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The Crossover of Job-Related Self-Evaluations

within Working Couples

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ZUSAMMENFASSUNG

Selbstwert und Selbstwirksamkeit sind wichtige Erfahrungen im Arbeitsleben berufstätiger Menschen. So sagen beide Konstrukte sowohl positives Arbeitsverhalten von Arbeitnehmerinnen und Arbeitnehmern als auch ihr wahrgenommenes Wohlbefinden vorher. Diese Dissertation erweitert die Forschung zu den Quellen dieser berufsbezogenen Selbst-Evaluationen, indem sie Prädiktoren des Selbstwerts und der Selbstwirksamkeit aus der Nicht-Arbeits-Domäne untersucht. Die vorliegende Dissertation fokussiert hierbei auf das Crossover von Selbstwert und Selbstwirksamkeit bei Paaren, bei denen beide Partner berufstätig sind. Crossover beschreibt die interindividuelle Übertragung psychischer Zustände zwischen zwei sich nahe stehenden Personen. Obwohl Crossover-Prozesse bereits für eine Reihe psychischer Zustände gezeigt werden konnten, hat sich die Crossover-Forschung bislang meist auf die Übertragung negativer psychischer Zustände beschränkt. Diese Dissertation setzt an dieser Forschungslücke an und untersucht das Crossover von Selbstwert und Selbstwirksamkeit als positive berufsbezogene Selbst-Evaluationen. Außerdem wird das Augenmerk sowohl auf arbeitsbezogene Aspekte gerichtet, die diesen Crossover-Prozessen vorausgehen, als auch auf solche, die aus diesen Crossover-Prozessen resultieren. Die ersten beiden Studien beschäftigten sich dabei mit der kurz- beziehungsweise langfristigen Übertragung von Selbstwert sowie mit Moderatoren, die die Übertragung von Selbstwert zwischen zwei Partnern[1] begünstigen. Im Fokus der dritten Studie stehen dagegen das Crossover von Selbstwirksamkeit und die diesem Crossover-Prozess zugrunde liegenden Mechanismen.

In der ersten Studie wurden das tägliche Crossover von Selbstwert bei berufstätigen Paaren sowie mögliche arbeitsbezogene Antezedenzien und Konsequenzen dieses Crossover-

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[1] Zugunsten der besseren Lesbarkeit verwende ich beim Begriff „Partner" im Folgenden sowohl im Plural als auch im Singular nur die männliche Form. Hierbei sind aber selbstverständlich stets Männer und Frauen gemeint.

Prozesses untersucht. 102 Doppelverdiener-Paare nahmen hierfür an einer Tagebuchstudie über fünf aufeinander folgende Arbeitstage teil. Die Ergebnisse von Mehrebenen-Analysen mit dem Actor-Partner Interdependence Modell bestätigten, dass die tagesspezifische Arbeitsleistung einer Person positiv mit deren tagespezifischer Selbstwert-Wahrnehmung zusammenhängt. Zudem zeigte sich wie erwartet eine Übertragung des tagesspezifischen Selbstwerts des einen Partners (des „Actors") nach der Arbeit auf den tagesspezifischen Selbstwert des anderen Partners (des „Partners") am Abend. Dieser Crossover-Prozess zeigte sich insbesondere dann, wenn der Partner ein allgemein geringes Selbstwert-Niveau sowie eine allgemein hohe Empathie aufzeigte. Schließlich konnte bestätigt werden, dass der tagesspezifische Selbstwert des Partners am Abend positiv dessen antizipiertes Arbeitsengagement am nächsten Morgen vorhersagte.

Auch die zweite Studie untersuchte das Crossover von Selbstwert bei berufstätigen Paaren. Im Fokus dieser Studie stand jedoch der längerfristige Prozess des Selbstwert-Crossovers. Außerdem sollte auch hier untersucht werden, welche arbeitsbezogenen Erfahrungen diesem Crossover-Prozess vorausgehen und welche daraus resultieren. Mit einer Längsschnittstudie (Zeitabstand zwischen den Messungen: sechs Monate), an der 294 berufstätige Paare teilnahmen, wurden die Hypothesen wieder mit Hilfe von Mehrebenen-Analysen und dem Actor-Partner Interdependence Modell getestet. Wie angenommen zeigte sich, dass das Arbeitsengagement einer Person sowohl Antezedenz als auch Konsequenz von deren Selbstwert sein kann. Im Gegensatz zu der ursprünglichen Hypothese zeigte sich jedoch über die sechs Monate der Studie hinweg kein direktes Selbstwert-Crossover. Allerdings konnte der allgemeine Selbstwert des Partners als Moderator im Crossover-Prozess bestätigt werden. Dies weist darauf hin, dass insbesondere Menschen mit geringem allgemeinem Selbstwert empfänglich für die Übertragung von Selbstwert sind.

Die dritte Studie beschäftigte sich mit dem Crossover von Selbstwirksamkeit bei berufstätigen Paaren. Zudem sollten Mechanismen untersucht werden, die der Übertragung von Selbstwirksamkeit möglicherweise zugrunde liegen. Es wurde eine Online-Befragung mit 102 Doppelverdiener-Paaren durchgeführt. Ergebnisse von Mehrebenen-Analysen mit dem Actor-Partner Interdependence Modell bestätigten das Crossover von Selbstwirksamkeit zwischen beiden Partnern. Zudem bestätigten die Ergebnisse die Annahme, dass dieser Übertragung stellvertretende Erfahrung und verbale Unterstützung als vermittelnde Prozesse zugrunde liegen. Schließlich war das Crossover von Selbstwirksamkeit in einem weiteren Schritt mit dem veränderten Arbeitsengagement des Partners assoziiert.

Zusammenfassend erweitert diese Dissertation Forschung zu positiven Crossover-Prozessen ebenso wie Forschung zu Quellen berufsbezogener Selbst-Evaluationen. Dabei konnte sowohl eine Übertragung von Selbstwert als auch eine Übertragung von Selbstwirksamkeit gezeigt und damit die Hauptannahme der Dissertation bestätigt werden. Über alle drei Studien hinweg war das Crossover berufsbezogener Selbst-Evaluationen mit einem veränderten Arbeitsengagement des Partners assoziiert, was die Relevanz der Ergebnisse für den Arbeitskontext unterstreicht. Indem das Augenmerk zusätzlich auf Moderatoren (Studie 1 und Studie 2) und Mediatoren (Studie 3) im Crossover-Prozess gerichtet wurde, konnte gezeigt werden, dass unterschiedliche Mechanismen beim Crossover von Selbstwert und Selbstwirksamkeit beteiligt zu sein scheinen. Die unterschiedlichen zeitlichen Rahmen in Studie 1 und Studie 2 sind hierbei eine besondere Stärke, weil sie Schlussfolgerungen zu Unterschieden in kurz- beziehungsweise langfristigen Crossover-Prozessen ermöglichen. Bezüglich der Forschung zu Quellen berufsbezogener Selbst-Evaluationen konnten die Ergebnisse aller drei empirischer Studien zeigen, dass die Nicht-Arbeits-Domäne eine zusätzliche Quelle individueller berufsbezogener Selbst-Evaluationen darstellen kann.

Das Ergebnis, dass sich berufsbezogene Selbst-Evaluationen zwischen zwei Partnern übertragen können, hat wichtige Implikationen für Organisationen wie auch für Arbeitnehmerinnen und Arbeitnehmer: Es hilft, ein breiteres Verständnis für mögliche Quellen individueller berufsbezogener Selbst-Evaluationen und für die Vereinbarkeit von Berufs- und Privatleben zu entwickeln.

SUMMARY

Self-esteem and self-efficacy have been shown to be important in employees' working lives. Both constructs predict employees' positive work-related behavior as well as their perceived well-being. This dissertation adds to research on sources of employees' job-related self-evaluations by examining correlates of employees' self-esteem and self-efficacy in the non-work domain. Specifically, the present dissertation focuses on the crossover of self-esteem and self-efficacy in dual-earner relationships. Crossover processes describe the transmission of psychological states between two closely related people. Although crossover processes could be shown for a number of psychological states, crossover research has mainly focused on the crossover of negative psychological states between partners. This dissertation aims to address this research gap by investigating the crossover of self-esteem and self-efficacy as positive job-related self-evaluations as well as its work-related antecedents and consequences. Study 1 and Study 2 thereby dealt with the crossover of self-esteem from different time perspectives as well as with possible moderators facilitating the crossover of self-esteem. Study 3 focused on the crossover of self-efficacy and its underlying mechanisms.

Study 1 examined the crossover of self-esteem within working couples and its work-related antecedents and consequences from a day-level perspective. A diary study over five consecutive working days was conducted among 102 working couples. Results from multilevel analyses using the Actor-Partner Interdependence Model showed that a person's day-specific job performance was related to this person's day-specific self-esteem perceptions after work. Furthermore, as expected, the day-specific self-esteem experienced by one partner (the 'actor') after work predicted the other partner's (the 'partner's') self-esteem in the evening. This crossover effect was stronger for partners with a generally low level of self-esteem and a generally high level of empathic concern. Finally, the partner's

day-specific self-esteem in the evening related to the partner's anticipated work engagement the next morning.

Study 2 also examined the crossover of self-esteem within working couples. Contrary to Study 1, however, the focus of this study lied on the long-term process of self-esteem crossover and its work-related antecedents and consequences. Using a longitudinal study (time lag: six months) among 294 working couples, hypotheses again were tested with multilevel analyses using the Actor-Partner Interdependence Model. As hypothesized, a person's work engagement could be shown to be both antecedent and consequence of this person's self-esteem perceptions. Furthermore, contrary to predictions, a direct crossover of self-esteem over a six months' period could not be demonstrated. However, as expected, there was a significant moderation of the partner's general self-esteem in the crossover process implying that especially people with a rather low level of general self-esteem are susceptible to self-esteem crossover.

Study 3 dealt with the crossover of self-efficacy within working couples and its underlying mechanisms. Online survey data from a sample of 102 professionals and their working partners was gathered. Results from multilevel analyses with the Actor-Partner Interdependence Model confirmed a crossover of self-efficacy between both partners. Furthermore, results supported the hypothesis that vicarious experience and verbal persuasion are the mediators underlying this crossover process. Finally, as expected, the crossover of self-efficacy in turn resulted in the partner's altered work engagement.

In conclusion, this dissertation contributes to research on positive crossover processes and on sources of individuals' job-related self-evaluations. Particularly, by integrating research on self-esteem and self-efficacy within the crossover framework, a crossover of both self-esteem and self-efficacy could be shown among working couples which supports the main proposition of the present dissertation. Throughout all three studies it could be

demonstrated that the crossover of job-related self-evaluations in turn resulted in the partner's altered work engagement which underlines the relevance of the results for the work context. Furthermore, by focusing on both moderators (Study 1 and Study 2) and mediators (Study 3) within the crossover process, it could be shown that different mechanisms seem to be involved in the crossover of self-esteem and self-efficacy, respectively. The different time frames in Study 1 and Study 2 thereby constitute a special strength as they enable conclusions concerning differences between short- and long-term crossover processes, respectively. Concerning research on the sources of individuals' job-related self-evaluations, the results of all three empirical studies could demonstrate that the non-work domain constitutes an additional source of an individual's job-related self-evaluations.

The crossover of job-related self-evaluation between working partners brings along important implications for organizations and employees alike as it helps to broaden the view on sources of individuals' job-related self-evaluations and the compatibility of a person's work and non-work life.

GENERAL INTRODUCTION

Self-esteem and self-efficacy are important experiences in employees' working lives. Both job-related self-evaluations have been shown to be highly beneficial for employees themselves as well as for the organizations they work in: Amongst others, employees with high self-esteem and high self-efficacy exhibit higher well-being and increased performance (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998). Thus, one major aim of research has been to identify ways to strengthen these job-related self-evaluations. Until now, when trying to identify possible sources of employees' self-esteem and self-efficacy, research has merely focused on an employee's direct work environment (e.g., supervisor behavior, Eden, et al., 2000). The role of a person's non-work social environment thereby has been largely neglected. However, research on the interplay between a person's working and private life has brought broad theoretical and empirical consensus that both of these life domains are mutually intertwined (Bianchi & Milkie, 2010; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). Thus, when trying to explain a person's experiences and behavior at work this person's non-work experiences also have to be taken into account. Therefore, the main aim of the present dissertation is to identify sources of individuals' job-related self-evaluations that go beyond the work context. Specifically, the focus lies on the role of an employee's working partner for his or her job-related self-evaluations.

The following section will give an overview over research on the interplay between a person's working and private life focusing on two mechanisms linking both life domains: Spillover and crossover processes.

Spillover and Crossover Processes

Spillover "refers to effects of work and family on one another that generate

similarities between the two domains" (Edwards & Rothbard, 2000, p. 180). Spillover processes imply that a person's affect, values, skills, and behavior can be intraindividually carried over from work to home and vice versa (Edwards & Rothbard, 2000). For example, an employee's mood from work can be carried over to the home domain, thereby affecting this person's affective experience and behavior at home. This intraindividual transmission can embrace negative spillover processes (also referred to as work-family and family-work conflict, e.g., Greenhaus & Beutell, 1985) as well as positive spillover processes (also referred to as work-family and family-work enrichment, e.g., Greenhaus & Powell, 2006). Carrying psychological states from work to the home domain can then, in a further step, interindividually affect a person's partner at home. This dyadic, interindividual transmission of psychological states between partners is called crossover (Westman, 2001). Spillover and crossover are two complementary processes (Bakker, Westman, & van Emmerik, 2009). For example, an employee's mood experienced at work can be carried home via spillover processes and can then consequently be transmitted to his or her partner. The experiences made by the other partner at home can then again unfold their impact on his or her working life via spillover processes (Bakker, Demerouti, & Dollard, 2008). Taken the constantly increasing number of dual-earner couples in Western societies (Ilies, et al., 2007), this mutual impact of psychological states between two partners is of special relevance. But how do one partner's experiences made at work affect the other partner at home?

According to Westman (2001), three explanations can account for crossover processes. First, crossover can be a direct empathic reaction similar to the phenomenon of mood contagion (Neumann & Strack, 2000). For example, Song, Foo, Uy, and Sun (2010) showed a direct crossover of psychological distress between their job-seeking participants and their employed partners. Second, crossover can be an indirect process with mediating mechanisms linking the crossover process. Supporting this notion, Bakker et al. (2008)

revealed social undermining as one mediator underlying negative crossover processes. Third, crossover effects can also be spurious in the sense that there is no genuine transmission of psychological states between partners. In this last case, there rather exists a mutual similarity due to a similar environment of both partners with shared stressors as well as shared resources. In line with this last explanation, Song et al. (2010) could show that the daily crossover of distress between partners was partly caused by both partners' shared stressors (e.g., shared financial strain).

Although research has already shown crossover effects between working partners for a number of psychological states, some important questions still remain unanswered. Especially, until now, crossover research mainly focused on the transmission of negative psychological states like stress or strain between partners (Bakker, et al., 2009; Westman, 2001). Only recently, in line with the perspective of work-family enrichment (Greenhaus & Powell, 2006), a few studies could show that crossover processes can also be beneficial as positive states and experiences like positive mood or work engagement can also be transmitted between partners (Bakker & Demerouti, 2009; Song, Foo, & Uy, 2008). This dissertation aims to expand this positive crossover perspective by examining the crossover of self-esteem and self-efficacy as positive job-related self-evaluations. Although a person's social environment has been shown to be a central determinant of both self-esteem and self-efficacy (Bandura, 1997; Denissen, Penke, Schmitt, & van Aken, 2008) and some research even hints to a convergence of self-esteem between partners (Schafer & Keith, 1992), a possible crossover of job-related self-evaluations between partners has not been investigated by now.

Thus, examining the crossover of job-related self-evaluations between partners in dual-earner relationships importantly adds to research on both positive crossover processes and sources of job-related self-evaluations.

Both self-esteem and self-efficacy are important predictors of positive work-related outcomes like job performance (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998). Thus, the investigation of how a person might benefit from his or her partner's high self-esteem and self-efficacy via crossover processes extends the positive crossover perspective by integrating two important positive work-related experiences into the crossover framework. Additionally, examining work-related antecedents and consequences of the crossover of job-related self-evaluations helps to understand how spillover and crossover processes mutually complement each other and aims to underline the importance of crossover processes for the work context.

Furthermore, examining the crossover of job-related self-evaluations between working partners helps to take a broader view on the sources of individuals' job-related self-evaluations and emphasizes the importance of keeping in mind a person's non-work social environment when searching for sources of individuals' job-related self-evaluations. As mentioned earlier, until now, when trying to identify possible sources of employees' job-related self-evaluations, research has merely focused on the work context (Eden, et al., 2000; Eden & Kinnar, 1991; Mellor, Barclay, Bulger, & Kath, 2006; Prussia & Kinicki, 1996). This dissertation's main proposition is that a person's partner, as an important part of his or her non-work social environment, should be an additional source of this person's self-esteem and self-efficacy. This proposition also brings along important implications for practice as it should be one major goal in organizations to foster employees' job-related self-evaluations. Thus, knowing that sources of individuals' job-related self-evaluations partly lie in their non-work lives and that an employee's work and non-work life can be mutually enriching could help managers to create work environments and policies that help employees to benefit from positive crossover processes.

In the following section, I will define both job-related self-evaluations as they are operationalized in the present dissertation in more detail.

Self-Efficacy and Self-Esteem

As mentioned earlier, self-efficacy and self-esteem are two central self-evaluation constructs, both predicting important behavioral, affective, and motivational work-related outcomes like job performance and well-being (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998). According to Bandura (1997, p. 3), general self-efficacy "refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Self-efficacy beliefs in general predict a person's persistence and effort on a given task and therefore are an important predictor of behavior and behavior change (Bandura, 1977). General self-esteem is a self-evaluation "referring to individuals' degree of liking or disliking for themselves" (Brockner, 1988, p. 11). As Chen, Gully and Eden (2004) point out, although both constructs are interrelated and predict similar work-related outcomes, self-efficacy and self-esteem nevertheless need to be conceptionally differentiated. According to Chen et al. (2004), self-efficacy and self-esteem relate to those work-related outcomes through different mechanisms as self-efficacy is more strongly characterized by a motivational component whereas self-esteem has a stronger affective focus.

Nevertheless, both concepts also share two major similarities. The first similarity between self-esteem and self-efficacy is that both constructs "appear to reflect state and trait properties" (Gardner & Pierce, 1998, p. 51). This means that every person has a rather constant, trait-like component of self-esteem and self-efficacy. Furthermore, self-esteem as well as self-efficacy can also vary around this constant level depending on situational factors. For example, Nezlek and Plesko (2001) showed a positive daily relation between positive

events and participants' self-esteem. Thus, intraindividual changes in both self-esteem and self-efficacy around a person's general level of these constructs can occur due to environmental factors. In this dissertation the focus lies on a person's partner as a central component of this person's social environment and a person's short-term as well as long-term changes in job-related self-evaluations due to the partner.

A second parallel of self-esteem and self-efficacy is that both constructs are domain-specific in nature (Gardner & Pierce, 1998). This means that in order to make valid predictions of a person's behavior in a given domain it has been shown to be beneficial to assess both self-evaluations in the corresponding field (Bandura, 1997; Marsh & O'Mara, 2008; Vallerand, Pelletier, & Gagné, 1991). Thus, to be able to make more precise predictions of a person's behavior at work, this dissertation focuses on two facets of self-efficacy and self-esteem, respectively. On the one hand, concerning self-efficacy, I focused on job-related self-efficacy. Job-related self-efficacy can be defined as an employee's "estimate of his or her capacity to orchestrate performance on a specific task" (Gist & Mitchell, 1992, p. 183). Thus, this facet of self-efficacy should be most closely related to employees' effort and persistence on their tasks at work. On the other hand, concerning self-esteem, I focused on performance self-esteem (Heatherton & Polivy, 1991). Regarding the different facets of self-esteem, performance self-esteem has been shown to be most closely related to a person's performance-related behavior (Heatherton & Polivy, 1991) – a central work-related outcome. Moreover, performance self-esteem has already been demonstrated to exhibit short-time changes depending on situational circumstances like performance feedback (Heatherton & Polivy, 1991) which made it particularly suitable for Study 1 that took a day-level perspective on self-esteem crossover.

Research Goals

The first goal of the present dissertation is to extend research on positive crossover processes by examining the crossover of the positive job-related self-evaluations self-esteem and self-efficacy. Specifically, I investigate the crossover of self-esteem (Study 1 and Study 2) and the crossover of self-efficacy (Study 3) within dual-earner relationships. Concerning the crossover of self-esteem, I examine intraindividual changes in individuals' self-esteem in dependence of their working partners. Study 1 thereby examines short-term, daily fluctuations in individuals' self-esteem. Study 2 takes a long-term perspective by focusing on changes in personal self-esteem over six months. These different time perspectives aim to shed more light on the time frame of the crossover of self-esteem. In Study 3, the crossover of self-efficacy is examined with a cross-sectional design. Study 3 also addresses the alternative explanation of the couples' initial similarity due to assortative mating (Gonzaga, Campos, & Bradbury, 2007; Tambs & Moum, 1992). By testing this alternative explanation this study complements former cross-sectional crossover research. Self-esteem and self-efficacy ratings are taken independently from both partners in all studies. To take account of the dyadic nature of the data structure multilevel analyses using the Actor-Partner Interdependence Model (Kenny, Kashy, & Cook, 2006) are applied throughout the studies.

A second goal of my dissertation is to illuminate circumstances that might facilitate the crossover of job-related self-evaluations as well as possibly underlying mechanisms. The question of moderators in the crossover of self-esteem is addressed in Study 1 and Study 2. By building on research on self-esteem (Crocker & Wolfe, 2001; Vohs & Heatherton, 2001) and on crossover processes (Bakker & Demerouti, 2009; Westman, 2001), I investigate a person's general level of self-esteem (Study 1 and Study 2) as well as a person's empathic concern (Study 1) as variables that should foster the crossover of self-esteem. In Study 3, I address the mechanisms possibly underlying the crossover of self-efficacy. Thus, the main focus of Study 3 lies on the question of how self-efficacy can actually be transmitted between

working partners. I thereby built on self-efficacy research (Bandura, 1997) and examine vicarious experience and verbal persuasion as two mediators that should underlie the crossover of self-efficacy between partners.

Finally, I aim to integrate research on spillover and crossover processes. The main focus hereby lies on possible work-related consequences of the crossover process: How can the crossover of job-related self-evaluations in turn affect the partner's working life? As an important work-related outcome I focus on participants' work engagement in all three studies. Work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, absorption, and dedication" (Schaufeli & Bakker, 2004, p. 295) is central for employees' satisfaction, personal initiative, and performance at work (Salanova, Agut, & Peiró, 2005; Sonnentag, 2003; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009b). Showing that the crossover of both self-esteem and self-efficacy are in turn associated with the partners' altered work engagement emphasizes the importance of searching for sources of individuals' job-related self-evaluations beyond the direct work context.

Dissertation Outline

This dissertation comprises three empirical studies that examine the crossover of job-related self-evaluations. These studies are presented in Chapter 2 to Chapter 4.

Study 1 (Chapter 2) examines the crossover of self-esteem between working partners from a day-level perspective. Specifically, my co-authors and I examine how the self-esteem experienced by one partner after work relates to the other partner's self-esteem in the evening. Furthermore, we investigate work-related antecedents and consequences of this crossover process as well as moderators that facilitate the crossover of day-specific self-esteem between partners. Specifically, we propose that a person's job performance affects

this person's self-esteem after work and that this day-specific self-esteem can cross over to the other partner in the evening. Furthermore, we hypothesize that this crossover process should especially occur if the partner has a generally low level of self-esteem and a generally high level of empathic concern. Finally, as a work-related consequence of this daily crossover process, we examine a person's self-esteem in the evening as a predictor of this person's anticipated work engagement the next morning. We test these hypotheses with a diary study over five consecutive working days using independent partner ratings from 102 working couples.

Study 2 (Chapter 3) focuses on the crossover of self-esteem from a long-term perspective. Thus, we examine one partner's self-esteem as a predictor for changes in the other partner's self-esteem after six months. Again, we investigate the other partner's general level of self-esteem as a possible moderator in the crossover process. In this second study, we take a closer look at work engagement as both work-related antecedent and consequence of this crossover process. Our hypotheses are tested with a longitudinal study over six months among 294 working couples.

Study 3 (Chapter 4) deals with the crossover of self-efficacy. This study's main focus lies on the mechanisms underlying the crossover of self-efficacy. In line with self-efficacy research (Bandura, 1977), we argue that self-efficacy should cross over between partners and that vicarious experience and verbal persuasion should account for this crossover process. As a work-related consequence of the crossover of self-efficacy we focus on work engagement. We test our hypotheses with an online study among 102 working couples who independently answered our online questionnaires.

The final chapter (Chapter 5) will summarize the findings of these three empirical studies. Furthermore, I will draw conclusions from the central results and will outline the studies' contribution to research as well as their strengths and limitations. The final chapter

will end with an overview over this dissertation's implications for practice and future

research and a general conclusion.

STUDY 1

THE CROSSOVER OF SELF-ESTEEM: SOURCES AND CONSEQUENCES OF DAY-SPECIFIC SELF-ESTEEM

Summary

This diary study examines the daily crossover of self-esteem within working couples and its work-related consequences. We hypothesized that a person's day-specific job performance is related to this person's day-specific self-esteem perceptions after work. Furthermore, we assumed that the day-specific self-esteem experienced by one partner after work crosses over to the other partner and that this crossover process is moderated by the other partner's general level of self-esteem and empathic concern. Finally, we expected that a person's state self-esteem at bedtime is positively related to this person's anticipated work engagement the next day. We conducted a diary study over five consecutive working days among 102 working couples. Multilevel analyses using the Actor-Partner Interdependence Model supported our hypotheses. A person's daily job performance was positively related to this person's state self-esteem perceptions after work. Day-specific self-esteem experienced by one partner (the 'actor') after work crossed over to the other partner (the 'partner') in the evening, particularly when the partner had a generally low level of self-esteem and a generally high level of empathic concern. The partner's day-specific self-esteem in the evening predicted the partner's anticipated work engagement the next morning.

Introduction

According to crossover research (Westman, 2001), psychological states can be transmitted between partners in romantic relationships. This means that one partner's experiences do not leave the other partner unaffected. An important experience in employees' everyday work lives is self-esteem as a self-evaluation that affects work-related behavior and multiple positive outcomes, such as job satisfaction and job performance (Pierce & Gardner, 2004). The crossover perspective suggests that self-esteem may be transmitted within working couples. However, although research has shown that day-specific fluctuations in self-esteem depend on the interaction with intimate others (e.g., with one's partner; Denissen, et al., 2008), the direct transmission of self-esteem has not been investigated up to now. As the interaction between partners in romantic relationships usually takes place on a daily basis, people can be affected by the experiences made by their partners at work every day. This assumption emphasizes the importance of a day-level perspective to tap crossover processes between partners. Thus, in our study we examine the day-specific crossover of self-esteem as well as possible work-related antecedents and consequences of the daily self-esteem crossover.

We argue that besides the general level of a person's self-esteem, self-esteem also fluctuates intraindividually across days around that person's general level, depending on certain daily events (Crocker & Wolfe, 2001). Specifically, we posit that self-esteem fluctuates on a daily basis, depending on one's perceived job performance. Furthermore, we assume that the self-esteem of one partner (the 'actor') also affects the self-esteem of the other partner (the 'partner'); that is, it crosses over to the other partner. We posit that this crossover of day-specific self-esteem is facilitated if two conditions are met. Specifically, we examine the moderating role of general self-esteem and empathy in the crossover process. Finally, we address possible consequences of self-esteem crossover. We postulate that

people's self-esteem perceptions in the evening are related to their anticipated work engagement the next morning. To test our model, we use a diary design in a sample of working couples (see Figure 2.1).
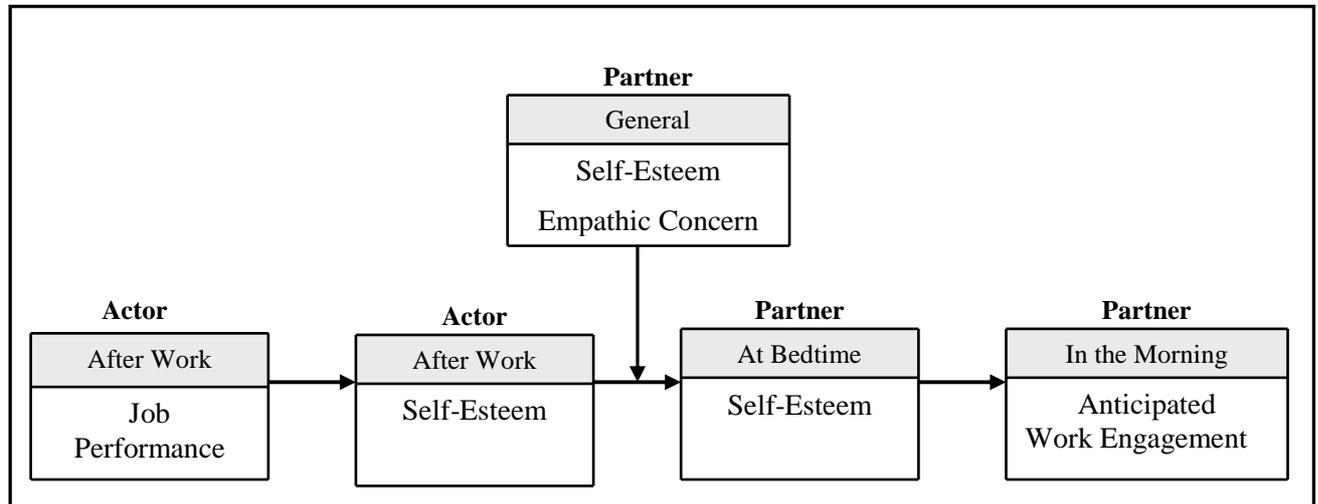
Figure 2.1. Model proposed in our study

The aim of our study is threefold: First, to test the relation between a person's day-specific job performance and this person's day-specific self-esteem perceptions. Second, to test crossover effects of day-specific self-esteem between partners, including moderators that influence the strength of these crossover effects. Finally, to test work-related outcomes of self-esteem crossover.

Our study adds to research in several ways. First, self-esteem is a self-evaluation which is highly relevant to a multitude of work-related outcomes (Pierce & Gardner, 2004). To our knowledge, there has been no research as of yet on the transmission of self-esteem between partners. Therefore, revealing the *partner* as one additional source of self-esteem can notably add to existing literature. In our study, we want to depict, in detail, the daily process of how self-esteem experienced by one partner (as a consequence of this person's job performance) can affect the state self-esteem of the other partner.

Secondly, by taking a positive crossover perspective, our study extends past crossover research, which has mainly focused on the transmission of negative states such as stress and strain within working couples (Bakker, et al., 2008; Hammer, Allen, & Grigsby, 1997; Westman, 2001). Only recently, a few studies have shown crossover processes of positive states (Bakker & Demerouti, 2009; Song, et al., 2008), suggesting that one's partner can act as a source of positive work-related states. However, up to now, research on positive crossover processes is still rare. Therefore, by investigating the crossover of self-esteem - a positive self-evaluation that is a predictor of multiple positive outcomes (Pierce & Gardner, 2004) - our study helps to shed more light on positive crossover processes.

The third contribution of the present study refers to its methodological approach. Although there is broad theoretical support for the distinction between a person's general level of self-esteem and day-specific fluctuations in state self-esteem (Heatherton & Polivy, 1991), the present study is one of a few studies that takes a closer look at self-esteem from a day-level perspective. Additionally, job performance and work engagement have also been shown to vary on a daily basis (Bakker & Xanthopoulou, 2009; Sonnentag, 2003). Therefore, when examining the relation between job performance and self-esteem, self-esteem crossover, and consequences of self-esteem on work engagement, it is essential to take a day-level perspective. To the best of our knowledge, however, these associations have not been investigated as a daily process, yet. Thus, with a diary design, our study takes into account this day-level structure and helps to gain a better understanding of these daily processes.

The Relation between Day-Specific Job Performance and Day-Specific Self-Esteem

According to self-esteem research, two different aspects of self-esteem can be distinguished: a person's general, rather constant level of self-esteem and the state level of self-esteem that varies around this general level (Heatherton & Polivy, 1991). Daily

fluctuations in state self-esteem can happen for various reasons and can stem from a multitude of different life domains. Research has shown that one important source of self-esteem fluctuation is feedback on one's own performance. For example, Crocker, Karpinski, Quinn and Chase (2003) found that students showed lower self-esteem on days they received poor grades as opposed to days they received good grades. Furthermore, especially domain-specific self-esteem seems to fluctuate on a daily basis (Crocker & Wolfe, 2001). This means that a person's daily experiences in a specific domain, such as a success or failure at work, affect this person's momentary self-esteem in the corresponding domain. Heatherton and Polivy (1991) distinguish three different self-esteem domains: the performance, the appearance, and the social domain of self-esteem. In a sample of students, these authors showed that receiving poor grades on midterm exams had negative effects on students' performance state self-esteem, whereas there was no relation between academic failure and appearance or social state self-esteem. To sum up, perceived performance is one major reason for daily self-esteem fluctuations, which seems to mainly affect the performance component of state self-esteem. Thus, in everyday work life, as the perception of one's own job performance varies on a daily basis (Bakker & Xanthopoulou, 2009), people's self-esteem perceptions should vary, too. Although this relation could be demonstrated in different student samples (Crocker, et al., 2003; Heatherton & Polivy, 1991), to our knowledge it has not yet been shown in a working sample. We therefore focus on the relation between a person's daily job performance and this person's performance state self-esteem. More specifically, we propose that a person's day-specific job-performance perceptions - information highly relevant for performance-based self-esteem - are positively related to that person's performance self-esteem on that day.

Hypothesis 1: A person's day-specific job performance is positively related to this person's day-specific self-esteem after work.

The Crossover of Day-Specific Self-Esteem

Generally speaking, crossover is defined as a dyadic, interindividual transmission of stress and strain from one person to another (Bolger, DeLongis, Kessler, & Wethington, 1989; Westman, 2001). Westman (2001) suggested to broaden that definition to include positive crossover processes as well. Therefore, crossover research increasingly deals with the crossover of positive states and experiences. For example, Song et al. (2008) showed that positive as well as negative mood can be transmitted between spouses on a daily basis. Because self-esteem is a positive self-evaluation that is highly relevant to an array of work-related outcomes (Pierce & Gardner, 2004), finding self-esteem transmission between partners could add substantially to existing literature on positive crossover processes. Research has already shown that self-esteem varies depending on social interactions and interpersonal feedback (Denissen, et al., 2008; Leary, Haupt, Strausser, & Chokel, 1998). From a crossover perspective, these variations in day-specific self-esteem could be caused by self-esteem transmission. But how can day-specific self-esteem cross over between partners?

According to Pinkus, Lockwood, Schimmack, and Fournier (2008), partners within romantic relationships are very aware of their partners' abilities and performance and compare themselves with their partners on a daily basis. Additionally, McFarland, Buehler, and MacKay (2001) found that the observation of the performance of partners in so-called identity-relationships - which are typical for spousal and romantic relationships - led to assimilation effects. Assimilation effects mean that as the partner is a critical component of one's own identity, "the target's success or failure is experienced as the participants' own" (McFarland, et al., 2001, p. 563). These authors found that participants showed positive self-oriented affect after the success of intimate others and even tended to have improved self-evaluations. We therefore assume that experiencing one's partner's high or low self-esteem in

the evening can cause similar self-evaluations in oneself; that is, it can cause the crossover of day-specific self-esteem.

Hypothesis 2: The actor's day-specific self-esteem after work is positively related to the partner's day-specific self-esteem at bedtime.

The Moderating Role of General Self-Esteem and Empathic Concern in the Crossover Process

To gain a better understanding of self-esteem crossover, we examine the circumstances that might facilitate the daily crossover of self-esteem within couples. We focus on two person-variables as moderators in the crossover process. First, when regarding fluctuations in state self-esteem, a person's general level of self-esteem has been shown to be important. There is broad support in literature that people high in general self-esteem tend to react differently to self-relevant information than people low in general self-esteem (Aberson, 1999; Crocker & Wolfe, 2001; Vohs & Heatherton, 2001). We therefore take a closer look at the partner's general level of self-esteem as a moderator in self-esteem crossover. Second, crossover literature repeatedly emphasized the importance of empathy in the transmission of psychological states within dyads (Bakker & Demerouti, 2009; Westman, 2001). Hence, we want to shed more light on the role of empathy in the process of self-esteem crossover. In the following paragraphs, we will delineate, in detail, the role of both variables in the crossover process.

The role of general self-esteem.

When regarding daily fluctuations in state self-esteem, the general level of self-esteem plays an important role. Although day-specific self-esteem variations can be a function of daily events, the way people experience and attribute certain events is affected by their

general level of self-esteem (Leary, Tambor, Terdal, & Downs, 1995). Furthermore, the domain on which people stake their self-esteem varies depending on their general level of self-esteem (Crocker & Wolfe, 2001). Crocker and Wolfe (2001) found that people low in general self-esteem mainly based their self-esteem on external sources, such as the attitudes or behavior of other people. By contrast, self-esteem of people high in general self-esteem mainly stemmed from internal sources, such as personal accomplishments. These findings go in line with research of Vohs and Heatherton (2001), who found that after a threat to the self, people low in general self-esteem have a rather interdependent focus (e.g., focus on interpersonal relationships) whereas people high in general self-esteem have a independent focus (e.g., focus on their own competencies). In a similar vein, Aberson (1999) found that people low in general self-esteem tend to enhance themselves by "basking in the reflected glory" of successful others, whereas people high in general self-esteem mainly focus on their own accomplishments. Thus, the general level of self-esteem seems to affect the focus of people's attention. As people low in general self-esteem have a stronger interpersonal focus and are more easily affected by external cues, they also should be more susceptible to self-esteem crossover. Therefore, whereas people high in general self-esteem should mainly focus on their own daily job performance, people low in general self-esteem should mainly focus on the accomplishments of significant others; for example, of their working partner. To conclude, we expect that people low in general self-esteem should be more easily affected by their partners' day-specific self-esteem. In contrast, people high in general self-esteem should not be affected by their partner's self-esteem.

Hypothesis 3: The partner's general level of self-esteem moderates the crossover of day-specific self-esteem in romantic relationships. There is a positive crossover of day-specific self-esteem for a partner low in general self-esteem. There is no crossover of day-specific self-esteem for a partner with a generally high level of self-esteem.

The role of empathic concern.

Three possible explanations for crossover processes have been discussed (Westman, 2001): Crossover as a direct empathic process, crossover due to common stressors, and crossover as an indirect process (e.g., via social support or undermining, see Bakker, et al., 2008). Which explanation mainly accounts for the crossover process depends on the construct in question. As self-esteem is an affective self-evaluation (Brockner, 1988) and is related to mood perceptions (Heatherton & Polivy, 1991), we assume that direct empathic reactions should play an important role in the transmission of self-esteem. Crossover as a direct empathic process implies that one partner catches the positive or negative affective states of his or her partner. On the one hand, this can happen rather unconsciously by automatic mood transfer and contagion, by imitating facial or postural expressions of one's partner (Hatfield, Cacioppo, & Rapson, 1994; Neumann & Strack, 2000). On the other hand, this can also be the result of a more conscious empathic process (Song, et al., 2010). According to Davis (1980), empathic concern is a core dimension of empathy that constitutes its emotional component and refers to "feelings of sympathy and concern for unfortunate others" (Davis, 1983, p. 114). It therefore taps a person's emotional responsivity and is related to sensitivity to others (Davis, 1983). Hence, empathic concern is that aspect of empathy that assesses the degree to which people feel themselves into another person. As self-esteem is an affective self-evaluation, a person's level of empathic concern should be crucial for self-esteem transmission. Specifically, we assume that self-esteem crossover should only occur if people are sensitive to changes in affective states of their partners; that is, when they are high in empathic concern. By contrast, people low in empathic concern should not be affected by their partners' day-specific self-esteem.

Hypothesis 4: The partner's general level of empathic concern moderates the crossover of day-specific self-esteem in romantic relationships. There is a positive crossover

of day-specific self-esteem for a partner high in general empathic concern. There is no crossover of day-specific self-esteem for a partner low in general empathic concern.

Indirect Effects in the Crossover Process

Our hypotheses depict the daily process of how daily job performance can affect one's state self-esteem which, in turn, can cross over to one's partner under certain conditions. Therefore, our model proposes two cases of moderated indirect effects (Mathieu & Taylor, 2006). In other words, we assume that the indirect effect of the actor's daily job performance on the partner's self-esteem should be significant if the partner has a generally low level of self-esteem or is high in empathic concern. By contrast, the indirect effect should not be significant if the partner has a generally high level of self-esteem or is low in empathic concern.

Hypothesis 5a: The actor's perceived job performance after work is indirectly related to the partner's self-esteem at bedtime via self-esteem crossover if the partner is low in general self-esteem. There is no indirect effect if the partner is high in general self-esteem.

Hypothesis 5b: The actor's perceived job performance after work is indirectly related to the partner's self-esteem at bedtime via self-esteem crossover if the partner is high in general empathic concern. There is no indirect effect if the partner is low in empathic concern.

Consequences of the Daily Self-Esteem Crossover

In a final step, we address work-related consequences of daily self-esteem crossover. Does a person's self-esteem in the evening predict positive work-related states the next day?

As mentioned earlier, self-esteem is highly relevant to an array of work-related outcomes. For instance, Judge and Bono (2001) showed that it is related to job performance.

Furthermore, Judge, Bono, Erez, and Locke (2005) found that positive self-evaluations, such as self-esteem, are also related to more affective outcomes, such as job satisfaction. They demonstrated that this association was mediated by the choice of self-concordant goals. This means that people with high self-esteem choose their goals according to what they really want rather than according to external pressures, which in turn leads to improved well-being. In line with this finding, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) showed that positive self-evaluations constitute important personal resources that are positively related to work engagement. Work engagement is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p. 295). It is an affective-motivational construct that has been shown to predict important performance-related outcomes (Salanova, et al., 2005; Xanthopoulou, et al., 2009b), and varies from day to day to some degree (Sonnentag, 2003). As self-esteem is an affective self-evaluation that has already been shown to predict positive affective work-related outcomes (Judge, et al., 2005), we believe that day-specific fluctuations of people's self-esteem will affect their work engagement perceptions the next day.

As an early indicator of work engagement, we assessed anticipated work engagement in the morning. Anticipated work engagement refers to people's prospective assessment of how vigorous, dedicated and absorbed they will be during the following work day. Literature has shown that positive prospective self-appraisals are important predictors for outcomes measured at the end of the work day (Grawitch, Granda, & Barber, 2008). Grawitch et al. (2008) found that anticipated workday appraisals are crucial for employees' self-regulation and lead to better ratings of performance and affect after work. Therefore, we believe that people's day-specific self-esteem perceptions in the evening are related to their anticipated work engagement the next day.

Hypothesis 6: A person's day-specific self-esteem in the evening is related to this person's anticipated work engagement the next morning.

Method

Procedure and Sample

Participants were recruited by approaching men and women working in academia in Germany and Austria. If they lived in a relationship with a partner who was also working, we asked both partners to participate in our study. To ensure close daily interaction, the couple also had to live together. A total of 205 couples agreed to participate in our study.

Both partners were first sent a link to a general online questionnaire measuring person-level variables. During the following five consecutive work days, both partners had to fill in three short online questionnaires per day (in the morning, after work, and at bedtime). To be included in the analyses, both partners had to provide usable general data as well as after-work, bedtime, and next-morning questionnaire data from at least two days (i.e., filled in completely and at the right time). The final sample comprised of 102 couples (204 participants, 646 occasions). The average length of relationship of the couples was 7.4 years ($SD = 5.01$), with 42.2% being married and 31.4% having children ($M = 1.72$, $SD = 0.77$). Participants' average age was 32.5 years ($SD = 5.76$). The vast majority of participants (96.1%) worked in Germany. In total, 147 participants worked in academia and 57 participants had other professional jobs outside academia. Of the participants working in academia, 89.8% (with 62.1% having full time and 37.9% having part time contracts) were employed at universities or other research institutions. The other participants working in academia were mostly financed by scholarships. The participants who did not work in academia mostly worked as employees in private organizations (71.9%). They were fairly

well educated, with 59.6% having finished university or technical college. Furthermore, 28.1% of them held a supervisory position.

Measures

We collected our data with a general online questionnaire and three daily online questionnaires (morning, after work, and at bedtime) over five consecutive work days. As some participants did not have access to the Internet at home, or did not want to go online after work, they could also optionally obtain the bedtime questionnaire in a paper-based version. In the general questionnaire, we measured the general level of self-esteem, empathic concern, and demographic variables. After work, we assessed the momentary day-specific job performance and self-esteem. At bedtime, we measured the momentary day-specific self-esteem. In the morning, we assessed anticipated work engagement and sleep quality. All items were in German. Table 2.1 shows means, standard deviations, zero-order correlations, and Cronbach's alphas for all study variables.

Table 2.1

Means, Standard Deviations, and Correlations among the Study Variables

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Day-specific Self-esteem Actor (After Work)	4.26	0.53	.80	_	.48	.04	.03	-.03												
2 Day-specific Job Performance Actor (After Work)	3.74	0.74	.86	.57	_	.03	-.05	-.07												
3 Day-specific Self-esteem Partner (Bedtime)	4.26	0.53	.81	.04	.02	_	.35	.14												
4 Day-specific Anticipated Work Engagement Partner (Morning)	3.28	0.78	.93	.05	-.06	.42	_	.27												
5 Day-specific Sleep Quality Partner (Morning)	3.88	0.93		-.01	-.02	.21	.29	_												
6 General Self-esteem Actor	4.12	0.63	.82	.79	.40	.08	.07	.05	_											
7 General Self-esteem Partner	4.12	0.63	.82	.10	.06	.75	.41	.23	.16	_										
8 Empathic Concern Actor	3.60	0.77	.81	-.11	-.04	-.01	-.04	-.08	-.18	.00	_									
9 Empathic Concern Partner	3.60	0.77	.81	.02	-.01	-.09	-.01	-.10	.00	-.18	-.04	_								
10 Length of Relationship	7.42	4.99		.08	.05	.10	.02	.03	.05	.05	.09	.09	_							
11 Marriage [a]	0.44	0.51		.11	.10	.07	.17	-.02	.12	.12	.07	.07	.52	_						
12 Children [b]	0.31	0.47		.15	.08	.09	.10	-.09	.12	.12	.03	.03	.51	.57	_					
13 Gender Actor [c]	1.50	0.50		.11	.03	-.11	-.06	-.02	.16	-.16	-.28	.28	.00	.00	.00	_				
14 Gender Partner [d]	1.50	0.50		-.11	-.03	.11	.06	.02	-.16	.16	.28	-.28	.00	.00	.00	-1.00	_			
15 Age Actor	32.56	5.76		.08	.04	.01	.01	.00	.06	.01	.11	.20	.52	.48	.55	.19	-.19	_		
16 Age Partner	32.56	5.76		.04	.02	.06	.02	.03	.01	.06	.20	.11	.52	.48	.55	-.19	.19	.76	_	
17 Work Context Actor [e]	1.28	0.45		.21	.20	.01	-.03	.11	.11	.07	-.14	-.01	.06	.07	.03	.10	-.10	.05	-.08	_
18 Work Context Partner [f]	1.28	0.45		.00	-.03	.22	.12	.16	.07	.11	-.01	-.14	.06	.07	.03	-.10	.10	-.08	.05	-.34

Note. Cronbach's alphas for day-level variables averaged over all measurement occasions. Correlations below the diagonal are person-level correlations ($N = 204$) with correlations $r \geq .15$ being significant at $p < .05$ and $r \geq .19$ being significant at $p < .01$. Correlations above the diagonal are day-level correlations ($N = 646$) with $r \geq .14$ being significant at $p < .01$. [a] 0 = not married; 1 = married. [b] 0 = no children; 1 = children. [c] 1 = female; 2 = male. [d] 1 = female; 2 = male. [e] 1 = working in academia; 2 = not working in academia. [f] 1 = working in academia; 2 = not working in academia

Day-Level Variables

Job performance was assessed in the after-work questionnaire with four items from Goodman and Svyantek's scale (1999) adapted to capture day-specific job performance (e.g., "Today, I achieved the objectives of my job"). The items were rated on a five-point Likert scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Cronbach's α across the four measurement days ranged from .83 to .88 (*M* = .86).

Self-esteem after work was measured with five items from the performance subscale of Heatherton and Polivy's (1991) self-esteem scale (e.g., "I feel confident about my abilities"). Heatherton and Polivy specifically developed the scale to assess fluctuations in state self-esteem. To measure the state level of self-esteem after work, we instructed participants to rate how they felt about themselves "right now, after work". Cronbach's α of state self-esteem after work ranged from .74 to .84 (*M* = .80).

Self-esteem at bedtime was measured with five items from the questionnaire by Heatherton and Polivy (1991), analogous to the after-work questionnaire. To assess state self-esteem at bedtime as opposed to the state self-esteem after work, we instructed our participants to report how they felt about themselves "right now, before going to bed". Cronbach's α of the bedtime state self-esteem ranged from .73 to .85 (*M* = .81).

Anticipated work engagement was measured in the morning questionnaire with six 5-point Likert items adapted from the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). The items were modified to assess the anticipated work engagement in the morning (e.g., "I will feel strong and vigorous today"). Cronbach's α across the four measurement occasions ranged from .91 to .94 (*M* = .93).

Construct Validity

As both the actor's day-specific self-esteem and the actor's perceived job

performance were assessed after work, we conducted multilevel confirmatory factor analyses (CFAs) with Mplus to ensure that the two measures constituted distinct constructs. CFA results supported the superiority of the two-factor solution ($\chi^2 = 82.663$, $df = 26$, RMSEA = 0.058, CFI = .919) compared to the one-factor solution (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 24.010$, $\Delta df = 1$, $p < .001$).

Person-Level Variables

Empathic concern was measured with four 5-point Likert items from the Interpersonal Reactivity Index (IRI) developed by Davis (1980). A sample item was "When I see someone being taken advantage of, I feel kind of protective toward them" (Cronbach's α = .81).

The general level of self-esteem was again measured by using the five items from the Heatherton and Polivy questionnaire (1991; e.g., "I feel confident about my abilities"). This time, however, to measure the general level of self-esteem, we instructed participants to assess on a five-point Likert scale how they generally felt about themselves. Cronbach's α of general self-esteem was .82.

Control Variables

At the day level we assessed sleep quality in the morning questionnaire. We used a one-item measure derived from Sonnentag, Binnewies, and Mojza (2008, "How do you evaluate this night's sleep?"). As sleep quality has been shown to be related to affective states (Sonnentag, et al., 2008), we controlled for sleep quality to rule out its possible influence on participants' work engagement perceptions in the morning.

At the person level we controlled for the core individual demographic variables age and gender (1 = female; 2 = male). Additionally, as at least one partner in our sample worked in academia, we wanted to rule out a contamination of our results due to our participants'

occupational background. We therefore controlled for participants' work context (1 = working in academia; 2 = not working in academia).

At the couple level we controlled for the core relationship variables marital status (0 = not married; 1 = married) and for having children or not (0 = no children; 1 = children). Furthermore, we assumed that the longer the couples had already been together, the more likely it would be that both partners had already adapted a similar general level of self-esteem. Thus, we controlled for the length of the couples' relationships (in years).

Data Analysis

Measures of partners within romantic relationships are non-independent, as partners often share same experiences and mutually influence each other through frequent interaction. To take into account this dyadic data structure, we applied the Actor-Partner Interdependence Model (APIM; Kenny, et al., 2006). By adding both partners as the actor and as the partner into analyses, the APIM allowed us to analyze intraindividual effects (actor effects) as well as interindividual, reciprocal effects (partner effects) within a couple. Thus, in our study, partner effects describe the crossover of day-specific self-esteem between men and women as well as between women and men. We analyzed our data with a three-level hierarchical linear modeling approach (Bryk & Raudenbush, 1992), with measurement occasions being nested in individuals and individuals being nested in couples. For data analysis, we used the HLM 6 software package (Raudenbush, Bryk, Cheong, & Congdon, 2004). We centered all day-level predictor and control variables at the person mean and all individual and dyad predictor and control variables at their respective grand mean.

Results

For the day-level variables, we calculated both correlations at the person and the day level (see Table 2.1). Person-level scores of job performance, self-esteem after work, self-esteem at bedtime, anticipated work engagement, and sleep quality are based on the day-level measures averaged across the measurement occasions.

Preliminary Analyses

To test whether a 3-level hierarchical linear model was appropriate for our analyses, we computed the amount of variability at the day, person, and couple level for the day-specific measures. With three-level, intercept-only models (null models), we calculated intraclass correlations for job performance, self-esteem after work, self-esteem at bedtime, and anticipated work engagement. For job performance, the variance component at the day level was 0.294 ($SE = 0.020$), the variance component at the person level was 0.258 ($SE = 0.050$), and the variance component at the couple level was 0.001 ($SE = 0.035$). Therefore, for job performance, 53% of the variance was attributable to within-person variations and 47% of the variance was attributable to between-person variations, whereas no variation was attributable to the couple level. For self-esteem after work, 26% of the variance was attributable to within-person variations, 71% of the variance was attributable to between-person variations, and 3% of the variance was attributable to between-couple variations (cf. null model displayed in Table 2.2). Similarly, for self-esteem at bedtime, 24% of variance was attributable to within-person variations, 70% of variance was attributable to between-person variations, and 6% of variance was attributable to between-couple variations (cf. null models displayed in Table 2.3 and Table 2.4). Finally, for anticipated work-engagement in the morning, 41% of variance was attributable to within-person variations, 52% of variance was attributable to between-person variations, and 7% of variance was attributable to

between-couple variation (cf. null model displayed in Table 2.5). Taken together, all variables showed substantial variation at the day level, with within-person variations ranging from 24% to 53% ($M = 36\%$). This finding underlines the importance of taking into account day-specific variations of job performance, self-esteem after work and at bedtime, and anticipated work engagement. For all variables, almost half or more than half of the variance was attributable to between-person variations, which emphasizes the role of possible cross-level interactions. Although only a small percentage of variance was attributable to between-couple variations for all day-level measures, we used three-level hierarchical linear modeling to test our hypotheses in order to be able to administer the APIM, which is strongly recommended for a dyadic data structure (Kenny, et al., 2006).

Test of Hypotheses

      The relation between day-specific job performance and day-specific self-esteem (Hypothesis 1).

      Hypothesis 1 stated that a person's day-specific job performance is positively related to this person's day-specific self-esteem after work. To test this hypothesis, we analyzed intraindividual effects of the actor's day-specific job performance on the actor's day-specific self-esteem after work. We compared three nested models: a null model, Model 1, and Model 2. The null model was the intercept-only model. In Model 1, we included the person-level control variables; namely, the actor's gender, age, work context, and general level of self-esteem. As we only tested intraindividual effects in this hypothesis, we did not control for variables at the couple level. In Model 2, we included our core predictor variable; specifically, the actor's day-specific job performance. To test model improvements, we calculated the difference between the likelihood ratio of one model and the likelihood ratio of the previous model. This difference follows a Chi-square distribution (with degrees of

freedom being the number of variables added in each model). Table 2.2 displays

unstandardized estimates, standard errors, and t values for all three models. It also shows the

likelihood ratios and differences in likelihood ratios for all models, as well as intercept

variances at the day, person, and couple level. Model 1 (including the control variables)

showed a significantly better model fit than the null model ($\Delta - 2 \times \log = 209.740$, $df = 4$, $p <$

.001). Working in academia and the general level of self-esteem was positively related to the

actor's day-specific self-esteem. After including job performance as a predictor, Model 2

showed a further significant improvement ($\Delta - 2 \times \log = 64.820$, $df = 1$, $p < .001$), with the

estimate of the actor's day-specific job performance being highly significant. Taken together,

the actor's perceived day-specific job performance after work predicted the actor's day-

specific self-esteem after work. Therefore, data supported Hypothesis 1.

Table 2.2

Multilevel Estimates for Models Predicting Actor's Day-Specific Self-Esteem after Work

Variable	Null model			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	4.249	0.035	122.596 ***	4.111	0.086	48.020 ***	4.111	0.086	48.087 ***
Gender (Actor)				-0.030	0.042	-0.710	-0.030	0.042	-0.715
Age (Actor)				0.003	0.004	0.699	0.003	0.004	0.702
Work Context (Actor)				0.141	0.046	3.078 **	0.141	0.046	3.087 **
General Self-esteem (Actor)				0.603	0.033	18.161 ***	0.603	0.033	18.211 ***
Day-specific Job Performance (Actor)							0.186	0.022	8.351 ***
- 2 x log			620.653			410.913			346.093
Δ – 2 x log						209.740 ***			64.820 ***
df						4			1
Level 1 Variance *(SE)*			0.075 (0.005)			0.074 (0.005)			0.064 (0.004)
Level 2 Variance *(SE)*			0.203 (0.032)			0.061 (0.012)			0.064 (0.012)
Level 3 Variance *(SE)*			0.009 (0.023)			0.000 (0.008)			0.000 (0.008)

* $p < .05$; ** $p < .01$; *** $p < .001$

The crossover of day-specific self-esteem (Hypothesis 2).

In Hypothesis 2, we proposed that the actor's day-specific self-esteem after work is positively related to the partner's self-esteem at bedtime. To test this hypothesis, we again applied hierarchical linear modeling comparing three nested models: the null model (intercept-only model), Model 1 (including all control variables), and Model 2 (adding the actor's day-specific self-esteem after work as core predictor variable). This time, as we tested interindividual effects between both partners, we included control variables both at the person and at the couple level in Model 1. At the person level, we included the partner's age, gender, work context, and general level of self-esteem. At the couple level, we added the length of the couple's relationship, marital status, and if the couple had children or not, as control variables. Results are depicted in Table 2.3. Model 1 showed a significant improvement over the null model ($\Delta - 2 \times \log = 184.086$, $df = 7$, $p < .001$). The partner's general level of self-esteem and work context were positively related to the partner's day-specific self-esteem at bedtime. Model 2, in which the actor's day-specific self-esteem after work was included, showed a further improvement over Model 1 ($\Delta - 2 \times \log = 3.949$, $df = 1$, $p < .05$). The actor's day-specific self-esteem after work was a significant predictor of the partner's day-specific self-esteem at bedtime. Thus, Hypothesis 2 was supported.

Table 2.3

Multilevel Estimates for Models Predicting Partner's Day-specific Self-Esteem at Bedtime

Variable	Null model			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	4.244	0.036	118.896 ***	4.132	0.096	42.836 ***	4.132	0.096	42.835 ***
Length of Relationship				0.009	0.006	1.564	0.009	0.006	1.565
Marriage				-0.081	0.059	-1.368	-0.081	0.059	-1.368
Children				-0.011	0.067	-0.168	-0.011	0.067	-0.169
Gender (Partner)				-0.033	0.044	-0.737	-0.033	0.044	-0.736
Age (Partner)				0.001	0.005	0.278	0.001	0.005	0.278
Work Context (Partner)				0.155	0.048	3.208 **	0.155	0.048	3.208 **
General Self-esteem (Partner)				0.589	0.036	16.300 ***	0.589	0.036	16.301 ***
Day-specific Self-esteem (Actor - After Work)							0.091	0.046	1.992*
- 2 x log		594.061			409.975			406.026	
Δ – 2 x log					184.086 ***			3.949 *	
df					7			1	
Level 1 Variance *(SE)*		0.069 (0.005)			0.069 (0.005)			0.069 (0.005)	
Level 2 Variance *(SE)*		0.204 (0.032)			0.067 (0.013)			0.067 (0.013)	
Level 3 Variance *(SE)*		0.016 (0.024)			0.010 (0.010)			0.010 (0.010)	

* $p < .05$; ** $p < .01$; *** $p < .001$

The moderating role of general self-esteem and empathic concern in the crossover process (Hypotheses 3 and 4).

In the next set of analyses, we tested whether the actor's self-esteem after work was positively related to the partner's self-esteem before going to bed, particularly if the partner had a generally low level of self-esteem (Hypothesis 3) and had a generally high level of empathic concern (Hypothesis 4), respectively. Table 2.4 shows the results. This time, we compared four models: the null model, Model 1, Model 2, and Model 3. Again, the null model was the intercept-only model. In Model 1, we again included all control variables at the person and couple level. At the person level, we included the partner's age, gender, and work context. At the couple level, we again controlled for the length of the couple's relationship, marital status, and if the couple had children or not. In Model 2, all main effects were included; namely, the partner's general level of self-esteem (Level 2), the partner's general level of empathic concern (Level 2), and the actor's day-specific self-esteem after work (Level 1). In a final step (Model 3), we included both cross-level interaction terms; specifically, the interaction between the actor's day-specific self-esteem (Level 1) and the partner's general self-esteem (Level2; Hypothesis 3), as well as the interaction between the actor's day-specific self-esteem (Level 1) and the partner's general level of empathic concern (Level 2; Hypothesis4). The results are depicted in Table 2.4. Model 1 showed a significant improvement over the null model ($\Delta - 2$ x log $= 13.648$, $df = 6$, $p < .05$). Work context was a positive predictor of the partner's day-specific self-esteem. Model 2 showed a better model fit than Model 1 ($\Delta - 2$ x log $= 176.003$, $df = 3$, $p < .001$). As already found when testing Hypothesis 2, the actor's day-specific self-esteem after work and the partner's general level of self-esteem were significant predictors of the partner's day-specific self-esteem at bedtime. Model 3, including the interaction terms, showed a further improvement over Model 2 ($\Delta - 2$ x log $= 15.189$, $df = 2$, $p < .01$). Both interaction terms were significant predictors of the

partner's day-specific self-esteem at bedtime. The interactions supporting Hypothesis 3 and

Hypothesis 4 are illustrated in Figure 2.2 and Figure 2.3, respectively. Following the

approach suggested by Preacher, Curran, and Bauer (2006), we probed the simple slopes of

both interaction terms. Hereby, we used the values 1 *SD* above and below the sample means

of general self-esteem and general empathic concern, respectively. When the partner's

general level of self-esteem was low (1 *SD* below the mean), the actor's day-specific self-

esteem after work was positively related to the partner's day-specific self-esteem at bedtime

(estimate = 0.25; *SE* = 0.07; *t* = 3.68, *p* < .001). When the partner's general level of self-

esteem was high (1 *SD* above the mean), the actor's day-specific self-esteem after work was

not related the partner's day-specific self-esteem at bedtime (estimate = -0.01; *SE* = 0.06; *t* =

-0.18, *ns*). For empathic concern, we found that when the partner's general level of empathic

concern was high (1 *SD* above the mean), the actor's day-specific self-esteem after work was

positively related to the partner's day-specific self-esteem at bedtime (estimate = 0.23; *SE* =

0.07; *t* = 3.37, *p* < .001), but not when the partner's general level of empathic concern was

low (1 *SD* below the mean; estimate = 0.01; *SE* = 0.06; *t* = 0.11, *ns*). To conclude,

Hypothesis 3 and Hypothesis 4 were supported.

Table 2.4

Multilevel Estimates for Models Predicting Partner's Day-specific Self-Esteem at Bedtime

Variable	Null model			Model 1			Model 2			Model 3		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	4.244	0.036	118.896 ***	3.802	0.145	26.285 ***	4.097	0.100	41.017 ***	4.097	0.100	41.009 ***
Length of Relationship				0.008	0.009	0.881	0.009	0.006	1.541	0.009	0.006	1.543
Marriage				-0.009	0.088	-0.106	-0.083	0.059	-1.406	-0.083	0.059	-1.406
Children				0.078	0.099	0.781	-0.005	0.067	-0.079	-0.005	0.067	-0.081
Gender (Partner)				0.093	0.068	1.370	-0.015	0.046	-0.336	-0.015	0.046	-0.334
Age (Partner)				-0.004	0.008	-0.474	0.000	0.005	0.078	0.000	0.005	0.077
Work Context (Partner)				0.221	0.074	2.979 **	0.162	0.048	3.346 **	0.162	0.048	3.347 **
General Self-esteem (Partner)							0.595	0.036	16.404 ***	0.595	0.036	16.405 ***
General Empathic Concern (Partner)							0.039	0.031	1.276	0.039	0.031	1.274
Day-specific Self-esteem (Actor - After Work)							0.091	0.046	1.991*	0.118	0.045	2.600 *
Day-specific Self-esteem (A)[a] x General Self-esteem (P)[b]										-0.205	0.072	-2.856 **
Day-specific Self-esteem (A) x General Empathic Concern (P)										0.145	0.060	2.410 *
- 2 x log		594.061			580.412			404.410			389.221	
Δ – 2 x log					13.648 *			176.003 ***			15.189 **	
df					6			3			2	
Level 1 Variance *(SE)*		0.069 (0.005)			0.069 (0.005)			0.069 (0.005)			0.066 (0.004)	
Level 2 Variance *(SE)*		0.204 (0.032)			0.193 (0.030)			0.065 (0.012)			0.066 (0.012)	
Level 3 Variance *(SE)*		0.016 (0.024)			0.012 (0.023)			0.010 (0.010)			0.010 (0.010)	

* p < .05; ** p < .01; *** p < .001. [a] A = Actor; [b] P = Partner
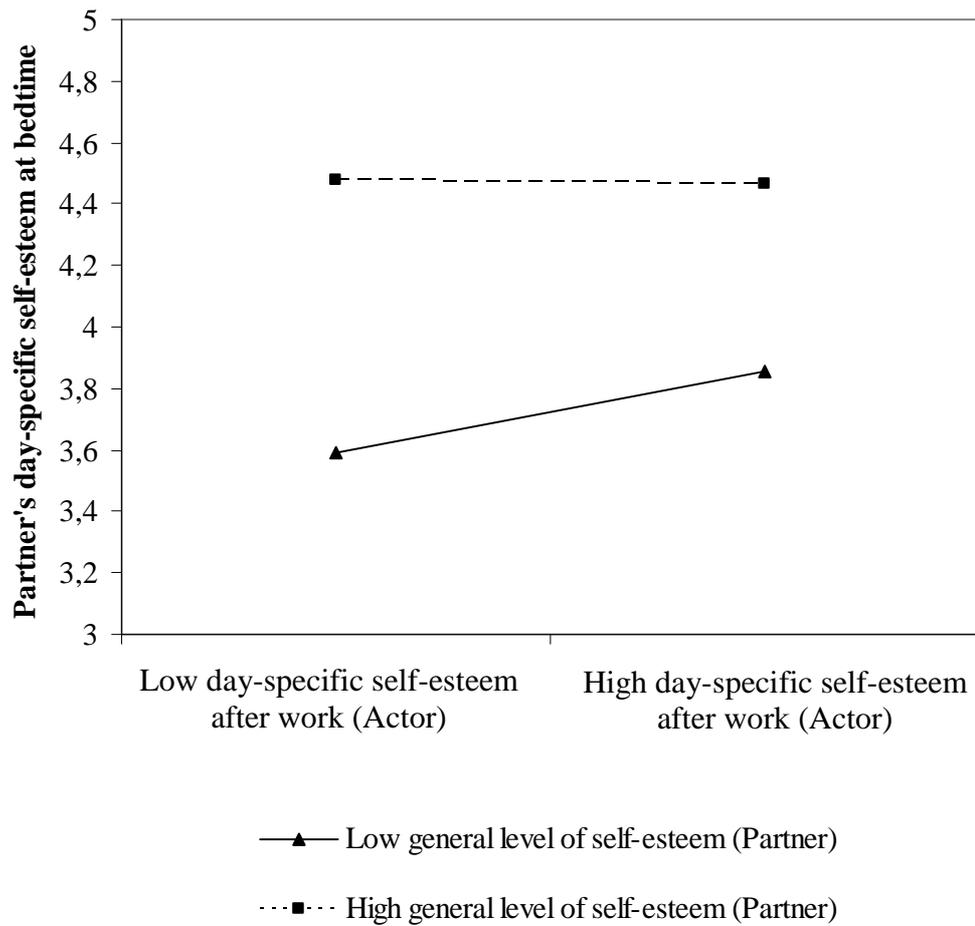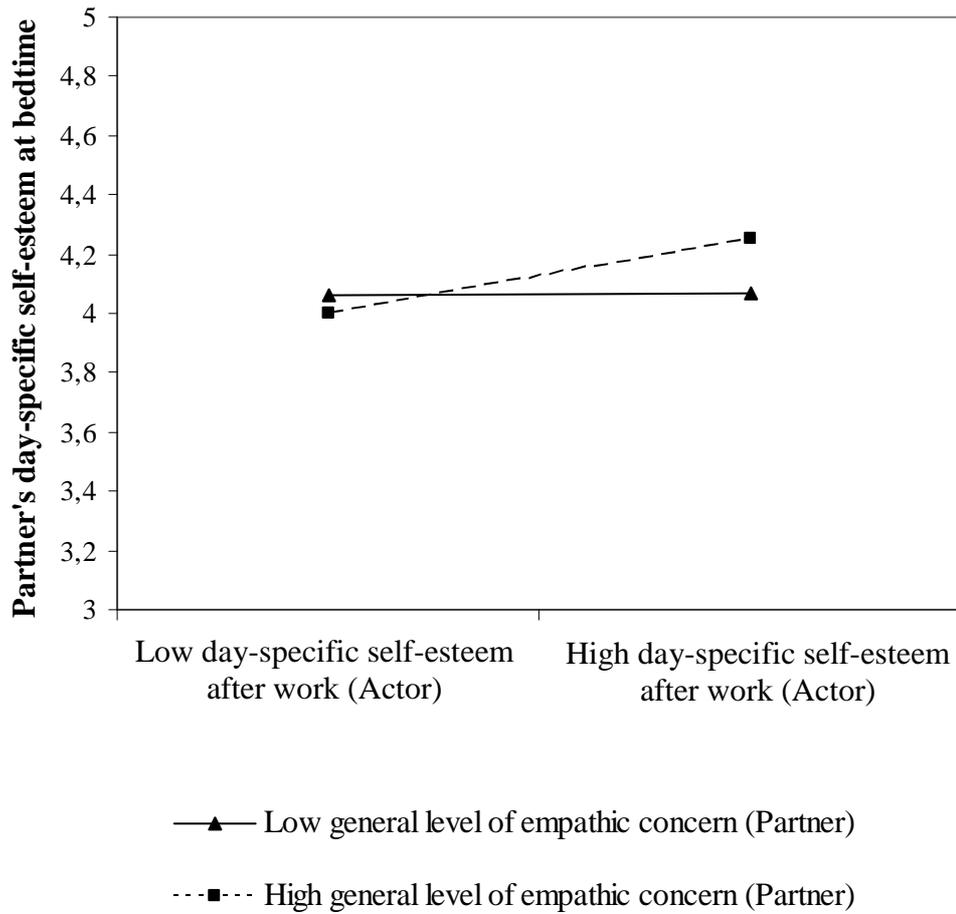
Figure 2.2. Interaction effect of the actor's day-specific self-esteem after work and the

partner's general level of self-esteem on the partner's day-specific self-esteem at bedtime.

Figure 2.3. Interaction effect of the actor's day-specific self-esteem after work and the

partner's general level of empathic concern on the partner's day-specific self-esteem at

bedtime.

Tests of indirect effects in the crossover process (Hypothesis 5a and 5b).

Hypotheses 5a and 5b stated that the actor's perceived job performance after work should be indirectly related to the partner's day-specific self-esteem at bedtime through the crossover of self-esteem. Specifically, we postulated that the actor's job performance after work should be indirectly associated with the partner's day-specific self-esteem perceptions at bedtime via the actor's day-specific self-esteem after work if the partner is low in general self-esteem (Hypothesis 5a) and high in general empathic concern (Hypothesis 5b), respectively. To test the indirect effects, we followed the approach recommended by Mathieu and Taylor (2006). According to the authors, when testing moderated indirect effects, the two following conditions have to be met: (a) the presumed independent variable (actor's job performance) is associated with the presumed mediator variable (actor's day-specific self-esteem), and (b) the presumed mediator (actor's day-specific self-esteem) is associated with the presumed dependent variable (partner's day-specific self-esteem) when certain specifications of the moderator are met (the partner is low in general self-esteem and high in general empathic concern). In contrast to a moderated mediation (Muller, Judd, & Yzerbyt, 2005), the presumed independent variable (actor's job performance) does not directly affect the presumed outcome variable (partner's day-specific self-esteem). We tested the hypothesized indirect effects by applying the Sobel z test. The tests of Hypothesis 1, 3, and 4 had already supported the conditions for testing indirect effects. Furthermore, the actor's job performance did not predict the partner's self-esteem ($\gamma = .030$, $SE = .023$, $t = 1.28$, ns). Therefore, in a first step, we tested the indirect effect of the actor's job performance on the partner's day-specific self-esteem at bedtime through the interaction between actor's day-specific self-esteem after work and partner's general level of self-esteem (Hypothesis 5a). Results of the Sobel z test ($t_a = 8.35$, $t_b = -2.87$, $z = 2.71$, $p < .01$) showed that the actor's job performance after work was indirectly associated with the partner's day-specific self-esteem

at bedtime through the actor's day-specific self-esteem after work when the partner had a low general level of self-esteem. Thus, data supported Hypothesis 5a.

Hypothesis 5b assumed that the actor's job performance should be indirectly associated with the partner's day-specific self-esteem at bedtime through the actor's day-specific self-esteem after work when the partner has a generally high level of empathic concern. As both conditions for the indirect effect were met (see Hypothesis 1 and Hypothesis 4), we again applied the Sobel z test. We tested the indirect effect of the actor's job performance on the partner's day-specific self-esteem at bedtime through the interaction between the actor's day-specific self-esteem after work and the partner's general level of empathic concern. Results of the Sobel z test ($t_a = 8.35$, $t_b = 2.39$, $z = 2.29$, $p < .05$) supported Hypothesis 5b. This means that the actor's job performance after work indirectly predicted the partner's day-specific self-esteem at bedtime through the actor's day-specific self-esteem after work when the partner had a generally high level of empathic concern.

Consequences of the crossover of day-specific self-esteem (Hypothesis 6).

Hypothesis 6 stated that a person's perceived day-specific self-esteem at bedtime is positively related to this person's anticipated work engagement the next morning. To test this hypothesis, we again compared three nested models: the null model, Model1 that included the control variables, and Model 2 that included partner's self-esteem at bedtime as a predictor variable. Table 2.5 shows the results. In addition to the person-level demographic variables gender, age, and work context, we included the partner's sleep quality (Level 1) as control variable in Model 1. Model 1 showed a significant improvement over the null model ($\Delta - 2$ x log $= 77.047$, $df = 5$, $p < .001$). Partner's sleep quality and working in academia were positive predictors of the partner's anticipated work engagement. Compared to Model 1, Model 2 showed further improvement ($\Delta - 2$ x log $= 5.684$, $df = 1$, $p < .05$). Partner's day-

specific self-esteem at bedtime significantly predicted his or her anticipated work

engagement the next morning - over and above how well the partner assessed the previous

night's sleep quality. Thus, data supported Hypothesis 6.

Table 2.5

Multilevel Estimates for Models Predicting Partner's Day-specific Anticipated Work Engagement

Variable	Null model			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	3.271	0.050	66.030 ***	3.137	0.175	17.889 ***	3.137	0.175	17.888 ***
Gender				-0.012	0.085	-0.138	-0.012	0.085	-0.138
Age				-0.001	0.008	-0.139	-0.001	0.008	-0.139
Work Context				0.117	0.095	1.233	0.117	0.095	1.233
General Self-esteem				0.426	0.070	6.075 ***	0.426	0.070	6.076 ***
Sleep Quality				0.193	0.030	6.451 ***	0.191	0.030	6.393 ***
Day-specific Self-esteem (Bedtime)							0.206	0.086	2.392 *
- 2 x log		1292.100			1215.952			1210.269	
Δ – 2 x log					77.047 ***			5.684 *	
df					5			1	
Level 1 Variance *(SE)*		0.253 (0.017)			0.231 (0.016)			0.228 (0.015)	
Level 2 Variance *(SE)*		0.326 (0.058)			0.268 (0.048)			0.269 (0.048)	
Level 3 Variance *(SE)*		0.045 (0.045)			0.036 (0.038)			0.036 (0.038)	

* $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

In this study, we examined sources and consequences of day-specific self-esteem as well as the daily crossover of self-esteem between partners in romantic relationships. First, we showed that on days when people show high job performance, they also experience higher day-specific self-esteem. In a further step, we showed that people's perceived state self-esteem also crosses over to their partner at home - particularly if the partner is low in general self-esteem and generally high in empathic concern. Finally, we found that when participants had experienced high self-esteem at bedtime, they also showed higher anticipated work engagement the next morning.

The positive relation between people's day-specific job performance and their day-specific self-esteem is consistent with previous between-person research (Judge & Bono, 2001). This research showed that people's general level of self-esteem and their global job performance perceptions are mutually related. Going beyond this between-person research, our study indicates that people's self-esteem is not necessarily stable or only affected by long-term processes, but also - to a certain degree - fluctuates on a daily basis. Even after controlling for the general level of self-esteem, day-specific job performance predicted state self-esteem. Thus, positive self-evaluations may not be purely stable, but rather can be affected by a person's day-to-day experiences.

The crossover of day-specific self-esteem within working couples is in line with research on the work-to-family interface (Edwards & Rothbard, 2000) according to which a person's workplace experiences do not only affect the work domain but also spill over to the home domain, where they can affect intimate others. Furthermore, according to McFarland et al. (2001), observing an intimate other being successful can lead to so-called assimilation affects within couples. In line with these findings, our data suggest that people carry their day-specific self-esteem perceptions home, thereby affecting the other partner through

crossover processes. We could additionally show that this daily crossover of self-esteem especially took place when two conditions were met. First, there was a positive crossover when the partner had a general level of self-esteem that was rather *low*. Possibly, people who are low in general self-esteem are more easily influenced by external sources than people who generally exhibit a higher level of self-esteem (Crocker & Wolfe, 2001). Second, day-specific self-esteem was transmitted when the partner had a generally *high* level of empathic concern. This finding goes in line with the idea that the crossover process is a direct empathic reaction (Westman, 2001). Thus, day-specific changes in self-esteem seem to be particularly contagious for the partner if the partner is sensitive enough to realize these changes. By testing moderated indirect effects, we could show that the job performance perceived by one partner after work indirectly related to the other partner's day-specific self-esteem in the evening when the other partner was low in general self-esteem and high in empathic concern.

Limitations and Future Research

The present study has some limitations. The first limitation is that our data exclusively relied on self-reports, which carries the risk of common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Thus, adding performance ratings by peers or supervisors would be a reasonable extension to the present study. However, by measuring the data mostly at different measurement occasions, we tried to minimize common method bias. We measured the actor's job performance and self-esteem after work, the partner's self-esteem at bedtime, and the partner's anticipated work engagement the next morning. Also, the crossover process was measured by asking both partners to rate their day-specific self-esteem independently. Thus, bias due to same source can be ruled out, at least for this part.

A second limitation of our study concerns the construct of anticipated work engagement, which is novel in work-engagement research. Although some research has

already shown that anticipated workday appraisals are strongly related to performance ratings after work (Grawitch, et al., 2008), we cannot make definite inferences about end-of-workday engagement ratings. One avenue of future research should therefore be to examine the relation between anticipated work engagement in the morning and the experiences made later during the day.

Finally, the present study did not assess the mechanisms underlying the crossover of self-esteem. According to crossover research, three different explanations for crossover processes can be considered (Westman, 2001): crossover as a direct empathic process, crossover due to common stressors, and crossover as an indirect process. The moderating role of empathic concern supports the notion that crossover of self-esteem is partly due to a direct empathic reaction. However, the explanations suggested by Westman (2001) are not mutually exclusive. The crossover of day-specific self-esteem could therefore additionally be a result of social comparison processes between partners that have been found to occur on a daily basis (Pinkus, et al., 2008). However, until now, relatively little is known about antecedents and consequences of daily social comparisons in romantic relationships. One promising avenue for future research could therefore be to gain more insight into social comparison processes within romantic relationships (e.g., by testing how much daily interaction is needed to cause self-esteem crossover). Furthermore, McFarland et al. (2001) suggested that assimilation effects in romantic relationships occur because of the closeness both partners experience in so-called identity relationships. Therefore, it would be interesting to investigate if the degree of closeness both partners experience might influence the result of social comparison processes.

Implications for Practice

The results of the present study suggest two important implications. First, we showed

that self-esteem is not only a stable person-level construct but can also be affected by day-to-day experiences. Self-esteem is important for a multitude of positive performance-related outcomes, such as job performance and job satisfaction (Pierce & Gardner, 2004). In line with this, our results show that day-specific self-esteem at bedtime is associated with anticipated work engagement the next morning. One important goal for supervisors should therefore be to foster employees' daily self-esteem perceptions. In this context, positive performance feedback on a regular basis seems to be a promising means, as it has been found to have salutary effects on state self-esteem (Crocker, et al., 2003). Our results point in a similar direction, as we found a positive association between people's daily job performance perceptions and their state self-esteem. Fostering employees' self-esteem perceptions could then, in turn, lead to improved job performance and work engagement in the sense of an "upward spiral" (see Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a), and therefore be equally beneficial for both employees and organizations.

Second, our study contributes to research on positive crossover processes and stresses the importance of the interplay between work and family (Edwards & Rothbard, 2000). Thus, when searching for reasons for an individual's day-specific working behavior, the home domain should not be neglected. Our study shows that one source of employees' personal resources may lie in their partners. By crossover processes, people seem to be able to benefit from their partners' self-esteem, resulting in higher anticipated work engagement the next day. This finding supports the notion that work and family do not necessarily have to be conflicting domains, but can also be mutually enriching (Greenhaus & Powell, 2006). However, before drawing practical implications from our results, it is important to consider that the crossover of self-esteem also carries risks: Low self-esteem perceptions can also be transmitted between partners. Thus, given the increasing number of dual-earner couples in Western societies (Ilies, et al., 2007), those couples should be aware of both the opportunities

and risks of self-esteem crossover processes. By fostering the consciousness of self-esteem transmission processes, working couples could ideally be supported to admit favorable crossover processes and avoid unfavorable ones.

STUDY 2

THE CROSSOVER OF SELF-ESTEEM: A LONGITUDINAL PERSPECTIVE

Summary

This longitudinal study examined the crossover of self-esteem within working couples. We focused on the long-term crossover process as well as its work-related antecedents and consequences. We proposed that a person's work engagement should predict this person's self-esteem. In addition, we hypothesized that one partner's (the 'actor's') self-esteem relates to changes in the other partner's (the 'partner's') self-esteem over time, especially if the partner has a low level of general self-esteem. In a final step, we expected that the partner's self-esteem in turn predicts the partner's work engagement. Using a longitudinal study (time lag: six months) among 294 working couples, we tested our hypotheses with multilevel analyses using the Actor-Partner Interdependence Model. We found that the actor's work engagement was related to the actor's self-esteem at Time 1. The actor's self-esteem at Time 1 did not directly relate to the partner's self-esteem at Time 2. However, as expected, we found a significant moderation of the partner's general self-esteem in the crossover process, confirming that especially people with a rather low level of general self-esteem are susceptible to self-esteem crossover. Finally, the partner's self-esteem related to the partner's work engagement at Time 2.

Introduction

During the past decades, the interplay between a person's work and family life has gained increased research interest (Bianchi & Milkie, 2010; Eby, et al., 2005). Both life domains seem to be mutually intertwined as experiences made at work are carried home and vice versa (Ford, Heinen, & Langkamer, 2007; Grzywacz & Marks, 2000). Furthermore, experiences made at work do not only intraindividually affect a person's private life but can also, in a further step, affect this person's intimate partner via crossover processes (Bolger, et al., 1989). Crossover is a dyadic, interindividual transmission of psychological states between closely related people, for example between partners in intimate relationships (Westman, 2001). Past research demonstrates crossover effects for a number of positive as well as negative psychological states, such as stress, engagement, and burnout (Bakker & Demerouti, 2009; Bakker, Demerouti, & Schaufeli, 2005; Westman, 2001; Westman, Etzion, & Danon, 2001), bringing along important implications for the increasing number of dual-earner couples in Western societies. However, apart from some studies examining short-term crossover processes on a daily basis (Song, et al., 2008; Song, et al., 2010), most crossover studies have examined crossover effects with cross-sectional designs (Bakker, et al., 2009). The limitations of these cross-sectional approaches call for longitudinal studies in order to better understand how partners' levels of a specific psychological state actually converge over time. Thus, in our study, we examine crossover from a longitudinal perspective. We thereby focus on the crossover of self-esteem - an affective-motivational self-evaluation that has been shown to be a crucial determinant of employees' positive working behavior (Pierce & Gardner, 2004).

Specifically, we propose that self-esteem should be transmitted between partners in dual-earner relationships over time. Although existing research hints to a convergence of partners' levels of self-esteem over time (Schafer & Keith, 1992), to the best of our knowledge, this assumption has not been tested with a longitudinal design.

Furthermore, we examine factors that might facilitate the crossover of self-esteem. We argue that the effect of one partner's self-esteem on the other partner depends on the other partner's general level of self-esteem. We base this proposition on self-esteem research that holds that people's interpersonal focus as well as the domain on which people base their self-esteem depends on their general level of self-esteem (Crocker & Wolfe, 2001; Vohs & Heatherton, 2001).

Finally, we also want to test work-related antecedents and consequences of the crossover process. We take a closer look at work engagement and pose that work engagement can be both an antecedent and a consequence of individuals' self-esteem (Xanthopoulou, et al., 2009a) (see Figure 3.1). During the past decades, the construct of work engagement has gained increased interest as engaged employees have been found to show improved performance as well as more personal initiative at work (Salanova, et al., 2005; Sonnentag, 2003; Xanthopoulou, et al., 2009b). By examining work engagement both as an antecedent and as a consequence of a person's self-esteem we want to help to further clarify the role of work engagement in employees' working lives.
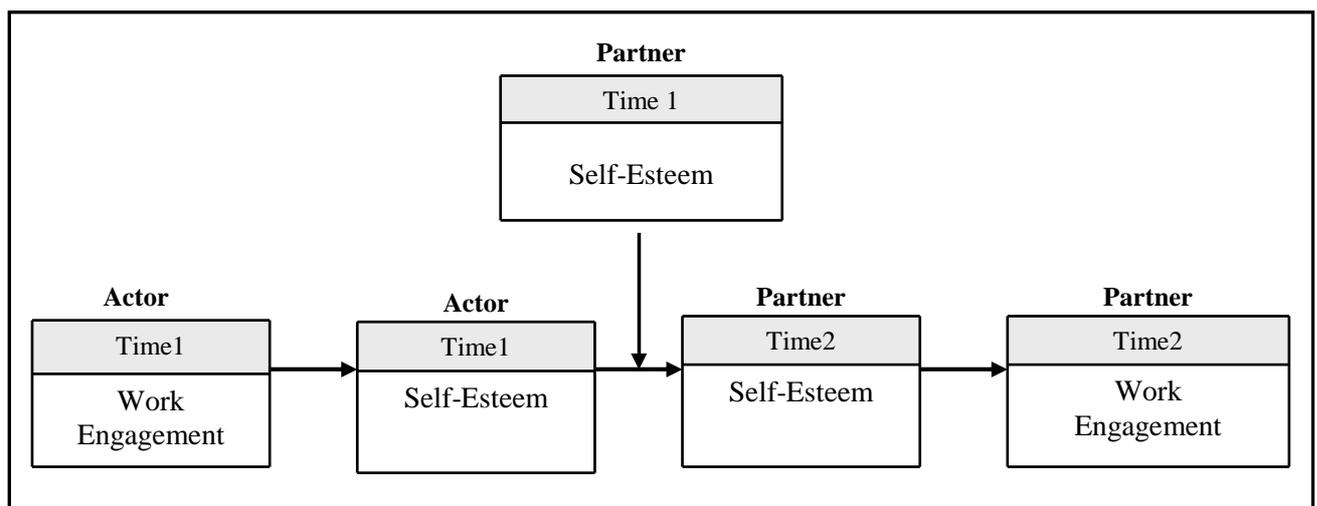

Figure 3.1. Model proposed in our study

Hence, the contribution of our study is threefold. First, as self-esteem is a central self-evaluation in the work context predicting numerous positive work-related outcomes (Pierce & Gardner, 2004), it is imperative to gain better insight in how employees' self-esteem perceptions actually develop over time. In our study, we want to shed further light on both work- and non-work-related correlates of individuals' self-esteem perceptions. On the one hand, concerning the non-work domain, we examine if one partner's self-esteem actually relates to changes in the other partner's self-esteem. On the other hand, we investigate work-related antecedents of self-esteem by examining its intraindividual associations with employees' work engagement.

Second, examining the crossover of self-esteem - an idea new to crossover research - adds to research on positive crossover processes. Crossover was originally conceptualized as the transmission of stress and strain (Bolger, et al., 1989; Westman, 2001) covering only the risks of crossover processes. Only recently, research has begun to investigate chances of positive crossover processes (Bakker, et al., 2009; Westman, Brough, & Kalliath, 2009). By examining the crossover of self-esteem - a positive affective-motivational self-evaluation - we want to contribute to this positive crossover perspective. As mentioned earlier, self-esteem is a central predictor of various positive work-related outcomes (Pierce & Gardner, 2004). Thus, finding that variations in employees' self-esteem can also be caused by crossover processes, adds importantly to existing knowledge on the development of individuals' self-esteem.

The third contribution of our study concerns its longitudinal design. As Bakker et al. (2009) note, studies on crossover processes have mostly used cross-sectional designs. This way, alternative explanations cannot be ruled out completely. Accordingly, Westman (2001) proposed that crossover processes can be spurious. For example, because partners often share common stressors and resources the similarity between partners can be caused by third variables. Furthermore, literature on assortative mating (Gonzaga, et al., 2007; Tambs &

Moum, 1992) suggests that people, right from the beginning, prefer romantic partners that are similar to themselves in multiple aspects (e.g., personality, values, and behavior). However, by conducting cross-sectional studies, one cannot fully rule out this original similarity of both partners as an alternative explanation. Thus, in our longitudinal study, we want to overcome this shortcoming by investigating how the actor's self-esteem can predict changes in the partner's self-esteem over time.

Antecedents of Self-Esteem Crossover: The Intraindividual Relation between Work Engagement and Self-Esteem

Work engagement is defined as a "positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p. 295). It is not solely seen as a consequence of a person's positive self-evaluations. In fact, Xanthopoulou et al. (2009a) showed positive reciprocal relationships between work engagement and organizational-based self-esteem over an 18-months period. Thus, we pose that being engaged at work can strengthen a person's self-esteem and thus can also function as an antecedent of a person's self-esteem perceptions. We base that proposition on two complementary explanations.

First, capitalization, that is "the process of beneficially interpreting positive events" (Langston, 1994, p. 1112) might underlie the positive relation between work engagement and self-esteem. Capitalizing positive events (e.g., by talking about them with others) can lead to positive affect that goes beyond the affect originally caused by the event itself (Gable, Reis, Impett, & Asher, 2004). Gable et al. (2004) argue that capitalization can even strengthen a person's personal resources like self-esteem. Accordingly, Nezlek and Plesko (2001) showed that, on a daily basis, positive events were related to participants' increased self-esteem. Thus,

the positive experience of being engaged at work should foster individuals' self-esteem, as well.

Second, we assume that work engagement additionally relates to a person's self-esteem through this person's perception of his or her own performance. Work engagement is a central predictor of various performance-related outcomes (Salanova, et al., 2005; Xanthopoulou, et al., 2009b). The perception of one's own high performance and that one successfully achieved work-related goals positively relate to self-esteem (Crocker, et al., 2003; Heatherton & Polivy, 1991). Thus, as engaged people are more likely to perform better, work engagement should in turn predict a person's self-esteem.

Taken together, we propose a positive association between a person's work engagement and this person's self-esteem at Time 1.

Hypothesis 1: A person's work engagement at Time 1 is positively related to this person's self-esteem at Time 1.

The Crossover of Self-Esteem

According to crossover research, psychological states like stress, strain, and engagement can be transmitted between partners in romantic relationships (Bakker & Demerouti, 2009; Westman, 2001; Westman, et al., 2001). Crossover processes have been conceptualized both as short-term processes occurring on daily basis (Song, et al., 2008; Song, et al., 2010) and as phenomena that develop over longer periods of time (Westman & Vinokur, 1998). In our study, we aim to contribute to literature on long-term crossover processes and propose that partners in relationships converge in their levels of self-esteem over time. Although there seems to be a substantial rank-order stability of self-esteem over the lifespan (Trzesniewski, Donnellan, & Robins, 2003), self-esteem has nevertheless been shown to vary intraindividually due to situational factors (Heatherton & Polivy, 1991). But why

should one partner's self-esteem affect the other partner over time? According to Aron et al. (2005) and their self-expansion theory, people within close relationships include their partner in their own self. This means that they, to some degree, incorporate their partner's resources, perspectives, and identities. In line with these assumptions, Aron et al. (2005) propose that "the evaluative and affective responses to an other's acquisition and loss of resources […] are to some extent the same as if the acquisition or loss was with regard to one's own resources" (Aron, et al., 2005, p. 210). Also, McFarland et al. (2001) examined participants' perception and reaction to a success of a target person. Participants imagining the success of their spousal or romantic partner resulted in increased positive self-oriented affect and even marginally improved self-evaluations. McFarland et al. (2001) argued that spousal or romantic relationships are typical identity relationships in which one includes the other partner in the self. Therefore, the success of this very close other leads to assimilation effects as "the target's success or failure is experienced as the participants' own" (McFarland, et al., 2001, p. 563). In earlier research, Pelham and Wachsmuth (1995) showed that an assimilation of self-evaluations among college roommates was more likely to occur over time when their relationship was close. Also, Schafer and Keith (1992) assumed that self-esteem like values, attitudes, and beliefs converge as couples' relationships develop due to a cognitive interdependence between partners. These authors found a convergence of partners' self-esteem both in self- and in partner-rated self-esteem evaluations over the different stages of couples' relationships. To conclude, we propose that the perception of one partner's (the 'actor's') self-esteem should lead to an assimilation of the other partner's (the 'partner's') self-esteem, i.e., we hypothesize a crossover of self-esteem over time.

Hypothesis 2: The actor's self-esteem at Time 1 is positively related to the partner's self-esteem at Time 2.

The Moderating Role of Partner's General Self-Esteem in the Crossover Process

Beside the main effect of self-esteem crossover, we examine circumstances that might facilitate the crossover of self-esteem. Based on theory and research on the contingencies of self-esteem and differences in individuals' contents of self-construal, we assume the partner's general level of self-esteem to be of particular importance. Specifically, we pose that people low in general self-esteem should be more susceptible to self-esteem crossover.

On the one hand, people differ with respect to the domain on which they stake their self-esteem, i.e. have different contingencies of self-esteem (Crocker & Wolfe, 2001). Whereas some people more strongly base their self-esteem on internal sources like their own accomplishments, other people are more strongly affected by external sources. Hereby, the general level of self-esteem is one central predictor with people low in general self-esteem more strongly relying on external sources. In fact, Crocker and Wolfe (2001) showed that people low in general self-esteem tended to base their self-esteem on the attitudes or behavior of other people. By contrast, people high in general self-esteem more strongly relied on their own accomplishments. Thus, we propose that whereas people high in general self-esteem should mainly base their self-esteem on their own accomplishments and work-related behavior, people with low general self-esteem should more strongly be affected by external sources, i.e. their working partners' self-esteem.

On the other hand, people's general level of self-esteem also affects their way of self-construal (Vohs & Heatherton, 2001). Thus, the general level of self-esteem alters the way people see themselves with respect to others, i.e. moderates their interpersonal focus. People low in general self-esteem thereby have been shown to focus more strongly on their connectedness with others (especially after a threat to the self, see Vohs & Heatherton, 2001). Accordingly, Aberson (1999) found people low in general self-esteem to use "basking in

reflected glory" of successful others more than people with high general self-esteem as a means of self-enhancement.

Taken together, we hypothesize partners' general level of self-esteem (measured at Time 1) to moderate the crossover of self-esteem over time. We thereby assume that people low in general self-esteem should be more easily affected by their partners' self-esteem. By contrast, people with a rather high level of general self-esteem should not be affected by their partners' self-esteem.

Hypothesis 3: The partner's general level of self-esteem moderates the crossover of self-esteem. There is a positive crossover effect for a partner low in general self-esteem. There is no crossover effect for a partner with a high level of general self-esteem.

Consequences of Self-Esteem Crossover: The Intraindividual Relation between Self-Esteem and Work Engagement

In a last step, we address possible work-related consequences of the crossover process. As self-esteem has been shown to predict performance-related outcomes (Pierce & Gardner, 2004), the crossover of self-esteem should in turn result in the partners' altered working behavior. The explanation for self-esteem predicting performance-related outcomes is drawn from the assumption that people with high self-esteem are motivated to perform well in order to behave in a way that is consistent with their high self-evaluations (e.g., Korman, 1970). In our study we once again focused on work engagement - this time as a central work-related consequence of employees' self-esteem. More specifically, we hypothesized that the partner's level of self-esteem should be positively related to the partner's work engagement. In line with this assumption, Xanthopoulou et al. (2009a) showed organizational-based self-esteem to predict participants' work engagement.

Hypothesis 4: A person's self-esteem at Time 2 is positively related to this person's work engagement at Time 2.

Indirect Effects in the Crossover Process

Taken together, our hypotheses delineate how the actor's work engagement can affect the actor's self-esteem that, in a second step, can cross over to the partner - especially if the partner is low in general self-esteem. Furthermore, we describe how the crossover of self-esteem can in turn affect the partner's work engagement. Thus, our hypotheses propose two indirect effects that should be moderated by the partner's general level of self-esteem (i.e., moderated indirect effects). First, the actor's work engagement should indirectly relate to the partner's self-esteem via the crossover of self-esteem, especially if the partner is low in general self-esteem. Second, the actor's self-esteem should indirectly relate to the partner's work engagement via self-esteem crossover, especially if the partner is low in general self-esteem.

Hypothesis 5a: The actor's work engagement at Time 1 is indirectly related to the partner's self-esteem at Time 2 via the actor's self-esteem at Time 1 if the partner is low in general self-esteem. There is no indirect effect if the partner is high in general self-esteem.

Hypothesis 5b: The actor's self-esteem at Time 1 is indirectly related to the partner's work engagement at Time 2 via the partner's self-esteem at Time 2 if the partner is low in general self-esteem. There is no indirect effect if the partner is high in general self-esteem.

Method

Procedure and Sample

We recruited our participants by contacting men and women working in academia at German universities. Contact information was retrieved from the institutions' websites. We

approached academic staff working at the postdoctoral hierarchical level and asked if they lived in a relationship with a partner who also had a professional job. If the answer was positive, we asked both partners to participate in our study. A total of 746 couples agreed to participate in our study at Time 1.

In the course of our longitudinal study, both partners independently filled in three questionnaires within six months - two questionnaires at Time 1 and the third questionnaire after six months. The first questionnaire was a short online questionnaire that asked core demographic variables. In the following week, both partners received a link to a second online questionnaire that contained the study variables (Time 1 measurement). After six months, if the couple had filled in the first two questionnaires completely, both partners were sent a link to a third online questionnaire in which we asked about possible changes in participants' private or occupational situation and again measured the core study variables (Time 2 measurement). Of the 746 couples who had first agreed to participate in our study, 657 couples (88.07%) had filled in the first, demographic questionnaire completely. Furthermore, after the second questionnaire at Time 1, there remained 536 couples (71.85% out of the 657 couples that had filled in the first questionnaire completely) in which both partners had also completed the second questionnaire at Time 1. Finally, at Time 2, 346 couples (64.55% out of the 536 couples that had filled in the both questionnaires at Time 1 completely) also had filled in the third questionnaire completely. Of this final sample we excluded all couples in which at least one partner was currently unemployed (15 couples) or at full-time parental leave (22 couples) at Time 2 because these experiences might strongly affect perceptions of self-esteem and work engagement. Furthermore, we also excluded three couples from our analyses that stated that they had broken up during the six months between Time 1 and Time 2. To keep our sample homogenous, we furthermore excluded 12 couples in which the partner working in

academia had not yet received a doctoral degree and therefore was not working at the

postdoctoral hierarchical level.

Thus, in the end, our final sample consisted of 294 couples (588 participants) with 289

couples being heterosexual and five couples being homosexual. The average length of

couples' relationships was 11.8 years ($SD = 7.87$), with 65.3% being married and 46.3%

having children ($M = 1.84$, $SD = 0.79$). In addition, 91.8% of our participants shared a

common household with their partner. Participants' average age was 38.71 years ($SD = 7.19$).

In total, 394 participants worked in academia and 194 participants had other professional jobs

outside academia. As intended, at least one partner within all of the couples of our final

sample worked in academia and had a doctoral degree. About one third of our sample (34.4%)

lived in a relationship in which both partners were working in academia. In most of these

couples, both partners held a doctoral degree. Only 8.4% of our participants (partners of the

postdoctoral fellows we had contacted) worked in academia and had not yet gained a doctoral

degree. Most of our participants working in academia also had full time contracts (77.9%)

with an average contractual working time of 36.12 hours per week ($SD = 8.37$). Additionally,

our participants working in academia reported that they had an actual average working time of

45.72 hours ($SD = 10.71$).

Of the 194 participants who did not work in academia, the vast majority was very well

educated with 89.7% having finished university or technical college. They mostly worked as

employees in private organizations or in the civil service (87.1%). The participants not

working in academia had an average contractual working time of 33.36 hours per week ($SD =$

9.22), but stated that they actually worked 40.92 hours per week on average ($SD = 11.81$).

Furthermore, 29.9% of them held a supervisory position.

To control for potential nonresponse bias, we tested if our final sample differed from

the couples that had dropped out in the course of our study. First, we compared the

participants of our final sample (N = 588 participants, N = 294 couples) with the participants that had filled in the first, demographic questionnaire completely but had dropped out later at various phases of the data collection process (N = 726 participants, N = 363 couples). We compared both groups with respect to demographic variables. Both groups did not differ in age, proportion of participants working in academia, proportion of couples in which both partners worked in academia, proportion of couples sharing a common household, and duration of the couples' relationships. However, fewer couples of the final sample had children compared to the couples that had dropped out in the course of our study (t (655) = -2.54, p = .011). By controlling for having children, we took account of this systematic drop-out in our following analyses. In a second step, we compared our final sample (N = 588 participants, N = 294 couples) with the participants that had filled in both questionnaires at Time 1 completely but had not completed the survey at Time 2 (N = 484 participants, N = 242 couples). We compared these two groups with respect to their self-esteem and work engagement at the first measurement occasion and found that both groups did not differ significantly neither in their extent of self-esteem nor in their extent of work engagement at Time 1.

Measures

Table 3.1 shows means, standard deviations, zero-order correlations, and Cronbach's alphas for all study variables.

Table 3.1

Means, Standard Deviations, and Correlations among the Study Variables

	Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Self-Esteem Actor (Time 1)	4.01	0.56	.76	_														
2	Self-Esteem Partner (Time1)	4.01	0.56	.76	.08	_													
3	Partner Self-Esteem Partner (Time 2)	3.96	0.58	.79	.10	.66	_												
4	Work Engagement Actor (Time 1)	3.45	0.61	.90	.33	.07	.08	_											
5	Work Engagement Partner (Time 1)	3.45	0.61	.90	.07	.33	.33	.10	_										
6	Work Engagement Partner (Time 2)	3.31	0.69	.92	.06	.26	.39	.08	.69	_									
7	Both Partners Academia [a]	0.34	0.48	_	-.06	-.06	-.09	.03	.03	.03	_								
8	Children [b]	1.54	0.50	_	-.09	-.09	-.14	-.11	-.11	-.09	.13	_							
9	Couple living together [c]	1.08	0.27	_	-.05	-.05	-.10	-.02	-.02	.00	.10	.23	_						
10	Length of Relationship	11.79	7.87	_	.12	.12	.17	.12	.12	.10	-.25	-.49	-.28	_					
11	Gender Actor [d]	1.50	0.50	_	.14	-.13	-.08	-.03	.03	.03	.00	-.00	.01	-.00	_				
12	Gender Partner [e]	1.50	0.50	_	-.13	.14	.10	.03	-.03	-.02	.00	-.00	.01	-.00	-.97	_			
13	Age Actor	38.71	7.19	_	.17	.08	.14	.05	.05	.04	-.14	-.47	-.15	.64	.19	-.19	_		
14	Age Partner	38.71	7.19	_	.08	.17	.18	.05	.05	.04	-.14	-.47	-.15	.64	-.19	.19	.77	_	
15	Work Context Actor [f]	1.33	.47	_	.05	.01	.05	-.14	.10	.06	-.51	-.06	-.05	.12	-.05	.05	.08	.07	_
16	Work Context Partner [g]	1.33	.47	_	.01	.05	.05	.10	-.14	-.08	-.51	-.06	-.05	.12	.05	-.05	.07	.08	-.48

Note. Correlations below the diagonal are person-level correlations ($N = 588$) with correlations $r \geq .08$ being significant at $p < .05$ and $r \geq .11$ being significant at $p < .01$. [a] 0 = only one partner working in academia; 1 = both partners in academia. [b] 0 = no children; 1 = children. [c] 1 = couple living together; 2 = couple not living together. [d] 1 = female; 2 = male. [e] 1 = female; 2 = male. [f] 1 = working in academia; 2 = not working in academia. [g] 1 = working in academia; 2 = not working in academia

Study variables.

Self-esteem at Time 1 and Time 2 was measured with five items from the performance subscale of Heatherton and Polivy's (1991) self-esteem scale (e.g., "I feel confident about my abilities"). At Time 1, to gain a general measure of self-esteem, we instructed participants to rate on a five-point Likert scale how they "generally" felt about themselves. Cronbach's α of self-esteem at Time 1 was .76. By contrast, at Time 2, we instructed participants to assess on a five-point Likert scale how they "currently" felt about themselves. Cronbach's α of self-esteem at Time 2 was .79.

Work engagement at Time 1 and Time 2 was measured with the nine 5-point Likert items from the short version of the Utrecht Work Engagement Scale (Schaufeli, et al., 2006; e.g., "At work, I feel strong and vigorous."). Again, to gain a general measure of participants' work engagement at Time 1, we asked participants to assess how they experience their work "in general". Cronbach's α for work engagement at Time 1 was .90. Furthermore, at Time 2, we again asked participants to assess how they "currently" experience their work. Cronbach's α for work engagement at Time 2 was .92.

Control variables.

At the person level, we controlled for the core demographic variables age and gender (1 = female; 2 = male). Furthermore, because at least one partner in our sample worked in academia, we controlled for participants' work context (1 = working in academia; 2 = not working in academia) to rule out contamination of our results caused by our participants occupational background.

At the couple level, we controlled for parenthood (0 = no children; 1 = children) as core relationship variable. Furthermore, as we assumed that the longer the couples' relationships the more likely it would be that both partners had already converged in their

general level of self-esteem, we controlled for the length of the couples' relationships (in years). Also, as couples living together might more easily affect each other through frequent interaction, we controlled if the couple lived together or had separate households. Additionally, as there was a substantial percentage of couples in which both partners worked in academia (34.4%) and therefore shared a similar occupational background, we controlled for the similarity of the couples' occupational background (0 = not both partners in academia; 1 = both partners in academia).

Construct Validity

At Time 1, we measured the actor's work engagement and the actor's self-esteem. Thus, to ensure that both measures constituted different constructs, we conducted multilevel confirmatory factor analyses (CFAs) with Mplus. CFA results supported the superiority of the two-factor solution ($\chi^2 = 224.954$, $df = 68$, RMSEA = 0.063, CFI = .944) compared to the one-factor solution (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 47.206$, $\Delta df = 3$, $p < .001$).

Similarly, as the partner's self-esteem and the partner's work engagement were both measured at Time 2 we conducted the same set of analyses at Time 2. Again, CFA results confirmed a better model fit of the two-factor solution ($\chi^2 = 266.496$, $df = 68$, RMSEA = 0.070, CFI = .946) compared to the one-factor solution (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 92.249$, $\Delta df = 3$, $p < .001$).[2]

Data Analysis

Because partners within romantic relationships share a lot of common experiences and mutually influence each other by interacting on a regular basis, the measurements of these

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[2] As Heatherton and Polivy's (1991) self-esteem scale contains positively as well as negatively worded items we added a negative and positive method factor to the general self-esteem factor in our confirmatory factor analyses. This has been found to improve the model fit in measures of self-esteem (Quilty, Oakman, & Risko, 2006).

persons are non-independent. To give consideration to this dyadic data structure, we applied the Actor-Partner Interdependence Model (APIM; Kenny, et al., 2006) to analyze our data. In the APIM, partners are included both as the actor and as the partner in the analyses. This way, one can both analyze intraindividual effects (actor effects) as well as interindividual effects (partner effects) within a couple. Partner effects describe reciprocal effects, i.e., in our study the crossover of Partner A on Partner B and vice versa. We analyzed our data applying two-level hierarchical linear modeling (Bryk & Raudenbush, 1992) with persons being nested in couples. For data analysis we used the HLM 6 software package (Raudenbush, et al., 2004). We centered all person-level as well as couple-level predictor and control variables at their respective grand mean.

Results

Preliminary Analyses

In a first step, to determine the amount of variability of the study variables at the person and at the couple level, we calculated intraclass coefficients for self-esteem and work engagement at both measurement occasions with two-level intercept-only models. For work engagement at Time 1, the variance component at the person level was 0.337 ($SE = 0.028$) and the variance component at the couple level was 0.035 ($SE = 0.022$). Therefore, for Time 1 work engagement, 91% of the variance was attributable to between-person variations and 9% of variance was attributable to the couple level. Similarly, for Time 2 work engagement, 94% of variance was attributable to between-person variations and 6% of variance was attributable to between-couple variations (cf. null model in Table 3.4). Concerning Time 1 self-esteem, 92% of the variance was attributable to between-person variations and 8% of the variance was attributable to between-couple variations (cf. null model in Table 3.2). Finally, for Time 2 self-esteem, 85% of variance was attributable to the person level whereas 15% of variance

was attributable to between-couple variation (cf. null model in Table 3.3). Taken together, for all study variables, the greater proportion of variation was explained at the person level, with within-person variations ranging from 85% to 94% ($M = 90.5\%$). However, the between-couple variations of our study variables that reach up to 15% underline the importance of taking into account the dyadic structure of our data by applying the APIM.

Test of Hypotheses

              Antecedents of self-esteem crossover: The intraindividual relation between work engagement and self-esteem (Hypothesis 1).

          Hypothesis 1 stated that a person's work engagement at Time 1 predicts this person's self-esteem at the same measurement occasion. We analyzed the intraindividual relation between the actor's work engagement and the actor's self-esteem at Time 1. We compared three nested models: a null model, Model 1, and Model 2. In the null model, the intercept was included as the only predictor. In Model 1, we included the control variables. As this hypothesis addressed only intraindividual associations, we only controlled for variables at the person level. Specifically, we included the actor's gender, age, and work context as person-level control variables.[3] In a final step, in Model 2, we added the actor's work engagement at Time 1 as core predictor variable. To test model improvements, we compared the model fit of these nested models by calculating the difference between the likelihood ratio of one model and the likelihood ratio of the previous model. This difference follows a Chi-square distribution (with degrees of freedom being the number of variables added in each model). Table 3.2 displays the results. Model 1 (including the control variables) showed a significantly better model fit than the null model ($\Delta - 2 \times \log = 30.699$, $df = 3$, $p < .001$). Gender and age were positively related to the actor's self-esteem, with men having a generally

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[3] Results also stayed the same for all of our analyses without the control variables.

higher degree of self-esteem. Including work engagement as a predictor variable in Model 2 resulted in a significant improvement over Model 1 ($\Delta - 2$ x log $= 71.433$, $df = 1$, $p < .001$). The estimate of the actor's work engagement was highly significant.

To conclude, the actor's perceived work engagement at Time 1 predicted the actor's self-esteem at Time 1. Thus, data supported Hypothesis 1.

Table 3.2

Multilevel Estimates for Models Predicting Actor's Self-Esteem at Time 1

Variable	Null model			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	4.014	0.024	168.631 ***	3.740	0.097	38.715 ***	3.636	0.092	39.378 ***
Gender (Actor) [a]				0.135	0.044	3.062 **	0.153	0.042	3.647 **
Age (Actor)				0.011	0.003	3.388 **	0.009	0.003	3.014 **
Work Context (Actor) [b]				0.053	0.047	1.126	0.111	0.045	2.476 *
Work Engagement (Actor – Time 1)							0.306	0.035	8.726 ***
- 2 x log		977.580			946.882			875.449	
Δ – 2 x log					30.699 ***			71.433 ***	
df					3			1	
Level 1 Variance *(SE)*		0.286 (0.024)			0.271 (0.022)			0.246 (0.020)	
Level 2 Variance *(SE)*		0.023 (0.018)			0.025 (0.017)			0.016 (0.015)	

* *p* < .05; ** *p* < .01; *** *p* < .001. [a] 1 = female; 2 = male. [b] 1 = working in academia; 2 = not working in academia

The crossover of self-esteem (Hypothesis 2).

In Hypothesis 2, we proposed a main effect of the actor's self-esteem at Time 1 on the partner's self-esteem at Time 2. We again applied hierarchical linear modeling comparing three nested models to test this hypothesis. Because at this time, we tested interindividual effects between both partners, we included control variables both at the person and at the couple level in Model 1. At the person level, we included the partner's age, gender, and work context. At the couple level, we included if both partners were working in academia, if the couple had children, if the couple lived together and the length of the couple's relationship. In Model 2, the actor's self-esteem at Time 1 was included as core predictor variable. Furthermore, as we wanted to predict changes in the partner's self-esteem from Time 1 to Time 2, we also included the partner's level of self-esteem at Time 1. Results are depicted in Table 3.3.

Model 1 showed a significant improvement over the null model ($\Delta - 2$ x log $= 34.448$, $df = 7, p < .001$). Partner's gender was a positive predictor of the partner's self-esteem at Time 2 with men having a generally higher self-esteem at Time 2 than women.[4] Model 2, in which the actor's and the partner's self-esteem at Time 1 were included as predictor variables, showed a further improvement over Model 1 ($\Delta - 2$ x log $= 309.404$, $df = 2, p < .001$). The partner's self-esteem at Time 1 was a highly significant predictor for the partner's self-esteem at Time 2, indicating a substantial stability of self-esteem. However, after controlling for the partner's self-esteem at Time 1, the estimate of the actor's self-esteem at Time 1 was no significant predictor of the partner's self-esteem at Time 2. Thus, data did not support Hypothesis 2.

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[4] As men had a generally higher degree of self-esteem throughout our analyses, we tested gender as a possible moderator in the crossover process. Gender did not moderate neither the direct crossover nor the interaction between the actor's and the partner's general levels of self-esteem.

The moderating role of partner's general self-esteem in the crossover process (Hypothesis 3).

In the next set of analyses, we tested the moderating role of the partner's self-esteem at Time 1 in the crossover process. This time, we compared four models. We compared the same three models as when testing Hypothesis 2 but added in a fourth step the interaction between the actor's and the partner's self-esteem at Time 1 into analyses (Model 3 in Table 3.3). Including the interaction term in Model 3 resulted in an improvement over Model 2 ($\Delta – 2$ x $\log = 10.134$, *df* $= 1$, $p < .01$). The interaction term was a significant predictor of the partner's self-esteem at Time 2. In a further step, following the approach by Preacher et al. (2006), we probed the simple slopes of the significant interaction term. We used the values 1 *SD* above and below the sample mean of partner's self-esteem at Time 1. Results confirmed that when the partner's level of self-esteem at Time 1was low (1 *SD* below the mean), the actor's self-esteem at Time 1 was positively associated with the partner's self-esteem at Time 2 (estimate $= 0.15$; *SE* $= 0.05$; $z = 3.18$, $p < .01$). By contrast, when the partner's level of self-esteem at Time 1 was high (1 *SD* above the mean), the actor's self-esteem at Time 1 did not relate to the partner's self-esteem at Time 2 (estimate $= -0.07$; *SE* $= 0.05$; $z = -1.48$, *ns*). The interaction is illustrated in Figure 3.2. To sum up, data fully supported Hypothesis 3.

Table 3.3

Multilevel Estimates for Models Predicting Partner's Self-Esteem at Time 2

Variable	Null model			Model 1			Model 2			Model 3		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	3.961	0.026	153.837 ***	4.043	0.169	23.877 ***	4.152	0.130	31.872 ***	4.146	0.129	32.137 ***
Both Partner Academia [a]				-0.066	0.061	-1.097	-0.049	0.046	-1.075	-0.065	0.046	-1.420
Children [b]				-0.047	0.059	-0.802	-0.038	0.044	-0.855	-0.017	0.044	-0.381
Couple Living Together [c]				-0.126	0.095	-1.329	-0.096	0.071	-1.347	-0.108	0.070	-1.548
Length of Relationship				0.003	0.004	0.747	0.002	0.003	0.663	0.002	0.003	0.726
Gender (Partner) [d]				0.094	0.046	2.050 *	0.008	0.037	0.226	0.007	0.037	0.189
Age (Partner)				0.008	0.005	1.780	0.002	0.004	0.565	0.003	0.004	0.792
Work Context (Partner) [e]				0.006	0.054	0.110	-0.019	0.043	-0.450	-0.020	0.043	-0.465
Self-Esteem (Partner – Time 1)							0.665	0.033	20.162***	0.664	0.033	20.277 ***
Self-Esteem (Actor – Time 1)							0.041	0.033	1.239	0.040	0.033	1.215
Self-Esteem (Actor – Time 1) x Self-Esteem (Partner – Time 1)										-0.196	0.061	-3.212 **
- 2 x log		1027.475			993.027			683.622			673.489	
Δ – 2 x log					34.448 ***			309.404 ***			10.134 **	
df					7			2			1	
Level 1 Variance *(SE)*		0.290 (0.024)			0.283 (0.023)			0.175 (0.014)			0.176 (0.015)	
Level 2 Variance *(SE)*		0.050 (0.020)			0.039 (0.019)			0.013 (0.011)			0.010 (0.011)	

* $p < .05$. ** $p < .01$. *** $p < .001$. [a] 0 = only one partner working in academia; 1 = both partners in academia. [b] 0 = no children; 1 = children. [c] 1 = couple living together; 2 = couple not living together. [d] 1 = female; 2 = male. [e] 1 = working in academia; 2 = not working in academia
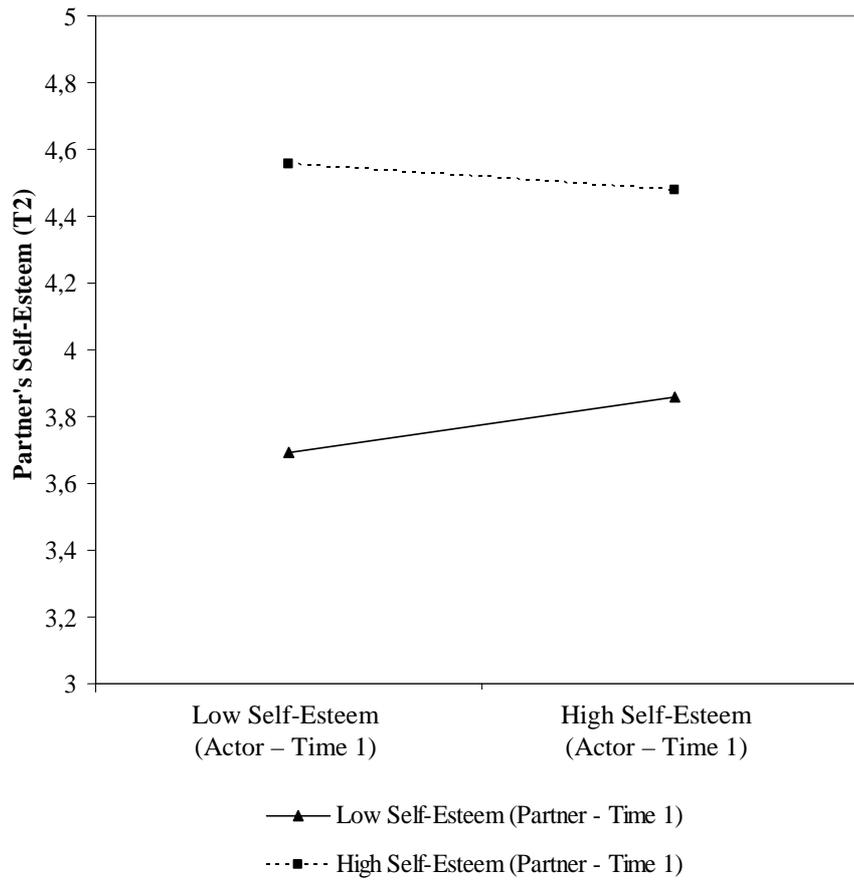
Figure 3.2. Interaction effect of the actor's self-esteem at Time 1 and the partner's self-esteem at Time 1 on the partner's self-esteem at Time 2.

Consequences of self-esteem crossover: The intraindividual relation between self-esteem and work engagement (Hypothesis 4).

Hypothesis 4 stated that a person's self-esteem at Time 2 is positively related to this person's work engagement at Time 2. To test this hypothesis, we again applied hierarchical linear modeling comparing three nested models: the null model, Model1 that included the control variables, and Model 2 with partner's self-esteem at Time 2 as a core predictor variable. Results are depicted in Table 3.4. As this hypothesis again only dealt with the intraindividual association between the partner's self-esteem and the partner's work engagement at Time 2, we only controlled for the person-level control variables. In addition to partner's gender, age, and work context, we controlled for partner's work engagement at Time 1 to predict changes in work engagement over time. Model 1 showed a significant improvement over the null model ($\Delta - 2$ x log $= 383.958$, $df = 4$, $p < .001$). Partner's work engagement at Time 1 was positively related to partner's work engagement at Time 2. Model 2 showed further improvement over Model 1 ($\Delta - 2$ x log $= 37.770$, $df = 1$, $p < .05$). Partner's self-esteem at Time 2 significantly predicted the partner's work engagement at Time 2 - even after controlling for partner's work engagement at Time 1. Thus, data supported Hypothesis 4.

Table 3.4

Multilevel Estimates for Models Predicting Partner's Work Engagement at Time 2

Variable	Null model			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	3.307	0.029	112.812 ***	3.300	0.092	35.893 ***	3.369	0.090	37.590 ***
Gender (Partner) [a]				-0.002	0.042	-0.041	-0.025	0.041	-0.623
Age (Partner)				0.000	0.003	0.156	-0.002	0.003	-0.776
Work Context (Partner) [b]				0.009	0.045	0.213	-0.015	0.043	-0.357
Work Engagement (Partner– Time1)				0.780	0.034	22.781 ***	0.705	0.035	19.999 ***
Self-Esteem (Partner – Time2)							0.233	0.037	6.250 ***
- 2 x log		1234.264			850.306			812.537	
Δ – 2 x log					383.958 ***			37.770 *	
df					4			1	
Level 1 Variance *(SE)*		0.452 (0.037)			0.249 (0.021)			0.233 (0.019)	
Level 2 Variance *(SE)*		0.027 (0.028)			0.001 (0.015)			0.002 (0.014)	

* $p < .05$; ** $p < .01$; *** $p < .001$. [a] 1 = female; 2 = male. [b] 1 = working in academia; 2 = not working in academia

Indirect effects in the crossover process (Hypothesis 5a and Hypothesis 5b).

*H*ypothesis 5a stated that the actor's work engagement at Time 1 should be indirectly related to the partner's self-esteem at Time 2 through the crossover of self-esteem if the partner is low in self-esteem at Time 1. Furthermore, in Hypothesis 5b we postulated that the actor's self-esteem at Time 1 should indirectly relate to the partner's work engagement at Time 2 via the partner's self-esteem at Time 2 if the partner is low in self-esteem at Time 1. According to Muller et al. (2005, p. 5), in a moderated mediation, "either the effect of the treatment on the mediator depends on the moderator […] or the partial effect of the mediator on the outcome depends on the moderator […], or both." As we did not assume a direct effect neither of actor's work engagement on partner's self-esteem nor of actor's self-esteem on partner's work engagement we therefore tested two different cases of moderated indirect effects (Mathieu & Taylor, 2006). Thus, for testing Hypothesis 5a the following two conditions had to be met: (a) the independent variable (actor's work engagement at Time 1) is associated with the presumed mediator variable (actor's self-esteem at Time 1), and (b) the mediator variable (actor's self-esteem at Time 1) is associated with the presumed dependent variable (partner's self-esteem at Time 2) when certain specifications of the moderator are met (partner's self-esteem at Time 1 is low). The tests of Hypothesis 1 and 3 had already supported these conditions. Furthermore, as expected, the actor's work engagement at Time 1 did not predict the partner's self-esteem at Time 2, after controlling for partner's self-esteem at Time 1 ($\gamma = .020$, $SE = .030$, $t = 0.652$, *ns*). As both conditions for a moderated indirect effect were met we tested the indirect effect with the Sobel *z* test. Specifically, we tested the indirect effect of the actor's work engagement at Time 1 on the partner's self-esteem at Time 2 through the interaction between actor's and the partner's self-esteem at Time 1 (Hypothesis 5a). Results of the Sobel *z* test ($t_a = 8.73$, $t_b = -3.20$, $z = 3.00$, $p < .01$) supported Hypothesis 5a. The actor's work engagement at Time 1 was indirectly related to the partner's self-esteem

at Time 2 through the crossover of self-esteem when the partner had a low level of self-esteem at Time 1.

In a similar vein, to test Hypothesis 5b and the work-engagement consequences of the crossover process, we tested the indirect effect of the interaction between the actor's and the partner's self-esteem at Time 1 on the partner's work engagement at Time 2 through the partner's self-esteem at Time 2. The tests of Hypotheses 3 and 4 had already supported the following two conditions for testing the moderated indirect effect: (a) the presumed independent variable (actor's self esteem at Time 1) is associated with the presumed mediator variable (partner's self-esteem at Time 2) when certain specifications of the moderator are met (partner's self-esteem at Time 1 is low), and (b) the presumed mediator (partner's self-esteem at Time 2) is associated with the presumed dependent variable (partner's work engagement at Time 2). Also, as predicted, the interaction between the actor's and the partner's self-esteem at Time 1 did not directly relate to the partner's work engagement at Time 2, after controlling for partner's work engagement at Time 1 ($\gamma = -.067$, $SE = .069$, $t = -0.964$, ns). To test the moderated indirect effect we again applied the Sobel z test ($t_a = -3.21$, $t_b = 6.55$, $z = 2.88$, $p < .01$) which supported Hypothesis 5b. Thus, the actor's self-esteem at Time 1 indirectly related to the partner's work engagement at Time 2 (after controlling for the partner's work engagement at Time 1) through the crossover of self-esteem if the partner was low in self-esteem at Time 1. Thus, Hypothesis 5a and Hypothesis 5b were fully supported.

Discussion

In the present longitudinal study we showed that the actor's self-esteem at Time 1 predicted changes in the partner's self-esteem if the partner had a low level of general self-esteem at Time 1. Furthermore, we demonstrated that work engagement can be both antecedent and consequence of a person's self-esteem. Specifically, we found that the actor's

work engagement positively related to the actor's self-esteem at Time 1 and that the partner's self-esteem was positively associated with the partner's work engagement at Time 2. Additionally, as proposed, the actor's work engagement at Time 1 was indirectly related to the partner's self-esteem at Time 2 via self-esteem crossover if the partner had a low level of general self-esteem. Similarly, the actor's self-esteem at Time 1 also indirectly related to the partner's work engagement at Time 2 through the crossover of self-esteem if the partner had a low level of general self-esteem.

In our study, we did not find a direct crossover of self-esteem within working couples. That means that the actor's self-esteem at Time 1 did not directly predict changes in the partner's self-esteem. This finding is contrary to our prediction that was built on self-expansion theory (Aron, et al., 2005) and the assumption that in the course of an intimate relationship, partners increasingly include their partners' resources, perspectives, and identities in their own self. One reason for this finding could be that self-esteem crossover might not apply to everyone the same way. There rather might be employees whose self-evaluations do not depend on those of their partners. In fact, as hypothesized, we showed that the partner's general level of self-esteem moderated the crossover process. Specifically, self-esteem crossover only took place if the partner had a low level of general self-esteem. By contrast, there was no crossover of self-esteem if the partner had a high level of self-esteem. This result is line with the assumption that people with low general self-esteem more strongly stake their self-esteem on external sources (Crocker & Wolfe, 2001) and have a stronger interdependent focus (Vohs & Heatherton, 2001). Thus, whereas high self-esteem employees might focus more on their own work-related behavior, employees with lower general self-esteem might tend to bask in the reflected glory of their working partners to enhance themselves (Aberson, 1999). To conclude, people low in general self-esteem seem to be more prone to self-esteem crossover.

A further reason for the lack of a direct crossover could lie in our study's relatively short time lag of six months. To the best of our knowledge, there are still no clear assumptions about how long it actually takes one partner to include the other partner in the self or to adapt the other partner's level of self-esteem. Future research should therefore try to shed more light on the time frame of self-esteem crossover. By examining the dyadic relation between both partners' self-esteem over several years one might find an overall crossover effect.

In a further step we showed that work engagement can be both antecedent and consequence of a person's self-esteem. In accordance with our proposition, we found that actor's work engagement was positively related to actor's self-esteem at Time 1 and that partner's self-esteem in turn predicted partner's work engagement at Time 2. These findings are in line with recent research that revealed an intraindividual reciprocal relation between work engagement and positive self-evaluations (Xanthopoulou, et al., 2009a). In this context, Xanthopoulou et al. (2009a) speak of a positive upward spiral in that work engagement predicts positive self-evaluations that in turn are positively related to work engagement. Our results extend these findings and can be interpreted as a first hint to an interindividual upward spiral. In fact, in line with our hypotheses, our results revealed two cases of moderated indirect effects. First, the actor's work engagement at Time 1 positively related to the partner's self-esteem at Time 2 via self-esteem crossover if the partner had a low level of general self-esteem. Second, the actor's self-esteem also indirectly related to the partner's work engagement at Time 2 through self-esteem crossover - again if the partner had a low level of general self-esteem. These results imply that there might not only exist an intraindividual reciprocal relation between a person's work engagement and this person's self-esteem. In fact, work engagement also - under certain conditions - seems to interindividually

affect the other partner's self-esteem via crossover processes. In a further step, this crossover of self-esteem seems to indirectly affect the other partner's work engagement.

Limitations

Our study has some limitations. First, due to practical constraints, our longitudinal design included not more than two measurement occasions. Concerning the crossover process we could - by controlling for the partner's level of self-esteem at Time 1 - depict the actual changes in partner's self-esteem over time. However, concerning the intraindividual relations between work engagement and self-esteem, we could not confirm real changes over time. We measured both the actor's self-esteem and the actor's work engagement at Time 1 as well as both partner's self-esteem and partner's work engagement at Time 2. Therefore, the causal implications drawn from these relations are less clear. Future studies could overcome this shortcoming by conducting longitudinal studies with more measurement occasions.

Secondly, we exclusively obtained self-report data from our participants. This enforces the risks of common method bias (Podsakoff, et al., 2003), especially for the intraindividual relations measured at Time 1 and at Time 2. However, by conducting confirmatory factor analyses we could show that self-esteem and work engagement constituted distinct constructs both at Time 1 and at Time 2. Furthermore, a common method bias of our results can be completely ruled out for the moderated crossover effect as both partners rated their self-esteem independently. Nevertheless, to rule out biased results due to common method, one promising extension to this study could be to include additional measures of self-esteem and work engagement (e.g., self-esteem ratings by colleagues or the partner, e.g., Schafer & Keith, 1992).

Finally, we focused on self-esteem as one central positive self-evaluation that might cross over between partners. The idea of a crossover of positive self-evaluations between

partners in dual-earner couples is only just at the beginning. Therefore, it would be an interesting avenue for future research to examine a possible transmission of other positive self-evaluations between partners, e.g., a transmission of job-related self-efficacy.

Implications for Future Research and Practice

Our results raise interesting questions for future research and bring along new practical implications for organizations. First, future research should try to identify mechanisms that underlie the crossover of self-esteem. According to Schafer and Keith (1992) a convergence of partners' self-esteem is caused by frequent communication as this creates a cognitive interdependence between intimate partners. Thus, examining the role of frequency and content of communication between relationship partners constitutes an interesting extension of the present study. Also, as the crossover of self-esteem does not seem to account for every person the same way, future studies should also try to identify further moderators in the crossover process. As the inclusion of the other partner in the self especially seems to occur in close relationships (Aron, et al., 2005), the perceived closeness between both partners could be an interesting aspect to examine.

Furthermore, our results should encourage managers in organizations to broaden their view concerning the interplay between work and family. The indication of an interindividual upward spiral suggests that creating a positive and supportive work context might not only affect an employee's own self-esteem beliefs (McAllister & Bigley, 2002) but might - under certain conditions - even affect the self-esteem and work engagement of this employee's working partner. Additionally, our results suggest that, if a person is susceptible to self-esteem crossover, there can be a crossover of low self-esteem resulting in this person's decreased self-esteem. Thus, managers should also keep in mind this potential danger of self-esteem crossover to be able to actively counteract negative crossover processes.

Conclusion

In conclusion, our results support the notion that employees' psychological states and experiences from work can affect their partners via crossover processes if the partner is susceptible to self-esteem crossover. Specifically, we could show that one partner's self-esteem perceptions can predict long-term changes in the partner's self-esteem if the partner has a low level of general self-esteem. This finding extends former crossover research because it strongly supports the proposition that work-related states and experiences can actually be transmitted between partners and do not only result from an original similarity due to assortative mating (Gonzaga, et al., 2007). Our results rather imply that apart from the partners' potential original similarity, self-esteem seems to converge over time if the partner has a low level of general self-esteem.

Additionally, our study contributes to research on self-esteem as it depicts work-related as well as non-work-related antecedents of self-esteem. In fact, it suggests that a person's self-esteem perceptions are associated both with experiences at work (i.e., that person's work engagement) and with experiences at home (i.e., the self-esteem of that person's partner).

STUDY 3

EXPANDING CROSSOVER RESEARCH: THE CROSSOVER OF JOB-RELATED

**SELF-EFFICACY WITHIN COUPLES**

Summary

This study examined the crossover of job-related self-efficacy within working couples, its underlying mechanisms, and its work-related consequences. We proposed that one partner's (the 'actor's') job-related self-efficacy can be transmitted to the other partner (the 'partner'). By building on self-efficacy research (Bandura, 1997) we hypothesized vicarious experience and verbal persuasion to be the mediators underlying this crossover process. We expected that the crossover of job-related self-efficacy would in turn result in the partner's altered work engagement. Using a sample of 102 professionals with an academic degree and their working partners, we conducted multilevel analyses using the Actor-Partner Interdependence Model. Our analyses offered support for our hypotheses. The actor's job-related self-efficacy positively related to the partner's job-related self-efficacy. This relation was mediated by the partner's perceived vicarious experience and verbal persuasion. Additionally, the actor's job-related self-efficacy indirectly related to the partner's work engagement through the partner's job-related self-efficacy.

Introduction

Job-related self-efficacy as an employee's "estimate of his or her capacity to orchestrate performance on a specific task" (Gist & Mitchell, 1992, p. 183) predicts multiple positive work-related outcomes (Abele & Spurk, 2009; Stajkovic & Luthans, 1998). Therefore, one major aim of research has been to find ways to foster employees' job-related self-efficacy (Eden & Kinnar, 1991). Until now, approaches to strengthen employees' job-related self-efficacy have merely been limited to the work context (e.g., Eden, et al., 2000; McNatt & Judge, 2008). To gain better understanding of how job-related self-efficacy develops it is crucial to detect further sources of employees' job-related self-efficacy. Thereby, we believe that it is important to also take into account the home domain, more specifically one's partner, as a possible source of job-related self-efficacy. Imagine you live in a dual-earner relationship with a partner also working who consistently shows faith in his or her own abilities. How will this affect your own job-related self-efficacy? According to crossover research (Westman, 2001), work-related psychological states can be transmitted between partners in relationships. Although crossover effects have been shown for a number of work-related states and experiences (Demerouti, Bakker, & Schaufeli, 2005; Song, et al., 2008), until now, no study has examined the possible transmission of job-related self-efficacy between partners. In the present study we therefore investigate how one partner's job-related self-efficacy can be transmitted to the other partner. More specifically, we examine the mechanisms linking both partners' job-related self-efficacy beliefs as well as the work-related consequences of the crossover process.

We build on self-efficacy research (Bandura, 1997) and argue that one partner's (the 'actor's') job-related self-efficacy beliefs can be transmitted to the other partner (the 'partner') through vicarious experience and verbal persuasion. Furthermore, concerning the work-related consequences of this crossover process, we postulate that the crossover of job-

related self-efficacy will in turn be associated with the partner's work engagement (see *Figure 4.1*).
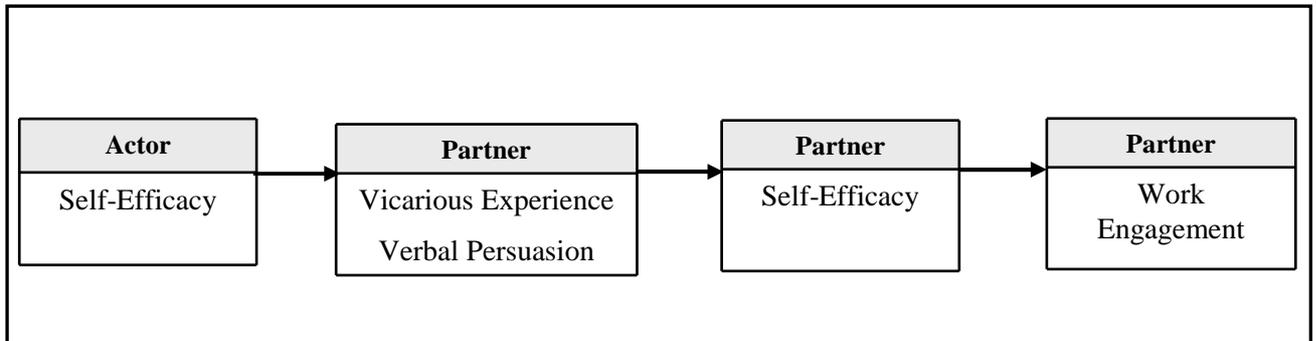
Figure 4.1. Model proposed in our study

Thus, the aim of our study is threefold. First, we test the possible crossover of job-related self-efficacy. As mentioned earlier, job-related self-efficacy is an important antecedent of multiple positive work-related outcomes (Abele & Spurk, 2009; Stajkovic & Luthans, 1998). Therefore, it is crucial to understand how employees' job-related self-efficacy beliefs are formed. To detect further sources of individuals' job-related self-efficacy that go beyond the direct work context, we take a closer look at the home domain. Specifically, we focus on the partner as a possible source of job-related self-efficacy. We posit that a person's partner who also pursues a career can influence this person's job-related self-efficacy. This proposition is supported by spillover research (Edwards & Rothbard, 2000) that showed that a person's job-related moods, values, skills, and behavior can be brought home from work. We therefore assume that a person brings home his or her job-related self-efficacy beliefs thereby affecting his or her partner via crossover processes. Second, we examine mechanisms linking both partners' job-related self-efficacy beliefs. We hereby postulate that vicarious experience and verbal persuasion mediate the crossover of job-related self-efficacy. These mediators are derived from research on general self-efficacy (Bandura, 1997) and have already been shown to affect peoples' self-efficacy beliefs in the work context (Eden & Kinnar, 1991; Mellor, et

al., 2006). By showing that vicarious experience and verbal persuasion by one's partner are further antecedents of one's job-related self-efficacy we expand research on the sources of self-efficacy. In a final step, we address work-related consequences of the crossover process. We argue that through the crossover of job-related self-efficacy a person's work engagement can be affected. To find this work-related consequence of the crossover of job-related self-efficacy emphasizes the practical relevance of our study as it shows that the crossover of job-related self-efficacy unfolds its impact beyond the home domain.

The Crossover Process

To explain the transmission of job-related self-efficacy we build on crossover research. According to Westman (2001), crossover can be defined as a dyadic interindividual transmission of psychological states between two partners. It has been shown that a person's positive and negative psychological states, such as stress, mood, and engagement can be transmitted to his or her partner (Bakker & Demerouti, 2009; Demerouti, et al., 2005; Song, et al., 2008). Westman (2001) defined three mechanisms for the crossover process. First, crossover can be a direct empathetic reaction. This means that a person can catch the psychological states of his or her partner and thereby can be directly affected. This direct crossover process mostly seems to account for affective states such as mood or emotions, similarly to the phenomenon of mood contagion (Neumann & Strack, 2000; Song, et al., 2010). As job-related self-efficacy is a cognitive-motivational construct, we do not assume a direct contagion of job-related self-efficacy via an empathetic reaction. The second mechanism refers to the spuriousness of crossover effects. This means that in some cases psychological states are only seemingly transmitted between two partners but are actually the result of a couple's similar environment or background. To rule out this spurious relation we conducted some additional analyses which we will explain in detail at the end of this section.

The third mechanism (Westman, 2001) describes crossover as an indirect process and thus postulates mediators underlying the crossover process. We focus on the last mechanism and assume the crossover of job-related self-efficacy to be an indirect process. We derive the mediators linking both partners' job-related self-efficacy perceptions– vicarious experience and verbal persuasion - from research on general self-efficacy (Bandura, 1997).

Self-Efficacy Research

According to Bandura (1997, p. 3), general self-efficacy "refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Self-efficacy beliefs are a central predictor of behavior and behavior change as they determine "how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences" (Bandura, 1977, p. 194). Self-efficacy is a multi-faceted, domain-specific construct. Thus, a person can have different levels of self-efficacy depending on the domain in question (Bandura, 1997). This implies that in order to make valid predictions of a person's behavior in a given domain one should assess the person's self-efficacy in this corresponding field. In our study, we therefore focus on job-related self-efficacy as an employee's "estimate of his or her capacity to orchestrate performance on a specific task" (Gist & Mitchell, 1992, p. 183). Job-related self-efficacy has been repeatedly shown to be an important predictor of employees' positive job-related behavior (Abele & Spurk, 2009; Stajkovic & Luthans, 1998). According to Bandura (1997), self-efficacy in a given domain can have four different sources: Performance accomplishments (i.e., the personal encounter of success and the overcoming of difficulties)*,* emotional arousal (i.e., physiological states like aversive arousal that can cause doubts in one's own capability)*,* vicarious experience (i.e., the modeling through the observation of other people)*,* and verbal persuasion (i.e., verbal encouragement by other people)*.* The first two sources of self-efficacy

refer to an individual's personal experiences and are not directly dependent on the social context. Vicarious experience and verbal persuasion, however, both directly involve a person's social environment and also have been shown to positively affect self-efficacy in the work context (Eden & Kinnar, 1991; Mellor, et al., 2006; Prussia & Kinicki, 1996). We posit that, considering a person's social environment, one's partner is an important part. We therefore assume vicarious experience and verbal persuasion to be crucial in the crossover of job-related self-efficacy between partners in dual-earner relationships.

First, vicarious experience means that the beliefs in one's capabilities can be acquired by the observation of relevant others. Thus, other people can act as models for one's own self-expectations. Observing other people being convinced of their capabilities and being successful in a given domain can foster the expectation that one can be equally successful. But with whom do people compare themselves? We postulate that one's partner who also pursues a career and with whom one interacts and talks to almost every evening surely is - besides one's colleagues at work - an additional point of reference concerning the assessment of one's own job-related competencies. This notion is supported by research on social comparisons in relationships (Pinkus, et al., 2008). Pinkus et al. (2008) found that couples compare themselves with respect to their skills and abilities on a daily basis. Therefore, we believe that people are aware of their partner's job-related behavior in the face of difficulties and of their partner's conviction in his or her job-related capabilities and that this perception models their own job-related self-efficacy. More precisely, we hypothesize that the actor's job-related self-efficacy affects the partner's job-related self-efficacy through vicarious experience.

Second, significant others can also affect a person's job-related self-efficacy beliefs via verbal persuasion, i.e. by expressing their trust in one's capabilities. Of course, the own partner is an important confidant for many people concerning their job-related problems and a

major source of social support (Aryee, Luk, Leung, & Lo, 1999; Seiger & Wiese, 2009). We therefore postulate that a person's job-related self-efficacy can be increased via the verbal persuasion of this person's partner. According to Bandura (1997), verbal persuasion has a stronger impact if we assume the person giving us the support to be successful in the given domain. Thus, if the actor himself is high in job-related self-efficacy this should result in a more successful verbal persuasion which in turn should increase the partner's job-related self-efficacy. Specifically, we hypothesize that the actor's perceived job-related self-efficacy crosses over to the partner via the verbal persuasion experienced by the partner.

Hypothesis 1: There is a positive relation between the actor's and the partner's job-related self-efficacy.

Hypothesis 2: The crossover of job-related self-efficacy is mediated by the partner's perceived vicarious experience (Hypothesis 2a) and verbal persuasion (Hypothesis 2b).

Work-Related Consequences of the Crossover of Job-related Self-Efficacy

In a further step, we examined the work-related consequences of the crossover of job-related self-efficacy. Is the transmission of job-related self-efficacy between the actor and the partner related to the partner's working behavior? As mentioned earlier, a person's job-related self-efficacy beliefs are a central determinant in the work context. Positive effects of self-efficacy on performance-related outcomes are well documented (Abele & Spurk, 2009; Stajkovic & Luthans, 1998). An important indicator for multiple performance-related outcomes is work engagement as it has been shown to predict positive work-related outcomes like financial returns and performance ratings (Bakker & Bal, 2010; Salanova, et al., 2005; Xanthopoulou, et al., 2009b). Work engagement is defined as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli & Bakker, 2004, p. 295). Furthermore, job-related self-efficacy has already been found to be

positively related to work engagement (Xanthopoulou, et al., 2009a; Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008). Thus, we believe that the transmission of job-related self-efficacy between the actor and the partner should in turn result in the partner's altered work engagement. Specifically, we hypothesize an indirect effect of the actor's job-related self-efficacy on the partner's work engagement through the partner's job-related self-efficacy.

Hypothesis 3: The actor's job-related self-efficacy indirectly predicts the partner's work engagement through the partner's job-related self-efficacy.

Alternative Explanations

According to Westman (2001), crossover effects can be spurious in the sense that there is no genuine transmission of psychological states between partners. Instead, there can be similar levels of the construct in question due to factors such as a similar environment shared by both partners (e.g., Song, et al., 2010). In the case of the crossover of job-related self-efficacy, an alternative explanation to a transmission could be that both partners already shared a similar level of job-related self-efficacy when they met for the first time. Research on assortative mating suggests that people tend to choose partners right from the beginning who are similar to themselves in various aspects, like personality, emotions, and behavior (Gonzaga, et al., 2007; Tambs & Moum, 1992). One explanation for this phenomenon is that people are initially attracted to similar others (Gonzaga, et al., 2007). However, up to now, the assortative mating perspective, to our knowledge, has not been investigated with respect to people's self-efficacy. To rule out this alternative explanation we conducted additional analyses testing two indicators of the couples' initial similarity (similarity of educational background and retrospective general similarity) as possible moderators in the crossover process. Hereby, the basic idea was to test if the strength of the relation between both

partners' job-related self-efficacy was influenced by the degree of both partners' initial similarity.

Method

Procedure and Sample

We collected our data with an online survey asking both partners independently to participate in our study. To be included in our final sample, both partners had to fill in the questionnaires completely, at least one partner had to have an academic degree from university or technical college, both partners had to be employed or self-employed, and the couple had to live together.

Following this approach, our final sample consisted of 102 heterosexual couples (204 participants). The average length of the couples' relationship was 11.66 years ($SD = 6.25$) with 63.7% being married and 51.0% having children ($M = 2.66$, $SD = 0.64$). Participants' average age was 37.75 years ($SD = 7.58$). As intended, the vast majority of our sample was fairly well educated, with 78.0% having finished university or technical college and 37.3% having a leadership position. Most of our participants (67.6%) were employees in private organizations. Concerning the average working time, participants' average contractual working hours were 30.83 hours per week ($SD = 14.59$). However, the actual working time was 41.17 hours per week on average ($SD = 9.86$).

Measures

We collected our data with an online questionnaire that was distributed independently to each partner. Table 4.1 shows means, standard deviations, zero-order correlations, and Cronbach's alphas for all study variables.

Table 4.1

Means, Standard Deviations, and Correlations among the Study Variables

Variable	M	SD	α	1	2	3	4	5	6	7	8	9	10	11
1 Self-Efficacy (Actor)	4.16	0.50	.90	—										
2 Self-Efficacy (Partner)	4.16	0.50	.90	.25 **	—									
3 Vicarious Experience (Partner)	4.23	0.54	.91	.42 **	.39 **	—								
4 Verbal Persuasion (Partner)	4.21	0.65	.95	.29 **	.41 **	.49 **	—							
5 Work Engagement (Partner)	3.56	0.77	.94	.23 **	.54 **	.34 **	.32 **	—						
6 General Similarity (Partner)	3.55	0.63	.77	.15 *	.20 **	.20 **	.25 **	.20 **	—					
7 Educational Similarity [a]	0.39	0.49		.15 *	.15 *	-.02	.09	.15 *	.21 **	—				
8 Children [b]	1.49	0.50		-.14 *	-.16 *	.01	.08	-.13	-.26 **	-.26 **	—			
9 Length of Relationship	11.66	6.25		-.03	-.03	-.04	-.07	.06	.08	.05	-.25 **	—		
10 Gender (Partner) [c]	1.50	0.50		-.10	.10	-.13	-.04	-.03	-.09	.00	-.01	.00 **	—	
11 Age (Partner)	37.75	7.58		.07	.16 *	-.03	-.02	.11	.15 *	.14	-.24 **	.51 *	.13	—
12 Length of Interaction (Partner)	10.34	8.96		.04	.03	.05	.09	.06	-.02	-.06	.01	-.15 **	-.02	-.06

Note. * $p < .05$; ** $p < .01$. [a] 0 = low educational similarity; 1 = high educational similarity. [b] 1 = children; 2 = no children. [c] 1 = female; 2 = male

We assessed *job-related self-efficacy* with the eight items from the general self-efficacy scale from Chen, Gully and Eden (2001). As we wanted to assess job-related self-efficacy, we adapted the items to tap self-efficacy referring to one's job (e.g., "When facing difficult tasks at work, I am certain that I will accomplish them"). The items were rated on a five-point Likert scale ranging from (1) "totally disagree" to (5) "totally agree".

We measured *vicarious experience* with a modified version of the vicarious learning subscale derived from the sources of self-efficacy scale by Lent, Lopez, and Bieschke (1991). We adapted the items to measure vicarious learning from one's partner concerning job-related self-efficacy. The adapted scale finally consisted of eight items (e.g., "At work, my partner is able to successfully overcome many challenges") and was again rated on a five-point Likert scale (1 = "totally disagree"; 5 = "totally agree").

We measured *verbal persuasion* with a modified subscale of Lent et al.'s (1991) sources of self-efficacy scale. This time, we adapted eight items to assess the degree of perceived verbal persuasion by the partner regarding one's job-related self-efficacy (e.g., "My partner tells me that I am able to successfully overcome many challenges at work"). Again, all items were answered on a five-point Likert scale (1 = "totally disagree"; 5 = "totally agree").

We measured *work engagement* with the nine items of the short version of the Utrecht Work Engagement Scale (Schaufeli, et al., 2006; e.g., "At my work, I feel bursting with energy").

Construct Validity

To ensure that job-related self-efficacy, vicarious experience, verbal persuasion, and work engagement constitute distinct constructs, we conducted multilevel confirmatory factor analyses (CFAs) with Mplus, taking into account the person as well as the couple level of our data set. Results from the CFAs revealed a better fit of the assumed four-factor model ($\chi^2 =$

684.719, $df = 489$, $\chi^2/df = 1.400$, RMSEA = 0.044, CFI = .950) than of the best fitting three-factor model (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 123.160$, $\Delta df = 3$, $p < .001$), the best fitting two-factor model (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 439.734$, $\Delta df = 5$, $p < .001$), and the one-factor model (Satorra-Bentler scaled (S-B) $\Delta\chi^2 = 614.687$, $\Delta df = 6$, $p < .001$).

Control Variables

Person-level control variables.

Concerning the relation between age and self-efficacy, Bandura (1997, p. 196) states that self-efficacy beliefs in "the major areas of functioning" tend to stabilize in middle age. This could result in older participants being less easily affected by their partners. Additionally, some studies indicate that the relation between job-related self-efficacy and other constructs also seems to depend on the participants' gender (Schmitt, 2008; Wang, Lawler, & Shi, 2010). Thus, men and women could be unequally affected by their partners' self-efficacy. We therefore controlled for age and gender (1 = female; 2 = male) in our analyses. Furthermore, the average time spent with the partner is imperative to control. The more time both partners spend together, the more likely vicarious experience and verbal persuasion are to happen. Thus, we also controlled for the average length of interaction with the partner during the week (in hours).

Couple-level control variables.

We assumed that the longer the couples already had been together the more likely it would be that self-efficacy crossover already had occurred. Thus, we controlled for the length of the couples' relationships (in years). Furthermore, having children can be associated with an increased perceived conflict between family and work which in turn can decrease a

person's job-related self-efficacy (Wang, et al., 2010). Thus, we also controlled if the couple had children or not (0 = no children; 1 = children).

Variables Used in Additional Analyses

At the person level we measured how the partner rated his or her general similarity to his or her partner at the time they met for the first time. We hereby instructed participants to think back to the time they had met their partners for the first time and assess their similarity at that time with five self-constructed items on a 5-point Likert scale ranging from (1) "not at all" to (5) "extremely" ("When you and your partner met: How similar have you been with respect to … (1) … your interests; (2) … your perspectives on life; (3) … your perspectives on work; (4) … your success at work; (5) … your conviction in your capabilities").

At the couple level we assessed the similarity of both partners with respect to their education. We had asked both partners separately if they had finished a university or technical college. From the answers we generated a dichotomous educational similarity index (0 = low educational similarity; 1 = high educational similarity).

Data Analysis

Partners within relationships share a lot of common external influences and affect each other through their regular interaction. Thus, when analyzing the transmission of psychological states within couples one has to take into account this common variance shared by the couples. Technically speaking, our data was hierarchically structured, with persons being nested within couples (Bryk & Raudenbush, 1992). We therefore applied hierarchical linear modeling to analyze our data, using the Actor-Partner Interdependence Model (APIM; Kenny, et al., 2006). In the APIM, each person within the couple is included into the analyses both as the "actor" and as the "partner". This way the APIM allows to analyze intraindividual

effects (so-called "actor effects") as well as interindividual effects (so-called "partner effects") within a couple. Partner effects describe the reciprocal relation between both partners, i.e. in our sample the crossover of job-related self-efficacy between men and women as well as between women and men. For these analyses we used the HLM 6 software package (Raudenbush, et al., 2004). We centered all person-level as well as couple-level predictor and control variables at their respective grand mean.

Results

Preliminary Analyses

In a first step, we calculated the amount of variability between persons and couples for all of our predictor, mediator, and outcome variables to affirm 2-level hierarchical linear modeling to be the appropriate analysis procedure. Thus, we computed the intraclass correlations for job-related self-efficacy, vicarious experience, verbal persuasion, and work engagement based on the two-level intercept-only models (null models) of the respective variable. For job-related self-efficacy, 75% of the variance was attributable to between-person variations, whereas 25% of the variance was attributable to between-couple variations (cf. null model in Table 4.2). For vicarious experience, the variance component at the person level was 0.21 ($SE = 0.03$) and the variance component at the couple level was 0.08 ($SE = 0.03$). Therefore, 72% of the variance of vicarious experience was attributable to the person level and 28% of the variance was attributable to between-couple variations. For verbal persuasion, the variance component at the person level was 0.24 ($SE = 0.03$) and the variance component at the couple level was 0.19 ($SE = 0.05$). Thus, 55% of the variance of verbal persuasion was attributable to variation between persons and 45% of variance was attributable to the couple level. Finally, for work engagement, 56% of variance was attributable to between-person variations whereas 44% of variance was attributable to between-couple variations (cf. null

model in Table 4.3). To sum up, a substantial proportion of variance was explained at the couple level with variations ranging from 25% to 45%, which emphasizes the importance of taking into account the couple level in our analyses.

Test of Hypotheses

The crossover of job-related self-efficacy (Hypothesis 1).

To test Hypothesis 1, we compared three nested models: the null model, Model 1, and Model 2. In the null model, the intercept was included as the only predictor. In Model 1, all control variables at the person (i.e., partner's age, gender, and the couple's average length of interaction during the week – rated by the partner) and couple level (i.e., the couple's length of relationship (in years) and whether the couple had children or not) were added. In the final model (Model 2), we included the actor's job-related self-efficacy as core predictor variable. We compared the model fit of these nested models by calculating the difference between a model's likelihood ratio and the previous model's likelihood ratio. This difference follows a chi-square distribution and the degrees of freedom correspond to the number of variables added in each model. Results are depicted in Table 4.2. Model 1 (including the control variables) showed a significantly better model fit than the intercept-only model ($\Delta - 2$ x log $=$ 13.672, $df = 5$, $p < .05$). The partner's age was the only significant predictor variable in this model with partner's age being positively related to partner's job-related self-efficacy. Model 2 that included the actor's job-related self-efficacy as predictor variable showed a significant improvement over Model 1 ($\Delta - 2$ x log $= 4.734$, $df = 1$, $p < .05$). Also, the unstandardized estimate of actor's job-related self-efficacy was highly significant. To conclude, as hypothesized, the actor's job-related self-efficacy predicted the partner's job-related self-efficacy. Thus, data supported Hypothesis 1.

Table 4.2

Multilevel Estimates for Models Predicting Partner's Self-Efficacy

Variable	Null model			Model 1			Model 2			Model 3		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	4.164	0.039	107.384 ***	4.164	0.037	111.697 ***	4.164	0.033	127.340 ***	4.164	0.029	142.840 ***
Length of Relationship				-0.014	0.007	-1.977	-0.011	0.006	-1.778	-0.011	0.006	-1.976
Children [a]				-0.145	0.078	-1.862	-0.112	0.069	-1.617	-0.166	0.062	-2.666 **
Gender (Partner) [b]				0.073	0.060	1.216	0.099	0.067	1.494	0.121	0.060	2.036 *
Age (Partner)				0.014	0.006	2.491 *	0.012	0.005	2.248 *	0.012	0.005	2.647 **
Length of Interaction (Partner)				0.001	0.004	0.133	0.001	0.004	0.147	-0.001	0.003	-0.325
Self-Efficacy (Actor)							0.221	0.068	3.277 **	0.026	0.067	0.389
Vicarious Experience (Partner)										0.228	0.066	3.471 **
Verbal Persuasion (Partner)										0.227	0.052	4.366 ***
- 2 x log		286.577			272.905			268.172			221.254	
Δ – 2 x log					13.672 *			4.734 *			46.918 ***	
df					5			1			2	
Level 1 Variance (SE)		0.186 (0.026)			0.176 (0.025)			0.218 (0.031)			0.173 (0.024)	
Level 2 Variance (SE)		0.061 (0.025)			0.054 (0.023)			0.000 (0.022)			0.000 (0.017)	

* $p < .05$; ** $p < .01$; *** $p < .001$. [a] 1 = children; 2 = no children. [b] 1 = female; 2 = male

Mechanisms linking the crossover of job-related self-efficacy (Hypothesis 2).

To test Hypotheses 2a and 2b we applied three approaches to test mediations: The approach recommended by Baron and Kenny (1986), Sobel z tests, and the bootstrapping approach. According to Baron and Kenny (1986), when testing mediations, three conditions have to be met: (a) the predictor variable (actor's job-related self-efficacy) is related to the mediator variable (partner's perceived vicarious experience and verbal persuasion), (b) the mediator variable is related to the outcome variable (partner's job-related self-efficacy), and (c) the formerly significant association between the predictor variable and the outcome variable is reduced when the mediator variable is added. Concerning the first condition, the actor's job-related self-efficacy positively predicted both the partner's perceived vicarious experience ($\gamma = .456$, $SE = .071$, $t = 6.442$, $p < .001$) and the partner's perceived verbal persuasion ($\gamma = .236$, $SE = .088$, $t = 2.678$, $p < .01$) (after controlling for the same control variables as in Hypothesis 1). Therefore, the first condition was met. To test the second condition we compared the same three models as we did when testing Hypothesis 1. This time however, in a fourth step, we included vicarious experience and verbal persuasion as mediator variables (Model 3). The results are again depicted in Table 4.2. Adding both mediator variables in Model 3 resulted in a highly significant model fit improvement over Model 2 ($\Delta - 2 \times \log = 46.918$, $df = 2$, $p < .001$). Furthermore, the partner's perceived vicarious experience and verbal persuasion were significant predictors for the partner's job-related self-efficacy (see Table 4.2). Therefore, the second condition according to Baron and Kenny (1986) was also met. As can be seen in Table 4.2, when vicarious experience and verbal persuasion were added to the equation in Model 3, the association between the actor's job-related self-efficacy and the partner's job-related self-efficacy became non-significant. This corresponds to the final condition of testing mediations. In a second step, as all conditions for testing mediations according to Baron and Kenny (1986) were met, we tested the indirect effects of both

mediator variables with separate Sobel z tests. For vicarious experience (Hypothesis 2a), results of the Sobel z test ($t_a = 6.442$, $t_b = 3.471$, $z = 3.056$, $p < .01$) confirmed that the actor's job-related self-efficacy indirectly predicted the partner's job-related self-efficacy through the partner's perceived vicarious experience (after controlling for partner's perceived verbal persuasion). Similarly, concerning the partner's perceived verbal persuasion (Hypothesis 2b), the results of the Sobel z test ($t_a = 2.678$, $t_b = 4.366$, $z = 2.283$, $p < .05$) revealed that there was another indirect effect of the actor's job-related self-efficacy on the partner's job-related self-efficacy via the partner's perceived verbal persuasion (after controlling for partner's perceived vicarious experience). In a last step, we bootstrapped both indirect effects simultaneously with Mplus using a single-level bootstrapping approach as recommended by Preacher and Hayes (2008) for multiple mediator models. The indirect effect from the actor's job-related self-efficacy on the partner's job-related self-efficacy through vicarious experience was .090, 95% CI [0.021, 0.082]. The indirect effect from the actor's job-related self-efficacy on the partner's job-related self-efficacy via verbal persuasion was .083, 95% CI [0.087, 0.098]. Thus, the bootstrapping approach also supported both indirect effects. To conclude, all three approaches to test mediations supported Hypotheses 2a and 2b.

Work-related consequences of the crossover of job-related self-efficacy (Hypothesis 3).

Hypothesis 3 postulated that the actor's job-related self-efficacy indirectly relates to the partner's work engagement via the partner's job-related self-efficacy. However, we did not hypothesize a direct effect of the actor's job-related self-efficacy on the partner's work engagement. According to Mathieu and Taylor (2006), this is a case of an indirect effect. An indirect effect has to meet the same conditions as a mediation (see Hypothesis 2) except that the predictor variable (actor's job-related self-efficacy) is not directly related to the outcome

variable (partner's work engagement). The test of Hypothesis 1 had already supported the first condition (actor's job-related self-efficacy had been shown to be positively related to partner's job-related self-efficacy). To test the second condition, we analyzed if the partner's job-related self-efficacy was positively related to his or her work engagement. We therefore again applied hierarchical linear modeling (see Table 4.3). Our analyses revealed that Model 1 (including the control variables) showed no better model fit than the intercept-only model (Δ – 2 x log = 4.224, df = 5, ns). None of the control variables significantly predicted partner's work engagement. Furthermore, including actor's job-related self-efficacy in Model 2 did not result in a better model fit as well (Δ – 2 x log = 0.028, df = 1, ns). Thus, as expected, actor's job-related self-efficacy did not directly predict partner's work engagement. However, including partner's job-related self-efficacy in Model 3 resulted in a significant model improvement over Model 2 (Δ – 2 x log = 66.004, df = 1, p < .001) with partner's job-related self-efficacy being a significant predictor of his or her work engagement. As all conditions for an indirect effect were met we conducted a Sobel z test (t_a = 3.28, t_b = 8.847, z = 3.07, p < .05) which confirmed that the actor's job-related self-efficacy indirectly predicted the partner's work engagement through the partner's job-related self-efficacy. In a final step, to additionally support the indirect effect, we again bootstrapped the indirect effect of the actor's job-related self-efficacy on the partner's work engagement through the partner' job-related self-efficacy. We hereby used the approach to test ordinary single-level mediation as described by Preacher, Zyphur, and Zhang (2010). Results revealed that the hypothesized indirect effect was .195, 95% CI [0.061, 0.332]. Thus, data supported Hypothesis 3.

Table 4.3

Multilevel Estimates for Models Predicting Partner's Work Engagement

Variable	Null model			Model 1			Model 2			Model 3		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	3.562	0.064	55.226 ***	3.562	0.063	56.418 ***	3.562	0.064	55.956 ***	3.562	0.052	68.142 ***
Length of Relationship				-0.001	0.012	-0.078	-0.001	0.012	-0.089	0.012	0.010	1.191
Children [a]				-0.172	0.132	-1.298	-0.176	0.134	-1.309	-0.029	0.111	-0.259
Gender (Partner) [b]				-0.054	0.083	-0.646	-0.056	0.083	-0.675	-0.095	0.073	-1.305
Age (Partner)				0.009	0.009	0.962	0.009	0.009	0.955	-0.003	0.008	-0.440
Length of Interaction (Partner)				0.004	0.006	0.741	0.004	0.006	0.739	0.004	0.005	0.818
Self-Efficacy (Actor)							-0.025	0.104	-0.237	0.154	0.090	1.699
Self-Efficacy (Partner)										0.812	0.092	8.847 ***
- 2 x log		450.567			446.343			446.315			380.311	
Δ – 2 x log					4.224			0.028			66.004 ***	
df					5			1			1	
Level 1 Variance *(SE)*		0.335 (0.047)			0.335 (0.047)			0.330 (0.046)			0.256 (0.036)	
Level 2 Variance *(SE)*		0.257 (0.064)			0.239 (0.062)			0.248 (0.062)			0.151 (0.043)	

* p < .05; ** p < .01; *** p < .001. [a] 1 = children; 2 = no children. [b] 1 = female; 2 = male

Additional Analyses

To rule out the alternative explanation of the partners' initial similarity we tested if the couples' educational similarity as well as their initial general similarity moderated the crossover effect. We again applied hierarchical linear modeling comparing four nested models: The null model, Model 1 (including the same control variables as in the previous analyses), Model 2 (including the main effects, i.e. general similarity, educational similarity and actor's job-related self-efficacy), and Model 3 (including the interaction terms). Table 4.4 shows the results. Analyses showed that neither the couples' general nor their educational similarity were significant moderators influencing the strength or direction of the relation between both partners' job-related self-efficacy[5]. Thus, the crossover of job-related self-efficacy seems to occur irrespective of the couple's initial similarity.

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[5] The moderator terms also stayed non-significant when entered separately into the equation.

Table 4.4

Multilevel Estimates for Models Predicting Partner's Self-Efficacy

Variable	Null model			Model 1			Model 2			Model 3		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	4.164	0.039	107.384 ***	4.164	0.037	111.697 ***	4.164	0.032	129.013 ***	4.168	0.033	127.426 ***
Length of Relationship				-0.014	0.007	-1.977	-0.010	0.006	-1.686	-0.012	0.006	-1.867
Children [b]				-0.145	0.078	-1.862	-0.067	0.072	-0.942	-0.067	0.071	-0.937
Gender (Partner) [c]				0.073	0.060	1.216	0.113	0.066	1.716	0.108	0.066	1.650
Age (Partner)				0.014	0.006	2.491 *	0.010	0.005	1.961	0.011	0.005	2.067 *
Length of Interaction (Partner)				0.001	0.004	0.133	0.001	0.004	0.254	0.000	0.004	0.089
General Similarity (Partner)							0.111	0.054	2.041 *	0.091	0.055	1.659
Educational Similarity [a]							0.058	0.070	0.829	0.076	0.070	1.076
Self-Efficacy (Actor)							0.201	0.067	2.989 **	0.187	0.067	2.774 **
Self-Efficacy (Actor) x General Similarity (Partner)										-0.191	0.116	-1.656
Self-Efficacy (Actor) x Educational Similarity										0.135	0.137	0.990
- 2 x log		286.577			272.905			262.839			259.639	
Δ – 2 x log					13.672 *			10.066 *			3.200	
df					5			3			2	
Level 1 Variance *(SE)*		0.186 (0.026)			0.176 (0.025)			0.212 (0.030)			0.209 (0.029)	
Level 2 Variance *(SE)*		0.061 (0.025)			0.054 (0.023)			0.000 (0.021)			0.000 (0.021)	

* $p < .05$. **; $p < .01$; *** $p < .001$. [a] 0 = low educational similarity; 1 = high educational similarity. [b] 1 = children; 2 = no children. [c] 1 = female; 2 = male

Discussion

The aim of this study was to examine the crossover of job-related self-efficacy, the mechanisms linking the crossover process, and its work-related consequences. We showed that the actor's job-related self-efficacy is associated with the partner's job-related self-efficacy and that this association is mediated by the partner's perceived vicarious experience and verbal persuasion. In a further step, we demonstrated that the crossover of job-related self-efficacy indirectly relates to the partner's perceived work engagement.

Research contributions

Our finding that job-related self-efficacy can be transmitted between partners in dual-earner relationships contributes to crossover research (Westman, 2001). By examining the crossover of job-related self-efficacy as a cognitive-motivational construct our study extends former crossover research that mainly focused on affective states and experiences such as mood, work engagement, and burnout (Bakker & Demerouti, 2009; Bakker, et al., 2005; Song, et al., 2008). The finding that there is a crossover of job-related self-efficacy is important as job-related self-efficacy is a determinant for multiple positive work-related outcomes (Abele & Spurk, 2009; Stajkovic & Luthans, 1998). In our study we showed that one's partner's job-related self-efficacy is an antecedent of one's own job-related self-efficacy.

Furthermore, by building on self-efficacy research (Bandura, 1997), we could support our assumption that the transmission of job-related self-efficacy is mediated by the partner's perceived vicarious experience and verbal persuasion. This finding goes in line with research on the sources of self-efficacy (Bandura, 1997). Vicarious experience and verbal persuasion already have been shown to be important social sources of a person's self-efficacy in the work context (Eden & Kinnar, 1991; Mellor, et al., 2006; Prussia & Kinicki, 1996). However, this

research never took a person's partner into account. Thus, a central finding of our study is that when examining a person's job-related self-efficacy, the home domain may not be neglected. Our results suggest that a person's partner at home can be an additional reference point for his or her job-related self-efficacy. This notion goes in line with research on social comparisons in relationships (Pinkus, et al., 2008). Thus, a person's job-related self-efficacy must not be seen independently from his or her partner's job-related self-efficacy. Most probably, by interacting and talking to one's partner one's own job-related self-efficacy can be affected.

In a final step, concerning the work-related consequences of the crossover process, we showed that the crossover of job-related self-efficacy in turn is associated with the partner's work-related behavior. Specifically, we found that the actor's job-related self-efficacy indirectly relates to the partner's perceived work engagement through the partner's job-related self-efficacy. This finding underlines the practical relevance of our findings as work engagement is an important antecedent of multiple positive work-related outcomes (Bakker & Bal, 2010; Salanova, et al., 2005; Xanthopoulou, et al., 2009b). Thus, one's partner cannot only affect one's job-related self-efficacy through crossover processes but this transmission in turn is related to a person's work engagement.

To rule out possible alternative explanations, we additionally conducted two moderation analyses showing that the crossover of job-related self-efficacy does not seem to be spurious. We could demonstrate that the crossover of job-related self-efficacy accounts for our whole sample irrespective of their educational similarity and initial general similarity. This finding is particularly interesting as research on assortative mating (Gonzaga, et al., 2007; Tambs & Moum, 1992) has shown that partners' similarity with respect to various attributes such as behavior or personality can at least to some extent stem from the initial selection of similar partners. Our results suggest that people do not seem to just choose

partners who are similar concerning their job-related self-efficacy but also seem to converge via crossover processes.

Research Limitations

Our study has some limitations. First, our study was cross-sectional which impairs causal interpretations of our findings. However, by performing additional similarity analyses, we tried to rule out the most obvious alternative explanation – the similarity of both partners' job-related self-efficacy due to assortative mating. Our moderation analyses clearly showed that the crossover effects stayed significant irrespective of the couples' initial similarity. Nevertheless, future research should support our findings using methodological approaches that allow stronger causal conclusions. A second limitation of our study is that it exclusively relied on self-reports. Using self-report data increases the risk of common method bias (Podsakoff, et al., 2003). We tried to reduce common method variance by letting both partners rate their job-related self-efficacy independently. Furthermore, multilevel confirmatory factor analyses revealed that job-related self-efficacy, vicarious experience, verbal persuasion, and work engagement constituted empirically distinct constructs. Future research, however, should validate our findings by using data from other sources such as work engagement ratings from co-workers.

Conclusion

In our study we showed that job-related self-efficacy unfolds its impact beyond the work context. Thus, high job-related self-efficacy is not only beneficial for a number of job-related outcomes (Abele & Spurk, 2009; Stajkovic & Luthans, 1998), it also seems to be brought home thereby affecting one's partner via crossover processes. The notion that job-related moods, values, skills, and behavior do not stay in the work context is supported by

research on spillover effects (Edwards & Rothbard, 2000). Thus, by fostering employees' job-related self-efficacy beliefs this can even have salutary effects on the partner as he or she might adapt those beliefs. We could show that this crossover effect in turn relates to the partner's altered work engagement.

Our findings have practical implications for a growing percentage of couples as the amount of dual-earner couples is progressively increasing (Ilies, et al., 2007). Partners should be aware of chances and risks of crossover processes not only with respect to affective states such as mood but also with respect cognitive-motivational constructs like job-related self-efficacy. Thus, dual-earner couples should be conscious of the fact that they can both be impaired by their partners' eventual low self-efficacy perceptions and be enriched if their partner is high in job-related self-efficacy.

To conclude, the results of our study suggest that a person's non-work social environment and particularly his or her partner is an important source of job-related self-efficacy. This supports the importance of the interplay between work and family (Grzywacz & Marks, 2000) and encourages research to broaden its view on crossover processes.

GENERAL DISCUSSION

The present dissertation aimed to extend research on positive crossover processes. By including the job-related self-evaluations self-esteem and self-efficacy into the crossover framework I wanted to shed light on possible sources of individuals' job-related self-evaluations in the non-work domain. Specifically, three independent empirical studies examined the crossover of self-esteem and self-efficacy between partners in dual-earner relationships. Furthermore, potential moderators facilitating the crossover of self-esteem as well as possible mediators underlying the crossover of self-efficacy were investigated. In the following sections, I will summarize and integrate the core findings of the studies. Furthermore, I will delineate this dissertation's contributions to research and will discuss its strengths and limitations. This chapter will end with an overview over the implications for practice and future research that can be derived from this dissertation and a general conclusion.

Overall Summary of Results

In Study 1 (Chapter 2) the crossover of self-esteem was examined from a day-level perspective. Specifically, in line with research on responses to partners' successes in identity relationships (McFarland, et al., 2001), my co-authors and I proposed that the perception of one partner's (the 'actor's') self-esteem should result in an assimilation of the other partner's (the 'partner's) self-esteem. Thus, we hypothesized a crossover of day-specific self-esteem between partners. Concerning possible moderators facilitating the daily crossover of self-esteem, we focused on the partner's general level of self-esteem and empathic concern. Furthermore, we investigated the actor's perceived job performance after work and the partner's anticipated work engagement the next morning as work-related antecedent and consequence of this crossover process, respectively. We tested our hypotheses with a diary

study among 102 working couples over five consecutive working days. Results revealed a daily crossover of self-esteem between partners. This means that on days when the actor perceived high self-esteem after work the partner showed higher self-esteem in the evening, too. Furthermore, we found a significant moderation of the partner's general level of self-esteem and empathic concern, respectively. The actor's self-esteem only crossed over to partners with a generally low level of self-esteem and a generally high level of empathic concern. Concerning work-related antecedents of the crossover process, results showed that the actor's job performance predicted his or her self-esteem after work. Furthermore, we could show moderated indirect effects of the actor's job performance on the partner's self-esteem in the evening via the crossover of self-esteem if both conditions of the moderators were met (i.e., if the partner had a generally low level of self-esteem and a generally high level of empathic concern). Finally, the partner's self-esteem in the evening predicted his or her anticipated work engagement the next morning. In sum, results of Study 1 demonstrated that a person's self-esteem varies on daily basis in dependence of this person's perceived job performance and that this self-esteem perception can in turn cross over to the other partner. In line with research on self-esteem (Crocker & Wolfe, 2001; Vohs & Heatherton, 2001) and crossover processes (Bakker & Demerouti, 2009; Westman, 2001), the crossover of self-esteem was fostered by the partner's generally low level of self-esteem and generally high level of empathic concern. Finally, the day-specific self-esteem experienced in the evening was again carried over to the work domain and became apparent in the partner's altered anticipated work engagement the next morning.

In Study 2 (Chapter 3), together with my co-authors I examined the crossover of self-esteem from a long-term perspective. Specifically, we examined if the actor's self-esteem predicted changes in the partner's self-esteem after six months. As a possible moderator in the crossover process we again focused on the partner's general level of self-esteem. Finally, we

investigated work engagement as both work-related antecedent and consequence of this crossover process. We tested our hypotheses with a sample of 294 working couples. Our results revealed that there was no direct crossover of self-esteem over six months. This means that the actor's self-esteem at Time 1 did not directly predict changes in the partner's self-esteem after six months. However, in line with our moderation hypothesis, there was a crossover of self-esteem over our six months' study period if the partner had a generally low level self-esteem. Thus, the long-term crossover of self-esteem only applied for partners with a generally low level of self-esteem. Finally, we showed that work engagement was both antecedent and consequence of the crossover process. We found that the actor's work engagement at Time 1 indirectly related to the partner's self-esteem at Time 2 via self-esteem crossover if the partner had a generally low level of self-esteem. Similarly, partner's work engagement at Time 2 was indirectly predicted by the actor's self-esteem at Time 1 via self-esteem crossover - again, if the partner had a generally low level of self-esteem.

Study 3 (Chapter 4) addressed the crossover of self-efficacy between working partners in dual-earner relationships. Based on self-efficacy research (Bandura, 1997), we hypothesized that self-efficacy should cross over between partners and that vicarious experience and verbal persuasion underlie this crossover process. As work-related consequence of the crossover of self-efficacy we again focused on the partner's work engagement. In this study, my co-authors and I examined the crossover with an online survey among 102 working couples. The results of this study revealed that the actor's self-efficacy was positively related to the partner's self-efficacy and that the partner's perceived vicarious experience and verbal persuasion mediated this crossover process. These findings are in line with research on general self-efficacy that proposes that vicarious experience and verbal persuasion are two central sources of individuals' self-efficacy beliefs (Bandura, 1997). In a final step, we demonstrated that the crossover of self-efficacy in turn related to the partner's

work engagement. Specifically, our analyses showed that the actor's self-efficacy indirectly predicted the partner's work engagement through the crossover of self-efficacy.

Taken together, the results of all three studies suggest that job-related self-evaluations can be transmitted between partners in dual-earner relationships and therefore support the core proposition of the present dissertation. This means that there are correlates of individuals' job-related self-evaluations that lie in the non-work domain. Interacting with one's partner who also works seems to affect one's own job-related self-evaluations. Furthermore, by showing work-related correlates of the crossover of job-related self-evaluations, findings support that experiences made at home can in turn be carried over to the work domain via spillover processes. Thus, the results of the present dissertation once again underlines the importance of seeing spillover and crossover processes as two complementary processes (Bakker, et al., 2009).

Study 1 and Study 2 focused on the crossover of self-esteem from a short-term and a long-term perspective, respectively. The daily focus of Study 1 revealed a direct crossover of self-esteem between partners that was even strengthened when the partner had a generally low level of self-esteem and a generally high level of empathic concern. By contrast, examining self-esteem crossover from a long-term perspective could not demonstrate a direct crossover of self-esteem between partners over six months. Two explanations can account for this lack of a direct crossover effect. On the one hand, the second study's time frame of six months possibly was too short to reveal long-term changes in participants' self-esteem in dependence of their partners. Thus, investigating the crossover of self-esteem over a longer period of time could reveal a direct crossover of self-esteem between partners. On the other hand, long-term self-esteem crossover may only apply for people who are prone to be affected by their partners' self-esteem. This notion is supported by the finding that a long-term crossover of self-esteem did occur in Study 2 for partners with a generally low level of self-esteem. This

finding also is line with the results of Study 1 that also demonstrated the moderating role of general self-esteem in the crossover process. Thus, the partner's general level of self-esteem seems to be an important moderator in both the short-term and the long-term process of self-esteem crossover. As self-esteem research suggests, people's general level of self-esteem affects the domain on which people stake their self-esteem and their interpersonal focus (Crocker & Wolfe, 2001; Vohs & Heatherton, 2001). People low in general self-esteem thereby tend to stake their self-esteem on external sources and to have a stronger interdependent focus. Thus, especially people with a low general level of self-esteem may be susceptible to adapting their partners' level of self-esteem both from a short-term and from a long-term perspective.

Contrary to Study 1, empathic concern was no moderator in the long-term process of self-esteem crossover in Study 2. Empathic concern refers to the emotional component of empathy and the ability to feel oneself into another person (Davis, 1980). This ability may be crucial when it comes to detecting the very subtle changes in self-esteem on a daily basis. Thus, in order to be able to respond to one's partner's daily fluctuations in self-esteem it may be of special importance to have a high degree of empathic concern. By contrast, on the long run, one's partner's degree of self-esteem may be more obvious. Thus, it may not require the same extent of empathy to be able to detect and to respond to one's partner's self-esteem from a long-term perspective.

While Study 1 and Study 2 examined the crossover of self-esteem, Study 3 investigated the crossover of self-efficacy between partners. The finding that self-efficacy crossover is mediated by the partner's perceived vicarious experience and verbal persuasion is in line with self-efficacy research (Bandura, 1997). As Westman (2001) pointed out, three explanations can account for crossover processes: Crossover as a direct empathic reaction, crossover as an indirect process, and crossover as a spurious effect. According to the findings

of Study 3, the crossover of self-efficacy seems to mainly be an indirect process with mediators underlying this crossover process. By contrast, the crossover of self-esteem most likely seems to be a more direct process, similar to what Westman (2001) calls a direct empathic reaction. This assumption is particularly obvious in Study 1 that revealed the partner's general degree of empathic concern - the emotional component of empathy - as a moderator in the crossover process and is in line with the conceptualization of self-esteem as having a stronger affective emphasis than self-efficacy (Chen, et al., 2004). Thus, results hint to different mechanisms accounting for the crossover of self-esteem and self-efficacy which once again underpins the need to conceptionally differentiate self-esteem and self-efficacy (Chen, et al., 2004).

Contribution to Research

The present dissertation adds to research on work and organizational psychology. The main contribution refers to research in the field of the work and non-work interplay. Furthermore, the present dissertation contributes to research on sources of individuals' job-related self-evaluations. In the following section, I want to highlight this dissertation's most central research contributions in more detail.

First, the present dissertation extends research on crossover processes. On the one hand, it contributes to research on positive crossover processes. As most studies on crossover processes had focused on the risks of negative crossover processes (Bakker, et al., 2009; Westman, 2001), this dissertation aimed to take a more positive perspective and examined possible chances of positive crossover processes in dual-earner relationships. The results of the present dissertation indicate that both self-esteem and self-efficacy can be transmitted between working partners. Thus, experiencing one's partner having high job-related self-evaluations most probably seems to lead to an assimilation of one's own self-esteem and self-

efficacy. Both job-related self-evaluations are central predictors of employees' work-related behavior (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998). Thus, showing that self-esteem and self-efficacy can be transmitted between working partners is an important extension to research on positive crossover processes and underlines the notion that work and home do not necessarily need to be conflicting domains (Greenhaus & Powell, 2006). On the other hand, the results of the present dissertation also add to research on variables moderating and mediating crossover processes. According to Westman (2001), besides examining positive crossover processes, gaining insight in how crossover processes actually occur is imperative. Our results support the notion that the mechanisms explaining crossover processes depend on the construct in question as different explanations seem to account for the crossover of self-esteem and self-efficacy, respectively. While the crossover of self-esteem seems to be a rather direct reaction, the crossover of self-efficacy seems to be a more indirect process. Beyond this distinction between different constructs, our results additionally indicate that crossover processes can even differ concerning the same construct depending on different time frames. As, until now, the majority of crossover studies relied on cross-sectional designs (Bakker, et al., 2009) only little was known concerning differences between short-term and long-term crossover processes. Concerning the crossover of self-esteem, results of Study 1 suggest that, on a daily basis, self-esteem can be directly transmitted between partners. On the contrary, concerning the long-term crossover of self-esteem, results of Study 2 could not support a direct crossover of self-esteem over six months. Also, as mentioned earlier, the partner's level of empathic concern was no moderator in the long-term crossover of self-esteem. These results imply that when establishing models to explain the crossover of psychological states between partners one has to make distinctions concerning both the construct and the time frame in question.

Second, by investigating both work-related antecedents and consequences of the crossover of job-related self-evaluations, this dissertation integrated research on spillover and crossover processes. Results of all three studies revealed that the crossover of both self-esteem and self-efficacy results in the partner's altered work engagement. Study 1 and Study 2 additionally focused on possible work-related antecedents of the crossover of self-esteem. We showed that a person's positive experiences at work (like high performance or engagement) relate to this person's self-esteem that can in turn be transmitted to the other partner. This crossover process again indirectly affected the partner's work engagement. Xanthopoulou et al. (2009a) had already shown positive self-evaluations and work engagement to be intraindividually reciprocally related leading to an intraindividual upward spiral. The present dissertation and in particular the results of Study 1 and Study 2 extend this finding by offering a first hint to an interindividual upward spiral in short-term as well as long-term crossover processes. Although future research is needed to draw more definite causal conclusions, such an interindividual upward spiral could become apparent as described in the following: A person's positive experiences at work (such as high engagement or performance) can foster this person's self-esteem perceptions which then can cross over to his or her partner at home. In long-term crossover processes the partner's general level of self-esteem hereby seems to be of special importance as a moderator enabling the crossover of self-esteem. Concerning short-term crossover processes, the partner's empathic concern appears to be an additional moderator. Most probably, the partner's increased self-esteem perceptions can then in turn be carried over to the work domain resulting in the partner's increased work engagement. The positive experience of being engaged at work made by the partner can then again affect his or her self-esteem which starts the interindividual upward spiral from its beginning.

Concerning research on job-related self-evaluations, this dissertation's studies support the view that there are sources of individuals' job-related self-evaluations that go beyond the direct work context. As already mentioned above, both self-esteem and self-efficacy constitute important predictors of positive job-related outcomes like job performance (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998). Thus, one major aim of research has been to find ways to foster these job-related self-evaluations by finding antecedents of individuals' self-esteem and self-efficacy (Eden, 1992; Pierce & Gardner, 2004). Also, concerning self-efficacy, verbal persuasion and vicarious experience at work had already been examined as possible sources of employees' self-efficacy (Eden & Kinnar, 1991; Mellor, et al., 2006; Prussia & Kinicki, 1996). However, to the best of our knowledge, research did not take a person's non-work life as a possible source of his or her job-related self-evaluations into account. By showing that a person's job-related self-evaluations are also dependent on his or her partner at home, this dissertation helps to take a broader view on the sources of individuals' job-related self-evaluations. The results of all three studies therefore suggest that in addition to work-related sources of individuals' job-related self-evaluations, antecedents of self-efficacy and self-esteem can also emerge from the non-work domain. With respect to the question of what domain has a stronger influence on individuals' job-related self-evaluations, results of Study 1 and Study 2 suggest a greater proportion of variance being explained by aspects experienced on-the-job (i.e., job performance and work engagement, respectively). However, crossover effects were estimated by taking both partners' self-esteem ratings independently and temporally separated. By contrast, the intraindividual relation between a person's on-the-job experiences and his or her self-esteem relied on self-ratings from the same person that were not temporally separated in both studies. The greater proportion of variance being explained by on-the-job experiences might therefore partly be caused by common method variance (Podsakoff, et al., 2003). Thus, future research is needed

to determine more clearly the relative influence on a person's job-related self-evaluations stemming from the work- as opposed to the non-work domain.

Strengths and Limitations

The present dissertation has some strengths but also some limitations that I would like to discuss in the following sections.

Self-report data.

One limitation of the present dissertation is that all studies exclusively used self-report data. This carries the risk of common method variance and can bias the relations between the studies' predictor and outcome variables (Podsakoff, et al., 2003).

Partly, this is due to the fact that the main focus of the present dissertation lied on self-esteem and self-efficacy - two self-evaluations that inherently are personal assessments of oneself. Thus, although attempts to measure self-evaluations from multiple sources seem promising it still is "conceptually difficult to understand what is being measured by others' perceptions of a person's self-esteem" (Strauss, 2005, p. 467). This is why we relied on self-report data of participants' job-related self-evaluations. However, we tried to minimize the risk of biased results and to increase the trustworthiness of our findings with different methodological approaches.

First, the risk of common method bias only applies for the intraindividual relations shown in the studies. By contrast, the interindividual relations between both partners' job-related self-evaluations cannot be biased by common method as both partners were asked independently to rate their self-esteem and self-efficacy, respectively. Thus, concerning the tests of all crossover hypotheses, we used different sources to rate the predictor and the outcome variables. This implies that with respect to the main proposition of the present

dissertation - the crossover of job-related self-evaluations - biased results due to common method can be ruled out.

Second, in Study 1 and Study 2, we temporally separated the measurements. As our main focus lied on the crossover of self-esteem, we always temporally separated both partners' self-esteem ratings to predict changes in the partner's self-esteem due to the actor. Whenever possible, we also tried to temporally separate the intraindividual relations between individuals' self-esteem and work-related antecedents and consequences. For example, in Study 1, the actor's job performance and self-esteem were measured after work, the partner's self-esteem in the evening, and the partner's anticipated work engagement the next morning. Thus, measurements of the partner's self-esteem in the evening and his or her work engagement the next morning were temporally separated and thus are unlikely to be inflated by common method bias. However, due to practical constraints, we could not temporally separate all intraindividual relations between self-esteem and self-efficacy and possible work-related antecedents and consequences throughout the studies. Using more measurement occasions in future research could therefore help to draw clearer causal inferences. Furthermore, colleague ratings of work engagement or job performance or also more objective measures of job performance could complement the present self-report data in future research.

Alternative explanation: Assortative mating.

One concern that arises when examining the crossover of psychological states between partners is the possible spuriousness of crossover effects (Westman, 2001). A major shortcoming of the majority of crossover studies therefore has been their cross-sectional designs (Bakker, et al., 2009) that did not allow to rule out this spuriousness for sure. Concerning the crossover of job-related self-evaluations, one alternative explanation to a

transmission of self-esteem and self-efficacy most obviously would be the couple's original similarity. According to research on assortative mating (Gonzaga, et al., 2007; Tambs & Moum, 1992), people often choose partners who are similar to themselves with respect to central aspects like personality, values, and behavior. Throughout the studies of the present dissertation, we tried to rule out this central alternative explanation.

In Study 1 and Study 2, we focused on changes in self-esteem and thereby could rule out the couple's original similarity as alternative explanation. In Study 1, we examined the partner's day-specific self-esteem in dependence of the actor's day-specific self-esteem. We thereby centered the actor's day-specific self-esteem around his or her personal mean. This allowed us to examine how daily fluctuations in the actor's state self-esteem predicted the partner's day-specific self-esteem. This way, our analyses were not confounded by between-person differences. Furthermore, we controlled for the partner's general level of self-esteem and therefore examined changes in the partner's self-esteem that go beyond his or her general level of self-esteem. Thus, a contamination of the results of Study 1 due to the couples' possible original similarity can be ruled out.

In Study 2, we focused on changes in the partner's self-esteem over six months. Thus, when predicting partner's self-esteem at Time 2 by actor's self-esteem at Time 1, we controlled for the partner's general level of self-esteem at Time 1. This way we could examine the crossover of self-esteem between partners irrespective of the partner's initial level of self-esteem.

Due to the cross-sectional design in Study 3, we could not predict changes in the partner's self-efficacy due to the actor. This is why we conducted some additional analyses in Study 3 to rule out both partners' initial similarity as alternative explanation. Specifically, we tested if the couple's initial similarity moderated the crossover of self-efficacy. We operationalized the couple's initial similarity by their shared educational background and their

self-rated degree of general similarity when they met. Results of these moderation analyses demonstrated that the crossover effect stayed stable irrespective of the couple's initial similarity.

Thus, in all three studies, we can be confident that our results are not caused by assortative mating. Nevertheless, concerning the crossover of self-efficacy, future research could support our findings with study designs that allow to depict changes in the partner's self-efficacy over time.

Generalizability.

Concerning the generalizability of our findings, we could find support for the core proposition of the present dissertation in three independent studies with different samples and different time frames. Whereas Study 1 took a day-level perspective on the crossover of self-esteem, Study 2 examined the long-term crossover of self-esteem. With self-efficacy, the actor's self-efficacy predicted the general level of the partner's self-efficacy. The similar results throughout this dissertation support the generalizability of the results. Still, some limitations concerning the external validity have to be made. According to the inclusion criteria of Study 1 and Study 2, at least one partner had to work in academia. In Study 2, one partner even had to have a doctoral degree. This implies a very high educational level of our sample. Similarly, in Study 3, at least one partner had to have an academic degree (i.e., had to had finished a university or technical college). The participants' high educational level throughout the studies raises the question if the results would still account for a less well educated sample.

On the one hand, the crossover of job-related self-evaluations could be less likely to occur among less well-educated samples. First, the high educational level of all three samples suggests that our samples were particularly career-oriented. Maybe, couples in which both

partners do not only hold jobs but are both highly committed to their jobs (so called dual-career couples, Hammer, et al., 1997) could be more prone to a crossover of job-related self-evaluations. Second, people with a higher education and particularly people who work in academia might have an above-average degree of autonomy in their jobs. Maybe, for people whose jobs are characterized by lower degrees of autonomy, altered job-related self-evaluations may not as easily become apparent in altered work-related behavior.

On the other hand, however, more heterogeneous samples with respect to their education might also lead to even clearer results. As people with high self-esteem and self-efficacy are likely to exhibit positive work-related behavior and to have high career success (Abele & Spurk, 2009; Pierce & Gardner, 2004; Stajkovic & Luthans, 1998) they also should be more likely to have higher academic success. Thus, the high educational level throughout our samples could also have caused indirect range restrictions with above-average means and smaller standard deviations in job-related self-evaluations (Schmidt, Shaffer, & Oh, 2008). As this range restriction reduces the variability in the central constructs, it might have been even harder to find the crossover effects we revealed throughout the studies.

Thus, future research should try to replicate the findings of this dissertation using samples of couples with more heterogeneous educational backgrounds in order to draw more generalizable conclusions.

Practical Implications and Future Research

This dissertation offers some important implications for practice and research that I would like to discuss in the following.

Implications for practice.

Concerning its practical implications, the present dissertation once again stresses the

importance of job-related self-evaluations in the work context as all three studies consistently showed positive relations between participants' job-related self-evaluations and work engagement. Work engagement is a central work-related state of mind and is related to a number of positive performance-related outcomes (Salanova, et al., 2005; Sonnentag, 2003; Xanthopoulou, et al., 2009b). Thus, organizations should try to foster employees' self-esteem and self-efficacy as this is beneficial for employees and organizations alike. For example, the positive relation between individuals' job performance perception and self-esteem found in Study 1 indicates positive performance feedback as a promising means (Crocker, et al., 2003).

Another major implication of the present dissertation is that sources of employees' job-related self-evaluations can also lie in their private lives. Although job-related self-evaluations surely can be affected by experiences at work, this dissertation emphasizes the importance of sources of individuals' job-related self-evaluations that lie in the non-work domain. Specifically, the results of the present dissertation should encourage organizations as well as employees themselves to keep in mind possible crossover processes of job-related self-evaluations.

On the one hand, this is important to be able to avoid negative consequences of crossover processes. As the positive relation between both partners' job-related self-evaluations suggests in all three studies, the crossover of job-related self-evaluations does not necessarily need to be beneficial for both partners: A partner with low self-esteem and self-efficacy can also negatively impair his or her partner. First, this is central to know for individuals in dual-earner relationships. For example, when realizing that their partner currently goes through a rough patch at work, keeping in mind possible risks of negative crossover processes could help individuals to be less easily affected. Second, raising the awareness of potential risks of the crossover of low job-related self-evaluations can also help managers to recognize negative crossover processes in time and to actively counteract against

them. For example, as the results of Study 1 and Study 2 suggest, increasing employees' general level of self-esteem over time could make them less susceptible to negative crossover processes. A leadership style that conveys high performance expectations, a supportive climate, and internal attributions of employees' successes thereby has been found to foster employees' self-expectations (Eden, 1992).

On the other hand, being aware of the chances of the crossover of job-related self-evaluations between partners can also help to change organizations' view on the compatibility of two partners' careers. Thus, instead of seeing employees' work and non-work lives as two conflicting domains, the results of this dissertation emphasize the chances of two partners pursuing independent careers. This perspective becomes increasingly important with the percentage of dual-earner relationships constantly increasing (Ilies, et al., 2007). Thus, creating a supportive work environment could help employees to benefit from the chances of the crossover of job-related self-evaluations. In this context, giving employees sufficient free time seems especially important. Enough time away from work has already been shown to be beneficial for employees and organizations alike in the context of recovery research (Sonnentag, 2003). The results of the present dissertation suggest that spending time away from work could additionally have salutary effects as it offers the possibility to spend it with one's partner – which surely is a premise for crossover processes to happen. Consequently, an interesting question for future research would be how much time with one's partner is actually needed to enable the crossover of job-related self-evaluations. Furthermore, the results of Study 1 suggest that the crossover of self-esteem can even take place on a daily basis underlining the importance of the daily interaction between partners. Finally, as the results of Study 1 and Study 2 indicate, the crossover of job-related self-evaluations ideally can result in an interindividual upward spiral over time. This means that interacting with one's partner can increase one's own job-related self-evaluations which can positively affect one's work-related

behavior. This, in turn, can increase one's job-related self-evaluations and can then again be transmitted to one's working partner.

Implications for research.

This dissertation extends former crossover research as it integrates job-related self-evaluations into the crossover framework. As the idea of self-esteem and self-efficacy crossover is novel to crossover research, the results of the present dissertation bring along interesting questions for future research.

First, as shortly mentioned in the previous section, it still remains unanswered how much time with one's partner is actually needed to initiate the crossover of job-related self-evaluations. The definition of crossover processes by Westman (2001) implies that two people have to be closely related in order for crossover effects to happen. However, it is still unclear how much actual interaction time is required. Presumably, the time needed for the crossover of job-related self-evaluations might even differ depending on the construct in question. As the results of Study 1 to Study 3 suggest, different mechanisms seem to account for the crossover of self-esteem and self-efficacy, respectively. Thus, if the crossover of self-esteem at least partly should be caused by a direct, empathic reaction it could resemble to the phenomenon of mood contagion which can happen immediately by mimicking "patterns of facial, postural, and behavioral expressions" (Neumann & Strack, 2000, p. 211). By contrast, the crossover of job-related self-efficacy might require more actual interaction time with one's partner as the mediators vicarious experience and especially verbal persuasion suggest. Thus, taking a closer look at the interaction time required for the crossover of self-esteem and self-efficacy constitutes an interesting avenue for future research.

Second, in order to give more precise practical advice how to foster positive crossover processes and how to reduce the risk of negative crossover processes, more moderators

influencing the strength of the crossover of job-related self-evaluations need to be identified. Especially, concerning the crossover of self-efficacy, the present dissertation focused on mediators in the crossover process and thereby left open the question of possible moderating variables. In this context, focusing on a person's boundary management strategies (Ashforth, Kreiner, & Fugate, 2000) appears promising. According to Boundary Theory (Ashforth, et al., 2000), people differ in the extent to which they integrate their working lives into their private lives and vice versa. Thus, a spillover of high job-related self-evaluations from a person's working into his or her private life and consequently its transmission to his or her partner might be more likely to occur if a person tends to integrate both life domains. In line with this assumption, individuals' tendency to integrate both life domains has already been found to moderate the spillover of job satisfaction (Ilies, Wilson, & Wagner, 2009) and therefore might also influence the strength of the spillover of other work-related experiences. Finding boundary strategies to moderate the crossover of job-related self-evaluations could bring along important practical implications as organizations could actively influence the extent to which they offer supplies to integrate both life domains (Kreiner, 2006).

Third, Study 1 and Study 2 did not reveal explicit mechanisms underlying the crossover of self-esteem. As mentioned earlier, this is partly due to the fact that compared to the crossover of self-efficacy, the crossover of self-esteem seems to be a more direct process like a direct empathic reaction (Westman, 2001). However, as the explanations accounting for crossover processes are not mutually exclusive (Westman, 2001), self-esteem crossover could additionally result from more indirect processes. One promising avenue for future research thereby could be to focus on social comparison processes in romantic relationships. Although social comparisons have been found to occur between partners (Pinkus, et al., 2008), still relatively little is known about causes and consequences of social comparison processes in romantic relationships. As research by McFarland et al. (2001) suggests, upward social

comparison processes within romantic relationships typically lead to assimilation effects (i.e.,

positive reactions) as people within romantic relationships see their partner as a central

component of their own identity. Thus, the partner's success is experienced similarly as one's

own success which might partly cause a crossover of self-esteem. But - even in close

relationships - do upward social comparisons always have to lead to assimilation effects?

McFarland et al. (2001) revealed that even within so-called identity relationships (where the

partner is seen as part of one's own identity), implicit comparison feedback (i.e., feedback

that did not imply information about the own ability or performance) resulted in stronger

assimilation effects than explicit comparison feedback. Perhaps, for partners working in very

similar jobs, the partner's success can be more easily compared to one's own performance and

therefore might convey self-relevant information on one's own abilities more explicitly. As a

result, the success of one's partner who works in a similar occupational field might not lead to

assimilation effects - even if he or she is very close to oneself. Thus, the similarity of both

partners' occupations might be an additional moderator influencing the strength and direction

of the crossover of self-esteem.

Finally, a related question for future research emerging from the present dissertation is

if job-related self-evaluations can also cross over between colleagues at work. Crossover

processes do not only take place between romantic partners but generally can occur between

two closely related people (Westman, 2001). For example, work engagement has been shown

to cross over between partners in romantic relationships (Bakker & Demerouti, 2009; Bakker,

et al., 2005) and colleagues at work (Bakker & Xanthopoulou, 2009) alike. Thus, it would be

a promising avenue for future research to examine a possible crossover of job-related self-

evaluations among colleagues. It thereby surely depends on the mechanism underlying the

crossover process in question if a crossover process also accounts for colleagues at work. For

example, vicarious experience and verbal persuasion that have been found to be the mediators

within the crossover of self-efficacy in Study 3 could most probably operate between colleagues as well. In line with this assumption, vicarious experience and verbal persuasion have already been investigated as sources of individuals' self-efficacy in the work context (Eden & Kinnar, 1991; Mellor, et al., 2006). By contrast, if social comparison processes should at least partly underlie the crossover of self-esteem, perceiving a colleague having high self-esteem might even cause negative reactions within an employee. As McFarland et al. (2001) postulated and found, the upward social comparison with a successful other only led to assimilation effects in identity relationships. By contrast, in less close relationships (like in normal friendships) upward social comparison could even have the opposite effect, leading to so-called contrast effects (see also Self-Evaluation Maintenance Model, Tesser, 1988). Thus, the possibility of both assimilation and contrast effects between colleagues with respect to their job-related self-evaluations raises interesting questions for group processes in organizations and therefore underlines the importance of examining how one colleague's high or low job-related self-evaluations might affect his or her co-workers.

General Conclusion

The present dissertation aimed to broaden the view on causes of individuals' job-related self-evaluations. Besides sources of a person's job-related self-evaluations that lie in the direct work context, this dissertation's main focus lied on the role of a person's working partner for his or her self-esteem and self-efficacy. In three empirical studies it could be shown that both self-esteem and self-efficacy can be transmitted between working partners. Furthermore, besides examining direct crossover processes within dual-earner relationships, this dissertation additionally aimed to clarify circumstances that facilitate the crossover of self-esteem as well as mechanisms that underlie the crossover of self-efficacy.

In sum, the results of the present dissertation suggest the conclusion that a person's job-related self-evaluations do not stay at work but can be carried over to the home domain where they can cross over to a person's partner who also works. The altered job-related self-evaluations experienced by the partner at home can then again be carried over to the work domain and thereby affect the partner's working behavior. These results imply that a person can profit from his or her partner's high job-related self-evaluations and therefore implicate that dual-earner relationships can bring along benefits that have not been considered until now. Furthermore, the present dissertation underpins the importance of fostering employees' job-related self-evaluations as they do not only directly affect a person's working behavior but also most probably can initiate a positive upward spiral between working partners – a circuit that is beneficial for employees and organizations alike.

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Eigenabgrenzung

Diese Dissertation besteht aus drei empirischen Studien, die in eigenen Kapiteln dargestellt sind. Die allgemeine Einleitung sowie die abschließende Diskussion betten diese Studien in einen gemeinsamen Zusammenhang ein. Alle inhaltlichen und konzeptionellen Arbeiten, Datenaufbereitung und Datenauswertung sowie Interpretation und schriftliche Darstellung der Ergebnisse wurden eigenständig und ausschließlich von mir unter der Betreuung von Frau Prof. Dr. Sabine Sonnentag und Frau Prof. Dr. Cornelia Niessen geleistet. Ich habe mich dabei keiner anderen als der von mir ausdrücklich bezeichneten Quellen und Hilfen bedient und wörtlich oder inhaltlich übernommene Stellen als solche kenntlich gemacht. Die weitere bei den einzelnen Studien aufgeführte Koautorin Dana Unger trug als Diskussionspartnerin sowie durch die Kooperation bei der Datenerhebung bei Studie 1 und Studie 2 zu den Studien bei. Die Daten der ersten und der zweiten Studie wurden im Rahmen des von der DFG-Exzellenzinitiative geförderten Forschungsprojektes „Individuelle und institutionelle Fördermöglichkeiten von Doppelkarrieren" erhoben. An der Datenerhebung dieser beiden Studien wirkten Eva Barnewitz, Rebecca Endtricht, Sabrina Engel, Tabea Friedemann, Kerstin Funke, Daniela Garten, Marion Halder, Anja Haubold, Stephanie Hoss, Stefan Keller, Laura Loy, Kerstin Müller, Isabelle Rek, Eva Stephany, Bettina Sutter, Nina Tank und Julia-Maxie Zelfel als studentische Hilfskräfte mit.