. *Leadership Quarterly*, *13*, 705-750.
- Myers, D. G., & Diener, E. (1995). Who is happy? *Psychological Science*, *6*, 10-19.

- Norris-Watts, C., & Levy, P. E. (2004). The mediating role of affective commitment in the relation of the feedback environment to work outcomes. *Journal of Vocational Behavior, 65*, 351-365.
- Offermann, L. R., & Hellmann, P. S. (1996). Leadership behavior and subordinate stress: A 360° view. *Journal of Occupational Health Psychology, 1*, 382-390.
- Oldham, G. R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal, 39*, 607-634.
- Parker, L. E., & Price, R. H. (1994). Empowered managers and empowered workers: The effects of managerial support and managerial perceived control on workers' sense of control over decision making. *Human Relations, 47*, 911-928.
- Parker, S. K., & Collins, C. G. (in press). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management*.
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology, 91*, 636-652.
- Peterson, C. (1999). Personal control and well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 288-301). New York: Russell Sage Foundation.
- Peterson, C., Maier, S. F., Seligman, M. E. P. (1993). *Learned helplessness. A theory for the age of personal control*. New York: Oxford University Press.
- Podsakoff, P. M., Bommer, W. H., Podsakoff, N. P., & MacKenzie, S. B. (2006). Relationships between leader reward and punishment behavior and subordinate attitudes, perceptions, and behaviors: A meta-analytic review of existing and new research. *Organizational Behavior and Human Decision Processes, 99*, 113-142.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P., (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879-903.
- Ramamoorthy, N., Flood, P. C., Slattery, T., & Sardesai, R. (2005). Determinants of innovative work behavior: Development and test of an integrated model. *Creativity and Innovation Management, 14*, 142-150.
- Rank, J., Pace, V. L., & Frese, M. (2004). Three avenues for future research on creativity, innovation, and initiative. *Applied Psychology: An International Review, 53*, 518-528.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage Publications.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y., & Congdon, R. T. (2004). *HLM 6: Hierarchical linear and nonlinear modelling*. Chicago: Scientific Software International.
- Reis, M. J. (2002). The effects of supervisor feedback behavior on employee organizational citizenship behaviors: The role of perceived supervisor fairness in the social



- exchange process. (Doctoral dissertation, Claremont Graduate University, 2002).  
*Dissertation Abstracts International*, 63, 2635.
- Renn, R. W., & Fedor, D. B. (2001). Development and field test of a feedback seeking, self-efficacy, and goal setting model of work performance. *Journal of Management*, 27, 563-583.
- Renn, R. W., & Prien, K. O. (1995). Employee responses to performance feedback from the task: A field study of the moderating effects of global self-esteem. *Group and Organization Management*, 20, 337-354.
- Roberson, Q. M., & Stewart, M. M. (2006). Understanding the motivational effects of procedural and informational justice in feedback processes. *British Journal of Psychology*, 97, 281-298.
- Roch, S. G., & Shanock, L. R. (2006). Organizational justice in an exchange framework: Clarifying organizational justice distinctions. *Journal of Management*, 32, 299 – 332.
- Rosen, C. C., Levy, P. E., & Hall, R. J. (2006). Placing perceptions of politics in the context of the feedback environment, employee attitudes, and job performance. *Journal of Applied Psychology*, 91, 211-220.
- Rupp, D. E., & Cropanzano, R. (2002). The mediating effects of social exchange relationships in predicting workplace outcomes from multifoci organizational justice. *Organizational Behavior and Human Decision Processes*, 89, 925-946.
- Russell, J. E. A. (2008). Promoting subjective well-being at work. *Journal of Career Assessment*, 16, 117-131.
- Rutkowski, K. A., & Steelman, L. A. (2004). Testing a path model for antecedents of accountability. *Journal of Management Development*, 24, 473-486.
- Scandura, T. (1999). Rethinking leader-member exchange: An organizational justice perspective. *Leadership Quarterly*, 10, 25-41.
- Scandura, T., Graen, G. B., & Novak, M. A. (1986). When managers decide not to decide autocratically: An investigation of leader-member exchange and decision influence. *Journal of Applied Psychology*, 71, 579-584.
- Schmidt, F. L., & Hunter, J. E. (2001). Meta-analysis. In N. Anderson, D. S. Ones, H. K. Sinangil & C. Viswesvaran (Eds.), *Handbook of industrial, work and organizational psychology* (Vol.1: Personnel Psychology, pp. 51-70). London: Sage.
- Schmitt, M., Gollwitzer, M., Maes, J., & Arbach, D. (2005). Justice sensitivity: Assessment and location in the personality space. *European Journal of Psychological Assessment*, 21, 202-211.
- Schyns, B., & Paul, T. (2006). Skala zur Erfassung des Leader-Member Exchange (LMX 7 nach Graen & Uhl-Bien, 1995) Übersetzung. In A. Glöckner-Rist (Hrsg.), *ZUMA-Informationssystem. Elektronisches Handbuch sozialwissenschaftlicher*

- Erhebungsinstrumente*. ZIS Version 10.00. Mannheim: Zentrum für Umfragen, Methoden und Analysen.
- Schyns, B., Paul, T., Mohr, G., & Blank, H. (2005). Comparing antecedents and consequences of leader – member exchange in a German working context to findings in the US. *European Journal of Work and Organizational Psychology, 14*, 1-22.
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal, 37*, 580-607.
- Seibert, S. E., Kraimer, M. L., & Crant, J. N. (2001). What do proactive people do? A longitudinal model linking proactive personality and career success. *Personnel Psychology, 54*, 845-874.
- Seligman, M. E. P. (1975). *Helplessness. On depression, development, and death*. San Francisco, CA: W. H. Freeman and Company.
- Skarlicki, D. P., & Latham, G. P. (2005). How can training be used to foster organizational justice? In J. Greenberg, & J. A. Colquitt (Eds.), *Handbook of Organizational Justice* (pp. 499-522). Mahwah, NJ: Lawrence Erlbaum Associates.
- Skinner, E. A. (1996). A guide to constructs of control. *Journal of Personality and Social Psychology, 71*, 549-570.
- Smircich, L., & Morgan, G. (1982). Leadership: The management of meaning. *Journal of Applied Behavioral Science, 18*, 257-273.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In S. Leinhardt (Ed.), *Sociological Methodology* (pp. 290-312). Washington DC: American Sociological Association.
- Sparr, J. L. & Sonnentag, S. (2008). Fairness perceptions of supervisor feedback, LMX and employee well-being at work. *European Journal of Work and Organizational Psychology, 17*, 198-225.
- Spector, P. E. (2002). Employee control and occupational stress. *Current Directions in Psychological Science, 11*, 133-136.
- Spector, P. E., Zapf, D., Chen, P. Y., & Frese, M. (2000). Why negative affectivity should not be controlled in job stress research: Don't throw out the baby with the bath water. *Journal of Organizational Behavior, 21*, 79-95.
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal, 38*, 1442-1465.
- Spreitzer, G. M. (1996). Social structural characteristics of psychological empowerment. *Academy of Management Journal, 39*, 483-504.

- Steelman, L. A., Levy, P. E., & Snell, A. F. (2004). The feedback environment scale: Construct definition, measurement, and validation. *Educational and Psychological Measurement, 64*, 165-184.
- Stinglhamber, F., De Cremer, D., & Mercken, L. (2006). Perceived support as a mediator of the relationship between justice and trust: A multiple foci approach. *Group and Organization Management, 31*, 442-468.
- Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: An "interpretative" model of intrinsic task motivation. *Academy of Management Review, 15*, 666-681.
- Tolman, C. W. (2006). Being human and the need for justice. In A. Taylor (Ed.), *Justice as a basic human need* (pp. 13-23). New York: Nova Science Publishers.
- Van den Berg, P. T. & Feij, J. A. (2003). Complex relationships among personality traits, job characteristics, and work behaviors. *International Journal of Selection and Assessment, 11*, 326-341.
- Van den Bos, K., Bruins, J., Wilke, H. A. M., & Dronkert, E. (1999). Sometimes unfair procedures have nice aspects: On the psychology of the fair process effect. *Journal of Personality and Social Psychology, 77*, 324-336.
- Van Dierendonck, D., Haynes, C., Borril, C., & Stride, C. (2004). Leadership behavior and subordinate well-being. *Journal of Occupational Health Psychology, 9*, 165-175.
- Van Knippenberg, D., de Cremer, D., & van Knippenberg, B. (2007). Leadership and fairness: The state of the art. *European Journal of Work and Organizational Psychology, 16*, 113-140.
- Van Knippenberg, D., van Knippenberg, B., De Cremer, D., & Hogg, M. A. (2004). Leadership, self, and identity: A review and research agenda. *Leadership Quarterly, 15*, 825-856.
- Walsh, J. P., Ashford, S. J., & Hill, T. E. (1985). Feedback obstruction: The influence of the information environment on employee turnover intentions. *Human Relations, 38*, 23-46.
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82*, 247-252.
- Warr, P. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational Psychology, 63*, 193-210.
- Warr, P. (1999). Well-being at the workplace. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-Being: The Foundations of Hedonic Psychology* (pp. 392-412). New York: Russell Sage Foundation.
- Warr, P. (2007). *Work, happiness, and unhappiness*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS-scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070.
- West, M. A., & Farr, J. L. (1990). *Innovation and creativity at work: Psychological and organizational strategies*. Chichester: John Wiley.
- Williams, K. D. (1997). Social ostracism. In R. M. Kowalski (Ed.), *Aversive interpersonal behaviors* (pp. 133-170). New York: Plenum Press.
- Woehr, D. J., Sheehan, M. K., & Bennett, W. (2005). Assessing measurement equivalence across rating sources: A multitrait-multirater approach. *Journal of Applied Psychology*, *90*, 592-600.
- Wright, T. A., Cropanzano, R., & Bonett, D. G. (2007). The moderating role of employee positive well being on the relation between job satisfaction and job performance. *Journal of Occupational Health Psychology*, *2*, 93-104.
- Yukl, G. (2002). *Leadership in organizations*. Upper Saddle River, NJ: Prentice-Hall.

## 7. Appendix

### 7.1 Additional Analyses Study 1

Table 2.1

Regression Results for Hypotheses 1 a to c

	Personal control over informa- tion		Personal control over deci- sions		Helplessness	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
<b>Step 1</b>						
Industry 1	.13	2.60**	.15	2.75**	-.05	-1.02
Industry 2	.28	5.61***	.19	3.49**	-.03	-0.58
Negative affect positive feedback	-.05	-1.01	-.04	-0.71	.15	3.02**
Negative affect negative feedback	-.10	-1.93	-.11	-1.91	.24	4.75***
Frequency negative feedback from supervisor	-.16	-3.18**	-.17	-2.13*	.26	5.33***
Frequency positive feedback from supervisor	.21	4.14***	.07	1.37	-.20	-4.03***
	$R^2 = .19$		$R^2 = .09$		$R^2 = .24$	
<b>Step 2</b>						
Industry 1	.09	1.76	.13	2.43*	-.02	-0.37
Industry 2	.25	5.01***	.17	3.20**	.00	-0.01
Negative affect positive feedback	-.02	-0.48	-.03	-0.52	.13	2.66**
Negative affect negative feedback	-.09	-1.71	-.10	-1.81	.23	4.63***
Frequency negative feedback from supervisor	-.04	-0.79	-.07	-1.22	.18	3.37**
Frequency positive feedback from supervisor	.06	1.01	.02	0.29	-.09	-1.60
Feedback environment	.34	5.65***	.12	1.87 <sup>+</sup>	-.24	-4.08***
	$R^2 = .26$ $\Delta R^2 = .07***$		$R^2 = .10$ $\Delta R^2 = .01^+$		$R^2 = .28$ $\Delta R^2 = .04***$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. <sup>+</sup>  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 3.1

*Regression Results for Hypotheses 2 a to c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 1								
Industry 1	.00	0.08	.00	0.03	.00	0.03	.07	1.38
Industry 2	-.08	-1.63	.08	1.71	.19	3.86***	.06	1.18
Negative affect positive feedback	.09	2.01*	-.06	-1.21	-.20	-4.04***	.14	2.64**
Negative affect negative feedback	.40	8.29***	.44	8.80***	-.14	-2.71**	.16	2.94**
Frequency negative feedback from supervisor	.21	4.41***	.14	2.93**	-.27	-5.41***	.21	3.87***
Frequency positive feedback from supervisor	-.13	-2.68**	-.08	-1.71	.22	4.46***	-.07	-1.30
	$R^2 = .30$		$R^2 = .26$		$R^2 = .25$		$R^2 = .12$	
Step 2								
Industry 1	.03	0.61	.01	0.24	-.04	-0.89	.08	1.58
Industry 2	-.02	-0.48	.11	2.08*	.10	1.99*	.09	1.57
Negative affect positive feedback	.08	1.84	-.06	-1.29	-.18	-3.92***	.13	2.56*
Negative affect negative feedback	.38	8.01***	.43	8.61***	-.10	-2.16*	.15	2.77**
Frequency negative feedback from supervisor	.18	3.79***	.13	2.64**	-2.13	-4.53***	.19	3.56***
Frequency positive feedback from supervisor	-.09	-1.84	-.07	-1.35	.15	3.17**	-.05	-0.93
Personal control over information	-.19	-3.77***	-.08	-1.48	.33	6.60***	-.09	-1.52
	$R^2 = .33$		$R^2 = .27$		$R^2 = .34$		$R^2 = .13$	
	$\Delta R^2 = .03***$		$\Delta R^2 = .01$		$\Delta R^2 = .09***$		$\Delta R^2 = .01$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 3.1 (continued)

*Regression Results for Hypotheses 2 a to c*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 2								
Industry 1	.02	0.47	.00	0.01	-.04	-0.94	.08	1.46
Industry 2	-.06	-1.19	.08	1.69	.14	2.90**	.07	1.38
Negative affect positive feedback	.09	1.93	-.06	-1.20	-.19	-4.00***	.14	2.60*
Negative affect negative feedback	.39	8.01***	.44	8.71***	-.11	-2.16*	.15	2.81**
Frequency negative feedback from supervisor	.20	4.16***	.14	2.90**	-.24	-4.97***	.20	3.70***
Frequency positive feedback from supervisor	-.12	-2.55*	-.08	-1.69	.20	4.28***	-.06	-1.19
Personal control over decisions	-.10	-2.19*	-.00	-0.05	.27	5.71***	-.06	-1.18
	$R^2 = .31$		$R^2 = .26$		$R^2 = .32$		$R^2 = .13$	
	$\Delta R^2 = .01^*$		$\Delta R^2 = .00$		$\Delta R^2 = .07^{***}$		$\Delta R^2 = .00$	
Step 2								
Industry 1	.03	0.59	.02	0.44	-.02	-0.37	.09	1.79
Industry 2	-.06	-1.53	.09	2.10*	.18	3.94***	.07	1.45
Negative affect positive feedback	.03	0.66	-.11	-2.54**	-.14	-3.07**	.09	1.72
Negative affect negative feedback	.29	6.63***	.35	7.29***	-.04	-0.90	.08	1.40
Frequency negative feedback from supervisor	.10	2.08*	.04	0.90	-.17	-3.49**	.11	2.15*
Frequency positive feedback from supervisor	-.04	-0.88	-.01	-0.16	.14	3.08**	.00	0.03
Helplessness	.45	9.74***	.39	7.75***	-.39	-7.70***	.36	6.40***
	$R^2 = .46$		$R^2 = .37$		$R^2 = .36$		$R^2 = .22$	
	$\Delta R^2 = .15^{***}$		$\Delta R^2 = .11^{***}$		$\Delta R^2 = .11^{***}$		$\Delta R^2 = .10^{***}$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 4.1

Regression Results for Hypotheses 3, 4, 5 and 6, including Mediation Tests

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 2								
Industry 1	.02	0.39	-.01	-0.15	-.02	-0.41	.09	1.77
Industry 2	-.05	-1.11	.09	1.86	.16	3.31**	.10	1.87
Negative affect positive feedback	.08	1.71	-.06	-1.25	-.18	-3.74***	.12	2.32*
Negative affect negative feedback	.39	8.24***	.44	8.76***	-.12	-2.53*	.15	2.78**
Frequency negative feedback from supervisor	.14	2.69**	.12	2.34*	-.18	-3.40**	.11	1.88
Frequency positive feedback from supervisor	-.04	-0.66	-.06	-1.11	.11	1.94	.06	0.98
Feedback environment	-.21	-3.67***	-.06	-0.97	.25	4.34***	-.29	-4.57***
	$R^2 = .33$		$R^2 = .27$		$R^2 = .29$		$R^2 = .18$	
	$\Delta R^2 = .03^{***}$		$\Delta R^2 = .00$		$\Delta R^2 = .04^{***}$		$\Delta R^2 = .05^{***}$	
Step 3								
Industry 1	.03	0.67	-.00	-0.03	-.04	-0.96	.09	1.77
Industry 2	-.02	-0.34	.11	2.11*	.09	1.86	.10	1.85
Negative affect positive feedback	.08	1.66	-.06	-1.28	-.17	-3.75***	.12	2.31*
Negative affect negative feedback	.38	8.03***	.43	8.62***	-.10	-2.11*	.15	2.74**
Frequency negative feedback from supervisor	.13	2.59*	.12	2.29*	-.17	-3.30**	.11	1.86
Frequency positive feedback from supervisor	-.03	-0.51	-.06	-1.04	.09	1.72	.06	0.99
Feedback environment	-.16	-2.72**	-.04	-0.57	.16	2.69**	-.28	-0.31***
Personal control over information	-.14	-2.81**	-.07	-1.22	.29	5.56***	-.01	-0.19
	$R^2 = .35$		$R^2 = .27$		$R^2 = .35$		$R^2 = .18$	
	$\Delta R^2 = .02^{**}$		$\Delta R^2 = .00$		$\Delta R^2 = .06^{***}$		$\Delta R^2 = .00$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



Table 4.1 (continued)

*Regression Results for Hypotheses 3, 4, 5 and 6, including Mediation Tests*

	Job Depression		Job Anxiety		Job Satisfaction		Turnover Intentions	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
Step 3								
Industry 1	.03	0.69	-.01	-0.21	-.06	-1.25	.09	1.73 <sup>+</sup>
Industry 2	-.04	-0.79	.09	1.80 <sup>+</sup>	.12	2.46*	.10	1.95 <sup>+</sup>
Negative affect positive feedback	.08	1.66	-.06	-1.24	-.17	-3.72***	.12	2.30*
Negative affect negative feedback	.38	8.00***	.44	8.71***	-.10	-2.04*	.15	2.71**
Frequency negative feedback from supervisor	.13	2.57*	.13	2.34*	-.16	-3.17**	.10	1.82 <sup>+</sup>
Frequency positive feedback from supervisor	-.03	-0.65	-.06	-1.09	.10	1.97*	.06	1.01
Feedback environment	-.20	-3.47**	-.06	-0.98	.22	3.93***	-.28	-4.48***
Personal control over decisions	-.08	-1.79 <sup>+</sup>	.01	0.15	.25	5.34***	-.04	-0.66
	$R^2 = .34$		$R^2 = .27$		$R^2 = .35$		$R^2 = .18$	
	$\Delta R^2 = .01^+$		$\Delta R^2 = .00$		$\Delta R^2 = .06***$		$\Delta R^2 = .00$	
Step 3								
Industry 1	.03	0.63	.00	-0.01	-.03	-0.58	.10	1.96 <sup>+</sup>
Industry 2	-.05	-1.24	.09	2.01*	.16	3.53***	.10	1.95 <sup>+</sup>
Negative affect positive feedback	.02	0.58	-.11	-2.44*	-.13	-2.95**	.08	1.59
Negative affect negative feedback	.30	6.68***	.35	7.32***	-.04	-0.92	.08	1.44
Frequency negative feedback from supervisor	.06	1.31	.06	1.11	-.12	-2.31*	.05	0.92
Frequency positive feedback from supervisor	.00	0.07	-.03	-0.53	.08	1.46	.09	1.50
Feedback environment	-.11	-2.02*	.04	0.64	.17	3.02**	-.21	-3.45**
Helplessness	.43	9.09***	.39	7.67***	-.35	-6.92***	.31	5.57***
	$R^2 = .47$		$R^2 = .38$		$R^2 = .38$		$R^2 = .25$	
	$\Delta R^2 = .13***$		$\Delta R^2 = .11***$		$\Delta R^2 = .09***$		$\Delta R^2 = .07***$	

Note. Industry 1 was coded 1 = hospitals, 0 = other. Industry 2 was coded 1 = R&D, 0 = others. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .