

**The longer your work hours, the worse your relationship? The role of selective optimization with compensation (SOC) in the associations of working time with relationship satisfaction and self-disclosure in dual-career couples**

*Dana Unger, Sabine Sonnentag, Cornelia Niessen and Angela Kuonath*

**Abstract**

This two-wave panel study investigates the associations between working time, selective optimization with compensation (SOC) in private life, and relationship outcomes (i.e., relationship satisfaction and self-disclosure) in dual-career couples. We propose that one partner's SOC in private life either mediates or moderates the association of both partner's working time and relationship outcomes (i.e., relationship satisfaction and self-disclosure). Moreover, we postulate the crossover (i.e., transmission) of relationship satisfaction and self-disclosure within the couple. To test these hypotheses, we conducted an online study with a time lag of six months, in which 285 dual-career couples took part. We found evidence for SOC in private life as a mediator: Working time spent by partners in dual-career couples was associated with SOC in their private life that, in turn, predicted relationship satisfaction and self-disclosure. Results did not support the assumption that one partner's SOC in private life moderates the association between working time and relationship satisfaction and self-disclosure. Relationship satisfaction, but not self-disclosure, crossed over within the couples. The results challenge the assumption that longer work hours have negative consequences for romantic relationships.

**Keywords**

Working time, SOC, relationship satisfaction, self-disclosure, dual-career couple

## Introduction

Conventional wisdom assumes that long hours at work dry up employees' romantic relationships at home (cf. Gray, 2008). For dual-career couples this would be bad news. By definition, both partners in dual-career couples pursue their own careers (Hobfoll and Hobfoll, 1994), and career success is dependent on a substantial investment of time (Ng et al., 2005). Also, Greenhaus and Beutell's (1985) research on work-family conflict does not give much reason to be optimistic. These scholars have proposed that time demands stemming from the work domain deteriorate role performance in the home domain. Thus, conventional wisdom and research seem to suggest that partners in dual-career couples have to decide whether they would rather risk their careers or their romantic relationship. To empirically address this assumption, we examine the relationship consequences of longer working time. We choose a life-management perspective (cf. Baltes, 1997) and investigate selective optimization with compensation (SOC) in private life as a mediator and moderator of the association between working time and relationship outcomes (i.e., relationship satisfaction and self-disclosure) for *both* partners in dual-career couples. SOC refers to how individuals deal with scarce resources such as time, money, and energy and thereby contributes to an optimal functioning in various life domains (Bajor and Baltes, 2003; Wiese et al., 2002).

With our study, we pursue two goals. First, we examine whether SOC in private life mediates or moderates the effect of working time on relationship satisfaction and self-disclosure over the course of six months. Second, we investigate whether SOC's effects on these relationship outcomes are inter-individually transmitted within the couple.

Our contribution to the existing research is threefold. First, building on the literature of life management and self-regulation (Baltes, 1997; Kumashiro et al., 2008) as well as of work-to-family enrichment (Greenhaus and Powell, 2006), we question the assumption that working longer hours is hazardous for all romantic relationships. A positive or non-significant effect of working time on relationship outcomes would challenge the widespread idea that

## Associations between working time, SOC, and relationship outcomes

working time relates to unfavorable outcomes in the non-work domain. Therefore, our study attempts to help answer the question of whether dual-career couples should be hesitant to devote many hours to their work when they fear negative relationship consequences. Specifically, we analyze SOC in private life as a life-management strategy, which should either mediate or moderate the effect of one partner's (Partner A) working time on Partner A's relationship outcomes (relationship satisfaction and self-disclosure). Moreover, our study examines the relationship outcomes of both Partner A and the relationship outcome of the corresponding partner (Partner B).

Second, we contribute to the integration of life-management research with research on the work–life interface. In examining how work hours are associated with relationship outcomes via SOC in private life, we extend research by Baltes and Heydens-Gahir (2003). These authors investigated whether SOC at work and in the family domain relates to domain-specific demands. In our study, we examine how SOC in one's private life connects the work role and the private role. We reason that bringing research on life management and the work–life interface closer together is important because how employees deal with their scarce resources influences their performance and satisfaction in the two domains and, thus, their work–life balance (cf. Greenhaus and Allen, 2011).

Third, considering the intra-dyadic transmission of relationship satisfaction and self-disclosure, we add to the literature on crossover (Westman, 2001). We build on the emerging research on the crossover of positive affective-energetic states (Song et al., 2008) and of positive self-evaluations (i.e., job-related self-efficacy and self-esteem; Neff et al., 2012, 2013). It is important to find out whether the crossover premises also hold true for relationship satisfaction and self-disclosure because these constructs are genuinely relevant for couples and because they differ conceptually from the transient affective-energetic states and from self-evaluations. Research has shown that marital evaluations are linked in couples (Van Steenbergen et al., 2014; Westman et al., 2004). We aim at extending this research to

dual-career couples in our two-wave study. To test whether relationship satisfaction and self-disclosure cross over from Partner A to Partner B, we control for Partner B's baseline level of the pertinent variable. Summing up, our study investigates within-person effects (e.g., the association between Partner A's SOC in private life and Partner A's relationship satisfaction) and within-couple effects (e.g., the association between Partner A's and Partner B's relationship satisfaction).

In the next section, we explain the concept of SOC. We then describe two perspectives on its role in the association between working time and relationship outcomes. On the one hand, we hypothesize that SOC in private life mediates the association of working time and relationship outcomes. On the other hand, we present our argumentation for the alternative hypothesis that SOC in private life moderates the relationship between working time and relationship outcomes. Eventually, we derive the hypothesis that relationship outcomes cross over within couples.

### **Theoretical background**

Developed within the context of lifespan psychology, SOC theory describes how individuals can deal with resource limitations in order to achieve a maximum of desired states and to reduce the probability of negative outcomes (Baltes, 1997). SOC theory is a meta-theory that "is applicable to a large range of variations in goals and means" (Baltes, 1997: 372), implying that SOC is relevant for every life domain (cf. Baltes and Heydens-Gahir, 2003; Freund and Baltes, 2002). According to Baltes (1997), the three dimensions of SOC are important for a number of reasons: First, due to constraints in time and other resources, individuals cannot achieve everything they want, so they need to select their most important goals. Second, to attain important goals, individuals need to optimize their goal-relevant means: They need to invest their resources such as time, money, and energy during goal striving, as well as acquire and practice new skills that help them to be successful. Third,

## Associations between working time, SOC, and relationship outcomes

when goal-relevant resources are lost or diminished, individuals have to compensate for this deficit. They have to use other, formerly unused resources and need to acquire new skills to make sure that they still are able to attain their goals. It is important to keep in mind that these strategies are pursued jointly rather than independently (Zacher and Frese, 2011). Because “deficits can breed advances” (Baltes, 1997: 370), selection, optimization, and compensation can facilitate personal growth even when people are facing taxing conditions.

### *SOC in private life as the mediator of the relationship between working time and relationship outcomes*

Arguing that SOC in private life mediates the association between working time with relationship satisfaction and self-disclosure implies that SOC in private life is associated with the antecedent (i.e., working time) and its consequences (i.e., relationship outcomes). In the following, we present our theoretical rationale for this proposition. There is reason to assume that Partner A’s working time and SOC are positively related. When working many hours, employees optimize their chances to accomplish work goals (Kumashiro et al., 2008). But the more hours employees invest in their work, the less time they have available for the pursuit of personal and relationship goals (Goode, 1960). In this case, a disequilibrium of invested resources, accompanied by unpleasant tension, arises (Kumashiro et al., 2008). To reduce this tension, employees feel a need to restore the balance and to invest more of their remaining resources in the accomplishment of relationship goals. Investing attention, energy, and/or effort to attain a subset of goals are core aspects of SOC (cf. Baltes, 1997). There is also reason to assume that working time is associated with selection, optimization, and compensation as discrete dimensions. When time is scarce due to long working hours, it is not feasible for an employee to pursue multiple private-life goals simultaneously (e.g., a happy relationship, learning Spanish, and doing volunteer work). However, selecting a single goal (e.g., a happy relationship) increases the probability that the achievement of a private life goal

## Associations between working time, SOC, and relationship outcomes

is possible. Optimization is also related to how one invests one's resources (Baltes, 1997; Wiese et al., 2000). Because time is finite (Goode, 1960), spending much time in one domain (e.g., work) reduces time resources available in another domain (e.g., private life). Thus, employees with long work hours need to optimize how they allocate their other, non-time-based resources. Finally, compensation takes place whenever a set of goal-related resources is lost (Baltes, 1997). Because dealing with scarce time resources in one's private life and losing other means relevant for private goals is very stressful (Hobfoll, 2001), employees with longer work hours are likely to feel more pressure to compensate for the loss of private goal-relevant resources with newly generated means (e.g., hiring an au pair). To sum up, long working hours increase the salience of selecting a smaller number of goals in private life, optimizing one's resources in private life, and compensating for time scarcity by utilizing alternative means.

We also argue that Partner A's SOC in private life can benefit his or her relationship with Partner B because it facilitates goal attainment during leisure time and, thus, improves relationship outcomes (cf. Wiese et al., 2000). For most young and middle-aged adults, being a romantic partner is one of the most important life roles (Wiese et al., 2000). Thus, relationship satisfaction, or the evaluation of the quality of one's relationship (Norton, 1983), is likely to be highly important for most young and middle-aged adults. Accordingly, SOC in private life is likely associated with selecting relationship goals over other goals pursuable during leisure time. Romantic partners who actively apply SOC in their private life are better able to invest energy in their relationship because utilizing SOC strategies reduces the number of other resource-consuming demands in their leisure time (Baltes and Heydens-Gahir, 2003). Furthermore, devoting one's scarce time resources to the relationship (i.e., an aspect of optimization; Baltes, 1997) has shown to have beneficial effects on the evaluation of the partnership because romantic partners enjoy shared activities (Sullivan, 1996). Unfortunately, romantic partners also experience relationship conflicts (Vinokur and Van Ryn, 1993). Baltes

## Associations between working time, SOC, and relationship outcomes

(1997: 372) listed compensation strategies that are helpful in stabilizing relationship satisfaction once other resources are lost: increasing one's expenditure of effort and energy, acquiring new (communication) skills, and seeking social support. Thus, we propose that

H1a: Partner A's SOC in private life mediates the positive indirect effect of Partner A's working time on Partner A's relationship satisfaction.

Self-disclosure, or the sharing of personal information, is vital for the well-being of individuals and it strengthens trust and intimacy in romantic relationships (Chaudoir and Fisher, 2010). Thus, self-disclosure is not only important in its own right but also relevant for achieving higher-order relationship goals. When a partner selects relationship-related goals in the private life or is concerned about his or her well-being, he or she should be prone to engage in self-disclosing behavior. But disclosing oneself is demanding and effortful because it requires willpower, lack of distractions and communication skills to talk about private thoughts, feelings, and needs (Chaudoir and Fisher, 2010). Furthermore, to attain depth and breadth in a disclosing conversation, one needs to invest time. Accordingly, optimization facilitates the time and focus required for self-disclosure. Finally, expressing one's private thoughts and feelings can engender misunderstandings, miscommunication and other problems. In such cases, it is beneficial to increase effort to compensate for non-optimal communication. Therefore, we hypothesize that

H1b: Partner A's SOC in private life mediates the positive indirect effect of Partner A's working time on Partner A's self-disclosure.

Also, from an enrichment perspective (Barnett and Hyde, 2001; Greenhaus and Powell, 2006), it makes sense that working time and relationship outcomes are (indirectly)

## Associations between working time, SOC, and relationship outcomes

positively related. In their expansionist theory, Barnett and Hyde (2001) argued that accumulating roles (e.g., being an employee and being a lover) has a positive effect on the health of a romantic relationship. In their work–home-enrichment model, Greenhaus and Powell (2006) developed this idea further and came to the conclusion that participation in one domain can provide beneficial positive experiences in another domain.

### *SOC in private life as the moderator of the relationship between working time and relationship outcomes*

Whereas there are reasons to assume that SOC in private life mediates the association between working time and relationship outcomes, a moderating effect of SOC in private life is also conceivable. It might be particularly detrimental to employees' relationship satisfaction and self-disclosure if they spend long hours at work *and* show a low level of SOC in private life. Empirical research (Jopp and Smith, 2006; Schmitt et al., 2012) has found that SOC buffers the negative effects of demands on satisfaction and well-being outcomes because it helps to optimize the use of personal resources for achieving personal goals in taxing situations. Thus, the attainment of personal goals should be less affected by long working hour when an employee engages in SOC in his/her private life. When employees with long work hours insist on pursuing multiple private goals (i.e., fails to select), they have to divide their private time into small intervals to pursue those concerns. The attainment of every single goal is impaired because sufficient time is not available for effective self-regulation when pursuing these goals (cf. Kumashiro et al., 2008), as well as the energy and attention necessary to accomplish them (i.e., typical optimization behaviors; Baltes, 1997). In such cases, time and energy as two of the most important personal resources for goal attainment are lacking (cf. Kumashiro et al., 2008). Also, the successful attainment of private goals is hindered when employees with limited time resources in their private life do not compensate



## Associations between working time, SOC, and relationship outcomes

for the loss of other resources. This leads to a decrease of means required to accomplish one's goals due to a resource loss spiral (Hobfoll, 2001).

A combination of long working hours and a low engagement in SOC in private life could be particularly detrimental to relationship satisfaction. When one partner (Partner A) lacks time in his or her private life and nevertheless pursues multiple private goals, he or she is hindered to enjoy joint activities and spend quality time with his or her partner (Partner B) (cf. Sullivan, 1996). It is also very complicated for Partner A to solve arising relationship problems when he or she invests the time, energy and/or other resources necessary to address these problems. In line with this reasoning, Drigotas et al. (1995) found such withdrawing oneself from the relationship to be destructive when there are problems with the partner. When conflicts persist over time, important resources of the relationship such as trust can suffer. In such a situation, SOC is particularly important. When, however, Partner A cannot spend a lot of time with Partner B and he or she does not compensate the loss of trust (e.g., by trying harder or by seeking help), the partners may grow away from each other. Therefore, we propose that

H2a: Partner A's SOC in private life moderates the relationship between Partner A's working time and relationship satisfaction in such a way that the relationship between working time and relationship will be less negative when SOC in private life is high.

Also, when it comes to self-disclosure, an interaction of long working hours and a low level of engagement in SOC behavior might be particularly hazardous. Chaudoir and Fisher (2010) describe that self-disclosure is facilitated when time is available. Thus, an employee's long working hours should be negatively associated with self-disclosure when the employee does not allocate his or her remaining time to the relationship as a high-priority goal. Besides time, disclosing thoughts and feelings also requires effort (Chaudoir and Fisher, 2010).

## Associations between working time, SOC, and relationship outcomes

Consequently, an employee's self-disclosure should be particularly low when they work long hours and do not invest energy in creating situations that allow for self-disclosure. Thus, we propose that

H2b: Partner A's SOC in private life moderates the relationship between Partner A's working time and self-disclosure in such a way that the association between working time and self-disclosure will be less negative when SOC in private life is high.

### *The transmission of relationship outcomes within romantic couples*

Research on the crossover of psychological states (Westman, 2001) has suggested that relationship outcomes transmit from one partner to the other within romantic couples. Exemplified by the transmission of strain, Westman (2001) described three mechanisms for how psychological states cross over within dyads. First, direct crossover takes place when Partner A's strain induces an empathic reaction in Partner B. Thus, Partner B's strain level also rises. Second, the positive association between the psychological states of Partner A and Partner B can be spurious. Couples share many experiences (e.g., conflicts with their children), which elicit the same consequences in both partners and create a correlation between the partners' psychological states. Third, indirect crossover occurs when Partner A's psychological state has an impact on another variable, which in turn evokes the same psychological state in Partner B. Transmission in close dyads occurs not only with respect to negative psychological states (Westman, 2001), but also with respect to positive states (Bakker and Demerouti, 2009; Neff et al., 2013; Song et al., 2008). Building on this research, we examine whether relationship satisfaction and self-disclosure cross over within dual-career couples.

Kelley and colleagues (1983) suggested that relationship evaluations cross over because relationship evaluations are expected to be both antecedents and consequences of

behavioral interaction in relationships. Accordingly, when Partner A is satisfied with his or her relationship, he or she engages more in rewarding behavior during the interaction (Swensen, 1972) and less in punishing behavior (Schoebi et al., 2012). For example, when satisfied with the relationship, Partner A might propose a compromise during an argument. In turn, Partner B's benevolent cognitive response to the interaction will beneficially influence his or her own subsequent behavior (Karney and Bradbury, 1995). Therefore, we propose a positive association between Partner A's and Partner B's relationship satisfaction:

H3a: Partner A's and Partner B's relationship satisfaction are positively associated.

We argue that self-disclosure also crosses over in close dyads (cf. Kelley et al., 1983) because Partner A's self-disclosure evokes beneficial relationship evaluations in Partner B (Cozby, 1973), who infers Partner A's love (cf. Swensen, 1972). Partner B's positive evaluations, in turn, should result in self-disclosing behavior by Partner B. Experiments (Forgas, 2011) support the hypothesis that personal self-disclosure is triggered when close others start to self-disclose. In line with this research, we propose that

H3b: Partner A's and Partner B's self-disclosure are positively associated.

## **Method**

### *Procedure and sample<sup>1</sup>*

To recruit dual-career couples, we attempted to contact 6,148 persons by phone who worked at German universities to invite them to participate in the study and to ask them whether they fulfilled the relevant study criteria. If they did not answer our phone call after at least two trials, we sent them an email. A total of 3,728 (60.64%) persons responded to our calls or emails. Among them, 1,127 academics (30.23%) could not participate because they

## Associations between working time, SOC, and relationship outcomes

did not fulfill our requirements: they did not work at the postdoctoral level, they had no (working) partner, they were about to retire very soon, or they had only a poor command of German—the language of the questionnaires. Of the 2601 who did qualify, 1,856 persons (or their partners) were not interested in participating in our study. Finally, 745 academics agreed to participate in our study together with their partner.

We focused on academics because they fulfilled the following requirements: they were relatively homogeneous in education and age, had relatively long work hours, and had a high degree of discretion in working time (Shockley and Allen, 2010). We desired a sample with high time control to ensure that some, but not all participants worked long hours. Participants responded to three online questionnaires at two points in time. At Time 1, the couples answered an initial demographic questionnaire and a second questionnaire that assessed our study variables. After they had filled in these two questionnaires, we sent them a link to a third questionnaire six months later at Time 2.

Of the initial 745 couples, at Time 1, 660 couples (88.59%) completed the first demographic questionnaire and 534 couples (71.68%) answered the second questionnaire assessing our study variables. At Time 2, 343 couples (46.04% of the initial 745 couples) completed the third questionnaire. We excluded three couples from our analyses because they broke up their relationship between Time 1 and Time 2. Furthermore, we disregarded the data of 15 couples because either one partner was retired or unemployed. In addition, we did not consider data of 29 couples in which one partner was on parental leave. Finally, to establish a certain degree of homogeneity in our sample, we required at least one partner per couple to hold a doctoral degree and to work in academia. We had to exclude eleven couples that met only one of these two conditions. Our final sample was comprised of 285 couples (570 individuals; 38.26% of the initial 745 couples).

Mean age in our sample was 38.77 years ( $SD = 7.22$ ). Our respondents reported working 44.27 hours per weeks on average ( $SD = 11.03$ ), whereas their contract working time

## Associations between working time, SOC, and relationship outcomes

was 35.35 hours ( $SD = 8.55$ ). In total, 383 persons (67.20%) worked in academia, whereas 187 did not. Of those 187 respondents not working in academia, 93 persons (49.73%) pursued academic professions such as teacher or lawyer. Furthermore, 66 persons (35.29%) had a managerial/technical profession (e.g., IT consultant, engineer).

In total, 98 of 285 respondents (34.39%) working in academia were in a relationship with someone who also worked in academia. A majority in our sample regularly cohabited with their partner (217 couples, 76.14%). Mean length of relationship was 11.91 years ( $SD = 7.90$ ), and 181 couples were married (63.51%). A mean number of 0.76 children were living with the couples ( $SD = 0.98$ ). Five out of 285 couples were same-sex couples (1.75%).

### *Measures*

*Study variables.* We operationalized Partner A's *working time* with the daily number of hours spent on working at Time 1. At Time 1, we measured Partner A's general *SOC in private life* with nine items assessing elective selection, optimization, and compensation from the short version of the SOC questionnaire (Baltes et al., 1999). Partially overlapping with elective selection ( $r = .76$ ; Freund and Baltes, 2002), we did not measure loss-based selection to reduce participants' burden. The items had binary response options (e.g., 1 = "In general, I divide my energy among many things." and 2 = "In general, I concentrate all my energy on few things."). As suggested by Baltes and colleagues (1999), we adapted the instruction of the items and measured general SOC in private life only. The internal consistency was .65.

We used the four-item Couples Satisfaction Index (e.g., "How satisfied are you with your relationship?"; Funk and Rogge, 2007) to measure general *relationship satisfaction* at Time 1 and current relationship satisfaction at Time 2. The rating scale ranged from 1 = *not at all* to 5 = *completely*. Cronbach's alphas were  $\alpha = .87$  at Time 1 and  $\alpha = .86$  at Time 2.

Participants' reported general *self-disclosure* at Time 1 and current self-disclosure at Time 2 with five items (e.g., "I express a need, wish, or want") from the self-disclosure scale

## Associations between working time, SOC, and relationship outcomes

of Prager and Buhrmester (1998). Cronbach's alpha was .82 at Time 1 and .85 at Time 2. The rating scale ranged from 1 = *not true at all* to 5 = *very true*.

*Control variables.* At the *couple level*, we controlled for three demographic variables when predicting SOC in private life and relationship outcomes. We included *length of relationship* in years as a proxy of relationship stability as a control variable because, generally, successful couples who (a) work long hours, (b) show a high level of SOC in private time, and (c) have good relationship outcomes might outlive couples whose relationship is not so successful. Furthermore, many partners who took part in our dual-career study were both working in academia. It is conceivable that in these couples, rationality (cf. Weber, 1930) was particularly predominant, so that they tend to work long hours and to engage in selection, optimization, and compensation to attain goals and minimize relationship risks. Also, the psychological attributes of these couples were likely to be more similar than those of the other couples because they worked in the same environment. Because similarity in psychological attributes is associated with relationship evaluations (Houts et al., 1996), we controlled for *both partners in academia* (1 = *no*; 2 = *yes*) when predicting the relationship outcomes. Because parenthood increases the responsibility for others and is furthermore associated with a decline in relationship quality (Bradbury et al., 2000), we included the *number of children* as a control variable.

At the *person level*, we controlled for *age* to rule out the effects of the more routinized life management of older people on the associations between predictor and outcome variables. We also included gender as a control variable to take into account the different gender norms. Furthermore, because Partner A might be prone to engage in SOC in private life to compensate for Partner B working long hours, we assessed *Partner B's working time* (Time 1) to control for its concurrent effects on Partner A's SOC. Finally, we included Partner A's relationship outcomes (i.e., relationship satisfaction and self-disclosure) at Time 1 as a

predictor of his or her relationship outcomes at Time 2 to account for any change in the outcome variables.

In line with the recommendations by Aguinis and Vandenberg (2014), we ran the regression analyses with and without control variables; both analyses yielded the same results.

*Construct validity.* We ran several multilevel confirmatory analyses (CFA) to ensure that relationship satisfaction and self-disclosure represented distinct constructs. To test the accuracy of the hypothesized factor solutions, we conducted the Satorra–Bentler (S–B) scaled  $\chi^2$  difference test (Satorra and Bentler, 1999). At Time 1, we included SOC in private life, general relationship satisfaction, and self-disclosure in the CFA. The results revealed that the 3-factor solution ( $\chi^2 = 278.343$ ,  $df = 129$ , RMSEA = 0.045, CFI = 0.949) fit the data better than the best-fitting 2-factor solution (S-B  $\Delta\chi^2 = 283.745$ ,  $\Delta df = 2$ ,  $p < .001$ ) and the 1-factor solution (S-B  $\Delta\chi^2 = 608.863$ ,  $\Delta df = 4$ ,  $p < .001$ ). At Time 2, we included current relationship satisfaction and current self-disclosure in the CFA and found that the 2-factor solution ( $\chi^2 = 94.411$ ,  $df = 26$ , RMSEA = 0.068, CFI = .963) showed a better fit than the 1-factor solution (S-B  $\Delta\chi^2 = 212.565$ ,  $\Delta df = 1$ ,  $p < .001$ ).

#### *Data analyses*

To account for the nestedness of our data, we applied hierarchical linear modeling (Bryk and Raudenbush, 1992). Furthermore, we applied the actor–partner interdependence model (APIM) to examine effects that take place within one partner and within the dyad (Kenny et al., 2006). Because actor effects within APIM refer to effects that occur within one person (the actor), APIM can specify how partner A’s working time is associated with partner A’s SOC. We took advantage of the dyadic structure of our data and computed two actor effects per couple (one for each partner). Because partner effects within APIM also refer to effects of Partner A on Partner B (the relationship between actor’s antecedent and partner’s

outcome), we also analyzed two partner effects per couple. For example, when testing crossover effects in heterosexual couples, our analyses reflect simultaneously how *her* self-disclosure crosses over to *him* and how *his* self-disclosure crosses over to *her*.

## Results

Table 1 shows the means, standard deviations, and zero-order correlations of all variables.

-----  
INSERT TABLE 1 ABOUT HERE  
-----

For all variables at Level 1, we examined the variability at the individual level and at the couple level. Working time and SOC in private life at Time 1 varied mostly within couples, with 91.49% and 99.84% of the variability being at the individual level. For relationship satisfaction, 52.43% (Time 1) and 61.63% (Time 2) of overall variability were at the individual level. With respect to self-disclosure at Time 1 and Time 2, 75.73% and 77.67% of the variability were at the individual level.

### *Hypotheses testing*

Hypotheses 1a and 1b proposed that the positive association between Partner A's working time at Time 1 and Partner A's current relationship satisfaction as well as self-disclosure at Time 2 is mediated by Partner A's SOC in private life at Time 1. To test the association between Partner A's working time and SOC in private life, we conducted a multilevel regression analysis. First, we entered the control variables in Model 1 and compared it with an intercept-only model. Then, we compared Model 1 with Model 2, in which we entered Partner A's SOC in private life. Table 2 shows the results of the model



## Associations between working time, SOC, and relationship outcomes

comparisons as well as the unstandardized estimates, standard errors, and *t*-values for all models predicting SOC in private life.

-----

INSERT TABLE 2 ABOUT HERE

-----

Model 1—with the control variables relationship length, both partners in academia, number of children at home, Partner A's age and gender, and Partner B's working time—fit the data better than the null model ( $\Delta -2 \times \log = 17.19$ ,  $df = 6$ ,  $p < .01$ ). Number of children was negatively associated with SOC in private life. Entering Partner A's working time in Model 2 resulted in an improved model fit in comparison to Model 1 ( $\Delta -2 \times \log = 12.48$ ,  $df = 1$ ,  $p < .001$ ). The longer Partner A's working time, the higher was Partner A's SOC in private life. Furthermore, to test Hypotheses 1a and 1b, we analyzed whether there were positive associations between Partner A's SOC in private life at Time 1 and Partner A's current relationship satisfaction and self-disclosure at Time 2. Table 3 depicts the results of the analyses.

-----

INSERT TABLE 3 ABOUT HERE

-----

For both outcomes, Model 1—with the control variables of relationship length; both partners in academia; number of children at home; and Partner A's age, gender, working time, general relationship satisfaction, and self-disclosure—fit the data better than the null model (model comparison results for relationship satisfaction:  $\Delta -2 \times \log = 442.99$ ,  $df = 7$ ,  $p < .001$ ; model comparison results for self-disclosure:  $\Delta -2 \times \log = 415.86$ ,  $df = 7$ ,  $p < .001$ ). The higher Partner A's relationship satisfaction and self-disclosure were at Time 1, the higher Partner A's reports of these variables were six months later at Time 2. In the final analysis step, we included Partner A's SOC in private life at Time 1 to predict relationship satisfaction

## Associations between working time, SOC, and relationship outcomes

and self-disclosure at Time 2. For both outcomes, Model 2—which included SOC in private life at Time 1—showed a better fit than Model 1 (model comparison results for relationship satisfaction:  $\Delta -2 \times \log = 17.48$ ,  $df = 1$ ,  $p < .001$ ; model comparison results for self-disclosure:  $\Delta -2 \times \log = 7.36$ ,  $df = 1$ ,  $p < .01$ ). Partner A's SOC in private life at Time 1 was a significant predictor of relationship satisfaction and self-disclosure at Time 2. These results also support the proposition that Partner A's SOC in private life at Time 1 mediates the effects of Partner A's working time at Time 1 on his or her current relationship outcomes at Time 2.

We applied bootstrapping in SPSS 19 (Preacher and Hayes, 2008) to conclusively test Hypotheses 1a and 1b. The indirect effect of Partner A's working time at Time 1 on this partner's relationship satisfaction at Time 2 via SOC in private life was .0045, 95% CI [.0017, .0092]. The indirect effect of working time at Time 1 on self-disclosure at Time 2 through SOC in private life was .0027, 95% CI [.0004, .0063]. Thus, data supported Hypotheses 1a and 1b.

Whereas we stated in Hypotheses 1a and 1b that SOC in private life mediates the indirect effect of working time on relationship outcomes, Hypotheses 2a and 2b proposed that Partner A's SOC in private life moderates the relationship between Partner A's working time and his or her relationship outcomes. To test these hypotheses, we entered the interaction term of Partner A's working time at Time 1 and SOC in private life at Time 1 in Model 3 when regressing the relationship outcomes on the predictors (see Table 3). Adding the interaction term did improve the prediction of neither Partner A's relationship satisfaction at Time 2 ( $\Delta -2 \times \log = 2.03$ ,  $df = 1$ ,  $ns$ ) nor self-disclosure at Time 2 ( $\Delta -2 \times \log = 0.13$ ,  $df = 1$ ,  $ns$ ). Thus, we rejected Hypotheses 2a and 2b.

Hypotheses 3a and 3b proposed that Partner A's relationship outcomes at Time 2 positively relate to Partner B's concurrent relationship outcomes. As shown in Table 4, adding the control variables relationship length, both partners in academia, number of children at

## Associations between working time, SOC, and relationship outcomes

home, Partner A's SOC in private life at Time 1, Partner B's age and gender, and Partner B's pertinent relationship outcome at Time 1 in Model 1 increased the model fit in the two analyses (model comparison results for relationship satisfaction:  $\Delta -2 \times \log = 441.28$ ,  $df = 7$ ,  $p < .001$ ; model comparison results for self-disclosure:  $\Delta -2 \times \log = 415.25$ ,  $df = 7$ ,  $p < .001$ ).

-----

INSERT TABLE 4 ABOUT HERE

-----

The number of children related negatively and Partner B's general relationship satisfaction at Time 1 related positively to Partner B's relationship satisfaction at Time 2. Also, Partner B's general self-disclosure at Time 1 was positively associated with his or her own self-disclosure six months later at Time 2. Partner A's SOC in private life was not directly related to Partner B's relationship satisfaction ( $b = 0.04$ ,  $SE = 0.07$ ,  $ns$ ) or Partner B's self-disclosure ( $b = 0.03$ ,  $SE = 0.08$ ,  $ns$ ). In Model 2, we included Partner A's relationship outcome at Time 2 in Model 2. For the prediction of relationship satisfaction, Model 2 showed a better model fit than Model 1 (model comparison results for relationship satisfaction:  $\Delta -2 \times \log = 4.60$ ,  $df = 1$ ,  $p < .05$ ). As stated in Hypotheses 3a, Partner A's and Partner B's concurrent relationship satisfaction were positively associated. Bootstrapping analyses showed that the indirect effect of Partner A's SOC in private life on Partner B's relationship satisfaction through Partner A's concurrent relationship satisfaction was significant: .0614, 95% CI [.0216, .1161]. As mentioned above, we also tested if Partner A's SOC in private life directly related to Partner B's relationship satisfaction. The estimate was non-significant, suggesting that the benefits of Partner A's SOC in private life to the other partner is completely transmitted via Partner A's relationship satisfaction.

Adding Partner A's self-disclosure at Time 2 when predicting Partner B's concurrent self-disclosure did not increase the model fit in comparison to Model 1 ( $\Delta -2 \times \log = 3.41$ ,  $df = 1$ ,  $ns$ ). Thus, we had to reject Hypothesis 3b.

## **Discussion**

In this study, we investigated whether SOC in private life mediates or moderates the association of working time and relationship outcomes. Moreover, we examined the crossover of relationship outcomes in dual-career couples. Results were in line with the mediation hypotheses. Furthermore, we found evidence for the crossover of relationship satisfaction.

Our data supported the hypothesis that the working time of a person in a dual-career couple positively relates to this person's relationship satisfaction and self-disclosure via his or her own SOC in private life. Long hours at work seem to increase the salience of the SOC strategies because simultaneous goal attainment at work and at home is at stake when working long hours (Heckhausen et al., 2010; Kumashiro et al., 2008). SOC in private life, in turn, is positively associated with relationship satisfaction and self-disclosure. We argue that it is reasonable that employees select a smaller number of private goals when they work long hours because otherwise the success of goal pursuit would suffer. Furthermore, optimization and compensation of goal-related means become the dominant reactions to scarce time resources because of long work hours. The association of long work hours and SOC in private life sheds light on the way in which employees manage their different life roles. When investing many hours in their work—which is crucial in the pursuit of work-related goals (cf. Kumashiro et al., 2008)—employees seem to be aware that they cannot have it all in their private life and thus show high levels of SOC in this domain. These employees are well prepared to attain an optimal level of goals at work and at home. Dual-career couples seem to make a virtue out of a necessity when engaging in SOC in private life after long work hours, reflected in increased levels of relationship satisfaction and self-disclosure. The indirect positive effects of an employee's working time on his or her own relationship satisfaction and self-disclosure through SOC in private life are in line with the literature on work–family enrichment (Greenhaus and Powell, 2006), which emphasizes that participation in one domain can have positive consequences for the other domain. From this perspective, working time can

## Associations between working time, SOC, and relationship outcomes

be seen as a quantitative measure to capture participation in the work domain, facilitating the use of a personal resource (i.e., SOC in private life), which, in turn, has positive consequences for the home domain. Moreover, there was no negative association between working time and relationship satisfaction or self-disclosure.

However, we found no support for our moderation hypothesis stating that SOC in private life attenuates the negative associations between working time and relationship outcomes. This result is in line with many field studies that fail to find significant interaction effects (McClelland and Judd, 1993). Moreover, in our specific sample, working time showed positive zero-order correlations with relationship outcomes, as opposed to negative correlations that would make a moderator effect of SOC in private life most salient. Thus, it seems that in our sample of dual-career couples, long working hours triggered SOC in private life as an effective strategy to maintain a good romantic relationship. Our sample was predominantly composed of academics and therefore likely to be well equipped with self-regulatory and other resources such as rational problem-solving strategies and time control. These resources might have established the link between working time and SOC in private life. Academic work is excellent training for self-regulatory resources, as these resources are necessary to cope with constraints in a goal-pursuit process (cf. Muraven and Baumeister, 2000). Academics are used to the delay of gratification (cf. Mischel, 1996) because usually a reward (e.g., a publication) is not instantly contingent on goal-related behavior (e.g., writing the manuscript). Furthermore, employees working at the post-doctoral level in German universities mainly do not hold tenure-track positions. Thus, they are used to engaging in the goal-pursuit process while tolerating the uncertainty of whether their future lies inside or outside academia. For our sample, electing to work long hours beyond contract requirements implies that employees are engaged in self-directed goal pursuits at work. Once home, they possibly continued with the high level of self-regulatory behavior they displayed at work (cf. Edwards and Rothbard, 2000). In their overview of life-management processes, Haase et al.

(2013) back up this argument and categorized time investment and SOC in private life as a goal-engagement process. Furthermore, work in academia trains one's rational problem-solving strategies. Thus, when experiencing time constraints in one's leisure time due to long work hours, academics are likely to react to the arising salience of SOC by engaging in this rational behavior. Also, the high level of time control in academia (cf. Shockley and Allen, 2010) might contribute to the link between working time and SOC in private life. If employees voluntarily decide to work longer hours, the necessity to lower one's ambitions in their private life is likely obvious to them. For employees lacking this freedom to decide how long they want to work, the association of working time and SOC in private life is likely to be less strong.

Finally, even though results supported the hypothesis that relationship satisfaction crosses over in dual-career couples, we had to reject the proposition that Partner A's self-disclosure crosses over to Partner B. Our data were in line with Kelley et al.'s assumption (1983) that Partner A's favorable attitudes toward the romantic relationship facilitate positive dyadic interaction, which in turn improves Partner B's relationship satisfaction. However, our data did not show the corresponding process with respect to self-disclosure. Fishbein and Ajzen (1974) explained the gap between favorable attitudes toward an object (e.g., the partner) and overt behavior (e.g., self-disclosure) exists because "social norms, habits, other attitudes, personality characteristics, situational factors, etc., must also be taken into consideration" when predicting overt behavior (p. 60). Thus, even though Partner B's attitudes toward the relationship improved after Partner A's self-disclosure, constraints might have hindered Partner B from self-disclosing him- or herself.

#### *Limitations and future research*

Our study has some limitations. First, our research model could benefit from including additional variables. More specifically, it would be interesting to analyze time spent in the private domain, SOC at work, and work outcomes as additional variables in our model. When

## Associations between working time, SOC, and relationship outcomes

considering both directions from home to work and vice versa, one could assume that time spent in Domain X is positively associated with SOC in Domain Y, which in turn has positive outcomes for Domain Y (cf. Bajor and Baltes, 2003; Schmitt et al., 2012). To incorporate all variables in a broader research model, the work–family-enrichment model (Greenhaus and Powell, 2006) could serve as a theoretical framework. In this model, experiences gained through the participation in Domain X enable the individual to have positive experiences in Domain Y. Future research could examine how qualitative and quantitative aspects of participation in one domain relate to life-management strategies in the other domain, and whether there are positive effects.

Second, the generalizability of our results needs to be investigated in future research. The type of sample studied might influence whether SOC in private life mediates or moderates the relationship of working time and relationship outcomes. The positive association between working time and SOC in private life found in our sample most likely does not apply to employees in all fields. It could be that these two variables are unrelated in employees who have fewer self-regulatory resources and are less trained in rational problem solving. For these employees, relationship outcomes might deteriorate when they work long hours and show a low level of SOC in private life at same time. Moreover, time control might also be a highly relevant variable and could establish the relationship between working time and SOC in private life. It might even be that having time control at work enables employees to use SOC strategies at work *and* in private life. Thus, future studies should explore if and to what extent employees with high work time control engage in SOC at work and/or in private life.

Third, when investigating if longer working time is related to poor relationship outcomes, one might want to examine moderator variables other than SOC in private life. For instance, the attachment styles (Hazan and Shaver, 1987) could moderate the association of working time and relationship satisfaction. On the one hand, the association might be negative

## Associations between working time, SOC, and relationship outcomes

for an anxious/ambivalent attached person who feels insecure without the partner. On the other hand, a secure or avoidant attached person might, for different reasons, enjoy the freedom he or she gains when working longer hours which, in turn, increases his or her relationship satisfaction. Also, couples' living arrangements are likely relevant and therefore should be explored. The time one spends at work certainly has a different meaning for those who "live apart together" than for those who cohabit.

Fourth, we did not analyze the crossover of relationship outcomes in depth, and we measured relationship satisfaction and self-disclosure concurrently. Therefore, we caution against a causal interpretation of the positive association between Partner A's and Partner B's relationship satisfaction. On the one hand, 38.37% of variance in relationship satisfaction at Time 2 existed between couples. Thus, to some extent, the positive association between both partners' relationship satisfaction might also simply reflect that because some relationships function better than others do. On the other hand, relationship satisfaction at Time 2 varied 61.63% at the within-couple level. Therefore, we suggest not attributing the whole effect to shared perceptions. Also, common method bias in cross-sectional data (Podsakoff et al., 2003) could account for the failure to establish the expected crossover of relationship satisfaction because we assessed data from both partners. It is highly relevant to investigate the mechanisms (cf. Westman, 2001) underlying the crossover (or lack thereof) of relationship outcomes. The behavioral theory of relationship satisfaction (see above; Kelley et al., 1983) provides a theoretical framework for analyzing these mechanisms. As mentioned above, Kelley et al. proposed that partner's relationship-related evaluations and behaviors elicit each other. Furthermore, personal or situational characteristics such as neuroticism or time spent with the partner might moderate these effects. Thus, with longitudinal designs and moderated-mediation models, future research should investigate the mechanisms and boundary conditions of the crossover of relationship outcomes.



*Practical and theoretical implications*

Our results challenge the common-sense assumption about a negative association between working time and relationship outcomes as well as the conflict perspective on the work–life interface. First, we found a (albeit non-significant) positive direct effect of working time on relationship satisfaction and self-disclosure. Thus, there appears to be no trade-off between time invested in one’s work and relationship outcomes for our sample of dual-career couples. Accordingly, if academics want or need to work longer, they do not have to be afraid of ruining their relationship. Increasing working time might even be beneficial for the relationship when we consider the positive indirect effect of working time on relationship satisfaction and self-disclosure through SOC in private life.

Second, our research broadens the view on role stressors at the work–life interface. The scarcity perspective underlying a time-based work–family conflict (Greenhaus and Beutell, 1985) assumes that the time one physically and psychologically spends on working has detrimental effects for the private domain. In our study, we showed that working time can even have a positive cross-domain effect because it relates to adaptive self-regulatory strategies, such as SOC in private life. Also, other stressors might have positive cross-domain side effects because they evoke self-regulatory behavior in the other domain.

**Conclusion**

Future research should investigate how employees in other lines of work use SOC strategies so that we can better understand how stressors and resources of one domain relate to self-regulatory strategies in the other life domain, and what exactly moderates these associations. In doing so, we can learn more about the various ways employees in various fields manage their life and the threads that keep work and home together.

**Note**

<sup>1</sup> This study was part of a larger research project. The sample of this study overlaps with a sample included in the following publication: Neff, A, Sonnentag, S, Niessen, C, & Unger, D (in press). The crossover of self-esteem: A longitudinal perspective. *European Journal of Work and Organizational Psychology*. DOI: 10.1080/1359432X.2013.856298.

**Funding**

The research was funded by grant of the Excellence Initiative of the German Research Foundation (DFG) to the University of Konstanz.

## References

- Aguinis H and Vandenberg RJ. (2014) An ounce of prevention is worth a pound of cure: Improving research quality before data collection. *Annual Review of Organizational Psychology and Organizational Behavior* 1(1): 569-595.
- Bajor JK and Baltes BB. (2003) The relationship between selection optimization with compensation, conscientiousness, motivation, and performance. *Journal of Vocational Behavior* 63(3): 347-367.
- Bakker AB and Demerouti E. (2009) The crossover of work engagement between working couples: A closer look at the role of empathy. *Journal of Managerial Psychology* 24(3): 220-236.
- Baltes BB and Heydens-Gahir HA. (2003) Reduction of work-family conflict through the use of selection, optimization, and compensation behaviors. *Journal of Applied Psychology* 88(6): 1005-1018.
- Baltes PB. (1997) On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as foundation of developmental theory. *American Psychologist* 52(4): 366-380.
- Baltes PB, Baltes MM, Freund AM and Lang F. (1999) The measurement of selection, optimization, and compensation (SOC) by self report. *Materialien aus der Bildungsforschung*. Berlin, Germany: Max-Planck-Institut für Bildungsforschung.
- Barnett RC and Hyde JS. (2001) Women, men, work, and family. *American Psychologist* 56(10): 781.
- Bradbury TN, Fincham FD and Beach SRH. (2000) Research on the nature and determinants of marital satisfaction: A decade in review. *Journal of Marriage & Family* 62(4): 964-980.
- Bryk AS and Raudenbush SW. (1992) *Hierarchical linear models: Applications and data analysis methods*, Thousand Oaks, CA US: Sage Publications, Inc.

## Associations between working time, SOC, and relationship outcomes

- Chaudoir SR and Fisher JD. (2010) The disclosure processes model: Understanding disclosure decision making and postdisclosure outcomes among people living with a concealable stigmatized identity. *Psychological Bulletin* 136(2): 236-256.
- Cozby PC. (1973) Self-disclosure: A literature review. *Psychological Bulletin* 79(2): 73-91.
- Drigotas SM, Whitney GA and Rusbult CE. (1995) On the peculiarities of loyalty: A diary study of responses to dissatisfaction in everyday life. *Personality and Social Psychology Bulletin* 21(6): 596-609.
- Edwards JR and Rothbard NP. (2000) Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review* 25(1): 178-199.
- Fishbein M and Ajzen I. (1974) Attitudes towards objects as predictors of single and multiple behavioral criteria. *Psychological Review* 81(1): 59-74.
- Forgas JP. (2011) Affective influences on self-disclosure: Mood effects on the intimacy and reciprocity of disclosing personal information. *Journal of Personality and Social Psychology* 100(3): 449-461.
- Freund AM and Baltes PB. (2002) Life-management strategies of selection, optimization and compensation: Measurement by self-report and construct validity. *Journal of Personality and Social Psychology* 82(4): 642-662.
- Funk JL and Rogge RD. (2007) Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology* 21(4): 572-583.
- Goode WJ. (1960) A theory of role strain. *American Sociological Review* 25(1): 483-496.
- Gray J. (2008) *Why Mars and Venus collide?: Improving relationships by understanding how men and women cope differently with stress*, New York: Harper Perennial.
- Greenhaus JH and Allen TD. (2011) Work–family balance: A review and extension of the literature. In: Quick JC and Tetrick LE (eds) *Handbook of occupational health*

- psychology (2nd ed.)*. Washington, DC US: American Psychological Association, 165-183.
- Greenhaus JH and Beutell NJ. (1985) Sources and conflict between work and family roles. *Academy of Management Review* 10(1): 76-88.
- Greenhaus JH and Powell GN. (2006) When work and family are allies: A theory of work-family enrichment. *Academy of Management Review* 31(1): 72-92.
- Haase CM, Heckhausen J and Wrosch C. (2013) Developmental regulation across the life span: Toward a new synthesis. *Developmental Psychology* 49(5): 964-972.
- Hazan C and Shaver P. (1987) Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology* 52(3): 511.
- Heckhausen J, Wrosch C and Schulz R. (2010) A motivational theory of life-span development. *Psychological Review* 117(1): 32-60.
- Hobfoll SE. (2001) The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review* 50(3): 337-370.
- Hobfoll SE and Hobfoll IH. (1994) *Work won't love you back: The dual career couple's survival guide*, New York: W. H. Freeman and Company.
- Houts RM, Robins E and Huston TL. (1996) Compatibility and the development of premarital relationships. *Journal of Marriage and the Family* 58(1): 7-20.
- Jopp D and Smith J. (2006) Resources and life-management strategies as determinants of successful aging: On the protective effect of selection, optimization, and compensation. *Psychology and Aging* 21(2): 253-265.
- Karney BR and Bradbury TN. (1995) The longitudinal course of marital quality and stability: A review of theory, methods, and research. *Psychological Bulletin* 118(1): 3-34.

Associations between working time, SOC, and relationship outcomes

- Kelley HH, Berscheid E, Christensen A, et al. (1983) Analyzing close relationships. In: Kelley HH, Berscheid E, Christensen A, et al. (eds) *Close relationships*. New York: Freeman.
- Kenny DA, Kashy DA and Cook WL. (2006) *Dyadic data analysis*, NY: Guilford Press.
- Kumashiro M, Rusbult CE and Finkel EJ. (2008) Navigating personal and relational concerns: The quest for equilibrium. *Journal of Personality and Social Psychology* 95(1): 94-110.
- McClelland GH and Judd CM. (1993) Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin* 114(2): 376.
- Mischel W. (1996) From good intentions to willpower. In: Gollwitzer PM and Bargh JA (eds) *The psychology of action: Linking cognition and motivation to behavior*. New York: Guilford Press.
- Muraven M and Baumeister RF. (2000) Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin* 126(2): 247-259.
- Neff A, Niessen C, Sonnentag S and Unger D. (2013) Expanding crossover research: The crossover of job-related self-efficacy within couples. *Human Relations* 66(6): 803-827.
- Neff A, Sonnentag S, Niessen C and Unger D. (2012) What's mine is yours: The crossover of day-specific self-esteem. *Journal of Vocational Behavior* 81(3): 385-394.
- Ng TWH, Eby LT, Sorensen KL and Feldman DC. (2005) Predictors of objective and subjective career success: A meta-analysis. *Personnel Psychology* 58(2): 367-408.
- Norton R. (1983) Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage & the Family* 45(1): 141-151.
- Podsakoff PM, MacKenzie SB, Lee J-Y and Podsakoff NP. (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88(5): 879-903.

## Associations between working time, SOC, and relationship outcomes

- Prager KJ and Buhrmester D. (1998) Intimacy and need fulfillment in couple relationships. *Journal of Social and Personal Relationships* 15(4): 435-469.
- Preacher KJ and Hayes AF. (2008) Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods* 40(3): 879-891.
- Satorra A and Bentler P. (1999) A scaled difference Chi-square test statistic for moment structure analysis. *UCLA Statistics series*. Los Angeles, CA: University of California.
- Schmitt A, Zacher H and Frese M. (2012) The buffering effect of selection, optimization, and compensation strategy use on the relationship between problem solving demands and occupational well-being: A daily diary study. *Journal of Occupational Health Psychology* 17(2): 139-149.
- Schoebi D, Karney BR and Bradbury TN. (2012) Stability and change in the first 10 years of marriage: Does commitment confer benefits beyond the effects of satisfaction? *Journal of Personality and Social Psychology* 102(4): 729-742.
- Shockley KM and Allen TD. (2010) Investigating the missing link in flexible work arrangement utilization: An individual difference perspective. *Journal of Vocational Behavior* 76(1): 131-142.
- Song Z, Foo M-D and Uy MA. (2008) Mood spillover and crossover among dual-earner couples: A cell phone event sampling study. *Journal of Applied Psychology* 93(2): 443-452.
- Sullivan O. (1996) Time co-ordination, the domestic division of labour and affective relations: Time use and the enjoyment of activities within couples. *Sociology* 30(1): 79-100.
- Swensen CH. (1972) The behavior of love. In: Otto HA (ed) *Love Today: A New Exploration*. New York: Association Press.

Associations between working time, SOC, and relationship outcomes

- Van Steenbergen EF, Kluwer ES and Karney BR. (2014) Work–family enrichment, work–family conflict, and marital satisfaction: A dyadic analysis. *Journal of Occupational Health Psychology* 19(2): 182–194.
- Vinokur AD and Van Ryn M. (1993) Social support and undermining in close relationships: Their independent effects on the mental health of unemployed persons. *Journal of Personality and Social Psychology* 65(2): 350-359.
- Weber M. (1930) *The Protestant Ethic and the Spirit of Capitalism*, New York: Scribner's.
- Westman M. (2001) Stress and strain crossover. *Human Relations* 54(6): 717-752.
- Westman M, Vinokur A, Hamilton VL and Roziner I. (2004) Crossover of marital dissatisfaction during military downsizing among Russian army officers and their Spouses. *Journal of Applied Psychology* 89(5): 769–779.
- Wiese BS, Freund AM and Baltes PB. (2000) Selection, optimization, and compensation: An action-related approach to work and partnership. *Journal of Vocational Behavior* 57(3): 273-300.
- Zacher H and Frese M. (2011) Maintaining a focus on opportunities at work: The interplay between age, job complexity, and the use of selection, optimization, and compensation strategies. *Journal of Organizational Behavior* 32(2): 291-318.



**Table 1. Means, standard deviations, and correlations among the study variables**

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Working time (T1, A)	8.85	2.21	-															
2 Working time (T1, B)	8.85	2.21	.09	-														
3 SOC in private life (T1, A)	1.66	0.23	.17	.07	-													
4 Relationship satisfaction (T1, A)	4.18	0.63	.14	.15	.24	-												
5 Relationship satisfaction (T2, A)	4.11	0.61	.16	.13	.30	.75	-											
6 Relationship satisfaction (T1, B)	4.18	0.63	.15	.14	.12	.48	.39	-										
7 Relationship satisfaction (T2, B)	4.11	0.61	.13	.16	.13	.39	.38	.75	-									
8 Self-disclosure (T1, A)	4.02	0.60	.13	.18	.32	.65	.58	.28	.24	-								
9 Self-disclosure (T2, A)	3.98	0.61	.12	.12	.31	.58	.66	.29	.28	.72	-							
10 Self-disclosure (T1, B)	4.02	0.60	.18	.13	.13	.28	.24	.65	.58	.24	.21	-						
11 Self-disclosure T2, B)	3.98	0.61	.12	.12	.12	.29	.28	.58	.66	.21	.22	.72	-					
12 Age (A)	38.77	7.22	-.02	-.08	-.06	-.19	-.16	-.17	-.15	-.14	-.10	-.08	-.07	-				
13 Gender (A) <sup>a</sup>	1.50	0.50	.20	-.22	-.04	-.04	-.04	.06	.05	-.16	-.14	.15	.13	.19	-			
14 Relationship length	11.91	7.90	-.08	-.08	-.10	-.18	-.16	-.18	-.16	-.14	-.12	-.14	-.12	.64	-.00	-		
15 Both partners in academia <sup>b</sup>	1.34	0.48	.08	.08	.06	.06	.05	.06	.05	.04	.05	.04	.05	-.15	.00	-.25	-	
16 Number of children	0.76	0.98	-.24	-.24	-.16	-.24	-.24	-.24	-.24	-.19	-.18	-.19	-.18	.34	.00	.43	.12	-

*Note.* Correlations ( $N = 570$  persons) with  $r \geq .09$  are significant at  $p < .05$  and with  $r \geq .11$  are significant at  $p < .01$ . T1 = Time 1; T2 = Time 2; A = Partner A; B = Partner B. <sup>a</sup> 1 = female; 2 = male. <sup>b</sup> 1 = no; 2 = yes.

**Table 2. Multilevel estimates for models predicting selective optimization with compensation (SOC) in private life (Time 1, Partner A)**

Variable	Model 1			Model 2		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	1.67	0.04	40.90 ***	1.70	0.04	41.28 ***
Relationship length	-0.00	0.00	-0.81	-0.00	0.00	-0.90
Both partners in academia <sup>a</sup>	0.01	0.02	0.70	0.01	0.02	0.49
Number of children at home	-0.03	0.01	-2.98 **	-0.02	0.01	-2.17 *
Age (A)	0.00	0.00	0.60	0.00	0.00	0.55
Gender (A) <sup>b</sup>	-0.02	0.02	-1.01	-0.03	0.02	-1.73
Working time (Time 1, B)	0.00	0.00	0.48	0.00	0.00	0.23
Working time (Time 1, A)				0.02	0.00	3.55 **
- 2 × log		-99.73			-112.21	
Δ - 2 × log ( <i>df</i> )		17.19 (6)			12.48 (1)	
Level 1 variance ( <i>SE</i> )		0.04 (0.00)			0.05 (0.00)	
Level 2 variance ( <i>SE</i> )		0.00 (0.00)			0.00 (0.00)	
Within-unit variance explained		2.98%			5.07%	
Between-unit variance explained		3.05%			5.14%	

*Note.* Model 1 was compared with a null model, with the intercept as the only predictor,  $\gamma = 1.66$ ;  $SE = 0.01$ ;  $t = 176.38$ ,  $-2 \times \log = -82.54$ . Level 1 intercept variance = 0.05;  $SE = 0.00$ ; Level 2 intercept variance = 0.00;  $SE = 0.00$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . A = Partner A; B = Partner B. <sup>a</sup> 1 = no; 2 = yes. <sup>b</sup> 1 = female; 2 = male.

**Table 3. Multilevel estimates for models predicting relationship outcomes (Time 2, Partner A)**

Variable	Relationship satisfaction (Time 2, Partner A)									Self-disclosure (Time 2, Partner A)								
	Model 1			Model 2			Model 3			Model 1			Model 2			Model 3		
	Esti- mate	SE	<i>t</i>	Esti- mate	SE	<i>t</i>	Esti- mate	SE	<i>t</i>	Esti- mate	SE	<i>t</i>	Esti- mate	SE	<i>t</i>	Esti- mate	SE	<i>t</i>
Intercept	4.17	0.08	55.51***	4.15	0.07	56.23***	4.16	0.07	56.34***	4.03	0.08	50.89***	4.03	0.08	51.23***	4.03	0.08	51.21***
Relationship length	-0.00	0.00	-0.32	-0.00	0.00	-0.19	-0.00	0.00	-0.10	-0.00	0.00	-0.41	-0.00	0.00	-0.35	-0.00	0.00	-0.32
Both partners in academia <sup>a</sup>	-0.02	0.04	-0.44	-0.02	0.04	-0.52	-0.02	0.04	-0.49	0.01	0.04	0.27	0.01	0.04	0.21	0.01	0.04	0.22
Number of children at home	-0.04	0.02	-1.68	-0.03	0.02	-1.45	-0.03	0.02	-1.53	-0.03	0.02	-1.28	-0.02	0.02	-1.11	-0.02	0.02	-1.13
Age (A)	0.00	0.00	0.28	0.00	0.00	0.12	0.00	0.00	0.10	0.00	0.00	0.73	0.00	0.00	0.66	0.00	0.00	0.66
Gender (A) <sup>b</sup>	-0.02	0.03	-0.56	-0.01	0.03	-0.26	-0.01	0.03	-0.31	-0.04	0.04	-1.19	-0.04	0.04	-1.12	-0.04	0.04	-1.13
Working time (Time 1, A)	0.01	0.00	1.42	0.01	0.01	0.88	0.01	0.01	0.82	0.01	0.01	0.88	0.00	0.01	0.56	0.00	0.01	0.55
Relationship satisfaction (Time 1, A)	0.70	0.03	24.96***	0.68	0.03	24.13***	0.68	0.03	24.16***									
Self-disclosure (Time 1, A)										0.72	0.03	23.33***	0.70	0.03	21.82***	0.70	0.03	21.81***
SOC in private life (Time 1, A)				0.32	0.08	4.22***	0.31	0.08	4.00***				0.22	0.08	2.72**	0.22	0.08	2.64**
Working time × SOC in private life							-0.05	0.03	-1.43							-0.01	0.03	-0.36
- 2 × log	569.08			551.60			549.55			624.82			617.46			617.34		
Δ - 2 × log ( <i>df</i> )	442.99 (7)			17.48 (1)			2.03 (1)			415.86 (7)			7.36 (1)			0.13 (1)		
Level 1 variance (SE)	0.14 (0.01)			0.14 (0.01)			0.14 (0.01)			0.16 (0.01)			0.16 (0.01)			0.16 (0.01)		
Level 2 variance (SE)	0.02 (0.01)			0.02 (0.01)			0.02 (0.01)			0.02 (0.01)			0.02 (0.01)			0.02 (0.01)		
Within-unit variance explained	57.15%			58.51%			58.66%			52.79%			53.42%			53.42%		
Between-unit variance explained	64.81%			66.28%			66.41%			57.72%			58.45%			58.44%		

SE = standard error; SOC = selective optimization with compensation.

*Note.* In both analyses, Model 1 was compared with a null model, with the intercept as the only predictor. Results of the null model predicting relationship satisfaction:  $\gamma = 4.11$ ;  $SE = 0.03$ ;  $t = 136.52$ ,  $- 2 \times \log = 1012.07$ . Level 1 intercept variance = 0.23;  $SE = 0.02$ ; Level 2 intercept variance = 0.14;  $SE = 0.02$ . Results of the null model predicting self-disclosure:  $\gamma = 3.98$ ;  $SE = 0.03$ ;  $t = 141.70$ ,  $- 2 \times \log = 1040.69$ . Level 1 intercept variance = 0.29;  $SE = 0.02$ ; Level 2 intercept variance = 0.08;  $SE = 0.02$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . A = Partner A; B = Partner B. <sup>a</sup> 1 = no; 2 = yes. <sup>b</sup> 1 = female; 2 = male.

**Table 4. Multilevel estimates for models predicting relationship outcomes (Time 2, Partner B)**

Variable	Relationship satisfaction (Time 2, Partner B)						Self-disclosure (Time 2, Partner B)					
	Model 1			Model 2			Model 1			Model 2		
	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>	Estimate	SE	<i>t</i>
Intercept	4.14	0.07	56.14 ***	4.16	0.07	56.93 ***	4.01	0.08	51.69 ***	4.04	0.08	52.00 ***
Relationship length	-0.00	0.00	-0.27	-0.00	0.00	-0.22	-0.00	0.00	-0.37	-0.00	0.00	-0.31
Both partners in academia <sup>a</sup>	-0.01	0.04	-0.37	-0.01	0.04	-0.38	0.01	0.04	0.31	0.01	0.04	0.31
Number of children at home	-0.04	0.02	-1.95 *	-0.03	0.02	-1.66	-0.03	0.02	-1.45	-0.03	0.02	-1.26
Age (B)	0.00	0.00	0.29	0.00	0.00	0.37	0.00	0.00	0.73	0.00	0.00	0.74
Gender (B) <sup>b</sup>	-0.01	0.03	-0.27	-0.02	0.03	-0.47	-0.04	0.04	-1.02	-0.05	0.04	-1.33
SOC in private life (Time 1, A)	0.04	0.07	0.57	0.02	0.08	0.29	0.03	0.08	0.40	-0.00	0.08	-0.05
Relationship satisfaction (Time 1, B)	0.71	0.03	25.12 ***	0.68	0.03	23.29 ***						
Self-disclosure (Time 1, B)							0.72	0.03	23.52 ***	0.71	0.03	22.97 ***
Relationship satisfaction (Time 2, A)				0.09	0.03	2.99 **						
Self-disclosure (Time 2, A)										0.07	0.03	2.35 *
$-2 \times \log$		570.79			566.19			625.44			622.03	
$\Delta - 2 \times \log (df)$		441.28 (7)			4.60 (1)			415.25 (7)			3.41 (1)	
Level 1 variance (SE)		0.14 (0.01)			0.16 (0.01)			0.16 (0.01)			0.17 (0.01)	
Level 2 variance (SE)		0.02 (0.01)			0.00 (0.00)			0.02 (0.01)			0.00 (0.01)	
Within-unit variance explained		57.07%			57.76%			52.77%			53.23%	
Between-unit variance explained		65.04%			69.43%			57.99%			61.72%	

*Note.* In both analyses, Model 1 was compared with a null model, with the intercept as the only predictor. Results of the null model predicting relationship satisfaction:  $\gamma = 4.11$ ;  $SE = 0.03$ ;  $t = 136.52$ ,  $-2 \times \log = 1012.07$ . Level 1 intercept variance = 0.23;  $SE = 0.02$ ; Level 2 intercept variance = 0.14;  $SE = 0.02$ . Results of the null model predicting self-disclosure:  $\gamma = 3.98$ ;  $SE = 0.03$ ;  $t = 141.70$ ,  $-2 \times \log = 1040.69$ . Level 1 intercept variance = 0.29;  $SE = 0.02$ ; Level 2 intercept variance = 0.08;  $SE = 0.02$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . A = Partner A; B = Partner B. <sup>a</sup> 1 = no; 2 = yes. <sup>b</sup> 1 = female; 2 = male.

## Associations between working time, SOC, and relationship outcomes

**Dana Unger** is a postdoctoral researcher at the ETH Zurich, Switzerland in the Department of Management, Technology, and Economics. She obtained her PhD from the University of Konstanz, Germany in 2013 where she also studied psychology. She worked as a research assistant at the University of Konstanz and at the University of Mannheim, Germany. In her research, Dr Unger focuses on the work-life interface and on career issues in individuals and romantic couples. She has published in journals such as *Journal of Occupational and Organizational Psychology* and *Journal of Vocational Behavior*. [Email: [dunger@ethz.ch](mailto:dunger@ethz.ch)]

**Sabine Sonnentag** is a full professor of Work and Organizational Psychology at the University of Mannheim, Germany. She studied psychology at the Free University Berlin and received her PhD from the Technical University Braunschweig. Before she moved to Mannheim she held professorships in Germany and the Netherlands. Dr Sonnentag's research addresses the question how individuals can achieve sustainable high performance at work and remain healthy at the same time. She studies recovery from job stress, proactive work behavior, learning as well as health behavior and self-regulation in the job context. In her research she uses a multi-method approach with a strong emphasis on quantitative diary data and within-person analysis. Dr Sonnentag is a Fellow of the *Society for Industrial and Organizational Psychology* and a member of the *Society of Organizational Behavior*. She published in *Journal of Applied Psychology*, *Personnel Psychology*, and *Journal of Organizational Behavior*, among others. [Email: [sonnentag@uni-mannheim.de](mailto:sonnentag@uni-mannheim.de)]

**Cornelia Niessen** is full professor in Work and Organizational Psychology at the Friedrich-Alexander University of Erlangen-Nürnberg, Germany. Dr Niessen's research interests are in the areas of adaptive performance, vitality, proactive behaviour, and aging at work. She has published in journals such as *Journal of Organizational Behavior*, *Journal of Occupational*

*Health Psychology, Journal of Vocational Behavior, Journal of Occupational and Organizational Psychology, and Leadership Quarterly.* [Email: [cornelia.niessen@fau.de](mailto:cornelia.niessen@fau.de)]

**Angela Kuonath** (née Neff) is a postdoctoral researcher at the LMU Center for Leadership and People Management at LMU Munich, Germany. After studying psychology at the Julius-Maximilians-University of Würzburg she was a research assistant at the work and organizational psychology unit at the University of Konstanz where she finished her doctoral dissertation in 2012. Her research interests address the interplay between employees' work and private lives, job-related self-evaluations, and leadership in the context of occupational health psychology. She published in *Human Relations, the Journal of Vocational Behavior, and the European Journal of Work and Organizational Psychology*. [Email: [angela.neff@psy.lmu.de](mailto:angela.neff@psy.lmu.de)]

**Corresponding author:**

Dana Unger

Department of Management, Technology, and Economics

ETH Zurich

Zurich 8092

Switzerland

[dunger@ethz.ch](mailto:dunger@ethz.ch)

**Other authors:**

Sabine Sonnentag

Department of Psychology

University of Mannheim

Mannheim 68131

Associations between working time, SOC, and relationship outcomes

Germany

[sonnentag@uni-mannheim.de](mailto:sonnentag@uni-mannheim.de)

Cornelia Niessen

Institute of Psychology

Friedrich-Alexander-University of Erlangen-Nürnberg

Germany

[cornelia.niessen@fau.de](mailto:cornelia.niessen@fau.de)

Angela Kuonath

LMU Center for Leadership and People Management

Ludwig Maximilian University of Munich

Germany

[angela.neff@psy.lmu.de](mailto:angela.neff@psy.lmu.de)