

Who suffers from stress? Action-state orientation moderates the effect of external stress on relationship satisfaction

Journal of Social and
Personal Relationships
2017, Vol. 34(6) 894–914
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sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0265407516661045
journals.sagepub.com/home/spr



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Abstract

Growing evidence implicates stress as a reliable correlate of relationship satisfaction; yet, existing models fail to address why some relationships are more vulnerable than others to this effect. We draw from the literature on individual differences in self-regulation to predict that individuals who are more *action oriented* when confronted with aversive demands will buffer themselves and their partners against the detrimental effect of external stress. Using actor–partner interdependence modeling on self-report data from 368 couples, we show that the relationship satisfaction of highly stressed but action-oriented individuals and their partners is compromised less by external stress than that of state-oriented individuals and their partners. These results held after controlling for symptoms of depression and were not moderated by gender or by age, despite sampling couples varying widely in relationship duration. Results support the view that individual differences in self-regulation, and action orientation in particular, might benefit relationships confronted by stress, thus clarifying how dyads might be affected by demands outside their relationship.

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Keywords

Action orientation, external stress, psychology, relationship satisfaction, self-regulation, state orientation

People in intimate relationships, particularly fulfilling and enduring relationships, experience better health and greater well-being compared to people without such bonds (Holt-Lunstad & Smith, 2012; Kamp Dush & Amato, 2005). However, high levels of distress and dissolution indicate that many couples do not achieve these benefits, raising important questions about why some relationships thrive while others falter. Theoretical accounts of relationship development view stress as one likely cause of relationship difficulties (e.g., Bodenmann et al., 2010; Bodenmann, Ledermann, & Bradbury, 2007; Karney & Bradbury, 1995), and, in developing these models, different *types* of stress (e.g., major stressful life events and minor stressors) and different *sources* of stress have been identified (e.g., Jackson et al., 2016; Randall & Bodenmann, 2009). There is growing appreciation for the idea that couples must contend not only with *internal stress* (i.e., issues arising within the relationship itself like communication problems, divergent goals, or unrealistic expectations) but also with *external stressors* arising from outside the couple (e.g., employment insecurity, daily work stress, or financial problems; see Karney, Story, & Bradbury, 2005). Even though these latter challenges are not inherently relationship factors, they shape the contexts in which relationships take place and likely make them easier or harder to maintain high levels of relationship functioning.

Stress spillover, or the idea that external stressors decrease well-being and relationship satisfaction (Bolger, DeLongis, Kessler, & Wethington, 1989), appears to be a robust phenomenon (e.g., Neff & Karney, 2004, 2009; Story & Bradbury, 2004). Outside demands are thought to intrude into the relationship itself, increasing internal stress and eventually taking a toll on relationship satisfaction (e.g., Bodenmann et al., 2007). In turn, partners come to perceive each other more negatively and are not able to give their mate “the benefit of the doubt” when he or she acts in critical or avoidant ways (Neff & Karney, 2004). Stressed partners react more negatively toward each other (Karney et al., 2005) and communicate less effectively (Bodenmann, Meuwly, Bradbury, Gmelch, & Ledermann, 2010; Ledermann, Bodenmann, Rudaz, & Bradbury, 2010; Williamson, Karney, & Bradbury, 2013), particularly as support providers grow more stressed and support recipients express their stress through negative communication (Bodenmann et al., 2015). Thus, even though social support is one of the most important means by which partners co-regulate stress, a stressed partner might wait in vain for support from the mate because their own behavior does not invite compassion but prompts arguments instead. In turn, relationship satisfaction decreases for both partners (*stress crossover*; Neff & Karney, 2007), increasing the risk for relationship breakup.

However, stress does not necessarily pose a threat for relationship functioning. For example, if partners possess specific skills to deal with stress, like dyadic coping (Bodenmann, 2005), relationship satisfaction is less affected (Falconier, Nussbeck, & Bodenmann, 2013). While many studies on stress in the context of intimate relationships focus on dyadic coping, research on individual skills related to coping with stress, such

as self-regulatory competencies, remains sparse (cf. Wilson, Charker, Lizzio, Halford, & Kimlin, 2005), even though such skills clearly influence how individuals deal with stress as studies on the individual level have shown (Baumann, Kaschel, & Kuhl, 2005; Beckmann, 1990; Kuhl, 1994b). Such self-regulatory competencies are associated with *action-state orientation*. Action-state orientation has long been known to influence how individuals are able to maintain functional behavior under stress (Beckmann, 1990; Kuhl, 1994b); yet, to date, this concept has not been used to explain why some couples might be more vulnerable than others to the effects of stress. Thus, it seems worthwhile to take a closer look at the interplay between stress, individual levels of action versus state orientation, and relationship outcomes.

Action-state orientation

Action orientation versus state orientation (Ao/So) was conceptualized to explain why some people managed to display functional behavior under stressful conditions that render others inactive, depressed, and ruminating (Kuhl, 1981). Over the years, abundant research on action-state orientation pinpointed that the construct can be conceived of as a trait-like capacity to regulate positive and negative affect, which is one of the core issues in coping with different types of stress (for an overview, see Jostmann & Koole, 2010).

Although the literature on stress in romantic relationships traditionally differentiates between stress from inside or outside the relationship (Randall & Bodenmann, 2009), the action-state orientation literature differentiates between two affective qualities of stress: demands and threats. Situations that are perceived as challenging dampen positive affect and call for problem-solving or planning (e.g., a challenging professional task) and are thus experienced as demands, while situations that are associated with negative affect and involve violated expectancies, loss, or failure (e.g., being socially excluded at one's workplace) are thought to lead to the experience of threat. Kuhl (1994c) thus distinguishes between two dimensions of action-state orientation, one involving the experience of stressors as *demands* (AoD/SoD) and the other involving the experience of stressors as *failure* or *threat to the self* (AoF/SoF; Diefendorff, Hall, Lord, & Streat, 2000; Koole & Fockenberg, 2011; Kuhl, 1994a).

With regard to demands, state-oriented individuals falter at problem-solving and planning and tend to procrastinate, while action-oriented individuals self-regulate well in any demanding situation. With regard to failure/threat, state-oriented individuals suffer from loss and failure and keep on ruminating, while action-oriented individuals manage to achieve what needs to be done without dwelling on past mistakes (Kuhl, 1994c).

Koole, Jostmann, and Baumann (2012) argue that AoD/SoD can explain inconsistent results in studies on self-regulation. While demanding conditions impair self-regulation in some studies (e.g., regulatory depletion; Muraven & Baumeister, 2000), in other studies demanding conditions lead to heightened self-regulation (e.g., effort mobilization; Gendolla & Richter, 2010). Taking action-state orientation into account helps to explain these inconsistencies: Impaired self-regulation in the face of demands might result from SoD, while increased self-regulation might result from AoD. Koole et al. (2012) do not conceive of action-state orientation as a difference in self-regulatory

competence that shows in any situation, arguing instead that action-state orientation proves influential only in situations that are perceived as demanding or threatening.

Action-state orientation differs from several other individual difference variables in important, albeit sometimes small ways. With regard to the aforementioned interaction with specific situational cues, action-state orientation differs from general self-control where no such interaction with specific situational cues is assumed (Tangney, Baumeister, & Boone, 2004). Another aspect in which it differs from other individual difference variables, for example, the Big Five, is its development. It is assumed that action-state orientation develops because of learning experiences that individuals undergo when confronted with demanding or threatening circumstances (Kuhl, 1994c). There is no supposition of action-state orientation as a temperamental factor that is present from birth on. Also, while action-state orientation shows considerable stability over time when measured, it is conceived as changeable by interventions and can also be triggered situationally (Kuhl, 1994c). In addition, the two forms of action-state orientation differ more specifically from other related constructs. In contrast to impulsivity, AoD is no general action readiness but can be conceived as a person's capacity to enact difficult intentions, that is, the capacity to initiate action when goal-directed behavior becomes difficult (Koole, Jostmann, & Baumann, 2012). AoF/SoF differs from neuroticism, another interindividual difference construct related to negative affect, insofar as the former does not capture how easily negative affect is triggered. In contrast, AoF/SoF is about how easily negative affect can be downregulated. Thus, AoF/SoF determines how long people remain in affectively aversive or dysfunctional states (Baumann & Kuhl, 2002).

In addition, action-oriented individuals not only maintain functional self-regulation even under highly demanding, stressful circumstances but actually excel in self-regulation the moment demands increase, suggesting a rather effortless coping with stress and demands. Hence, it has been theorized that action-state orientation might also play an important role in relationships, especially in times of stress (Koole, Kuhl, Jostmann, & Finkenauer, 2006). Action orientation should help partners cope with stress, perhaps minimizing the well-documented negative consequences stress has on relationships. Because external stress is generally conceptualized in the form of demanding, stressful circumstances from outside the relationship (Randall & Bodenmann, 2009) and the wording in questionnaires usually asks about demanding situations when stress is assessed, AoD is the dimension of action-state orientation that is most likely to interact with stress from outside the relationship and affect relationship variables. Thus, we assume that *external stress* as conceived in the relationship literature and *demanding circumstances* as conceived of in the action-state orientation literature have a substantial conceptual overlap. AoD is therefore the primary focus in our study, and all references to action or state orientation from this point forward refer to this form of action-state orientation.

Action-state orientation and external stress in relationships

Under the premise that action-oriented partners, compared to state-oriented partners, exhibit more functional self-regulation when confronted with demanding circumstances

or external stress, we expect that the former will be happier in their romantic relationship. Presumably, their self-regulatory competencies enable them to maintain a high level of partnership functioning even in stressful times because they adhere more strongly to positive cognitions and behaviors and self-regulate best under demanding circumstances. Thus, coping with stress in a positive manner prevents the individual from getting into a vicious circle of still more negative emotions, cognitions, and behaviors and accordingly leaves more resources for the enactment of relationship maintenance behaviors. Consequently, the spillover from external stress to the dyad should be reduced. Because action-oriented versus state-oriented partners regulate their stress more easily, they presumably can invest more time and energy in their relationship, have better relationships, and are more satisfied with them. In the same vein, if one partner is able to invest more time and energy in relationship maintenance behaviors, the other partner should be happier in that relationship. We therefore expect a buffering effect of action orientation to occur only under conditions of high external demands.

Age as a moderator

Freund, Nikitin, and Ritter (2009) reason that while behavior in younger adulthood is more externally controlled by social norms and expectation, in older adulthood, self-regulation takes over most of the control over behavior because (e.g., due to retirement) markedly fewer binding expectations or norms exist for older adulthood. Thus, goal striving is less guided by external control but requires self-regulation. Interestingly, Hennecke and Freund (2016) find that action orientation is positively correlated with age. They reason that due to lifelong experience with pursuing difficult goals, action orientation becomes more pronounced because experience teaches persons not to ruminate and dwell on problems that need to be solved but to initiate action even if doing so seems difficult. In other words, instead of crying over spilled milk, older adults tend to get a cloth to clean it up. This could also be conceived of as a heightened self-regulatory competence, acquired by repeated experiences with difficult and demanding circumstances. In the same line, Gröpel, Kuhl, and Kazén (2004) argue that action orientation should increase with age due to an accumulation of experience in regulation. In a large internet-based study, they found that age indeed predicted action orientation positively. Even though Hennecke and Freund (2016) report that action-oriented participants reported more cognitive and affective indicators of competent self-regulation, they do not report any moderating effects of age. If older adults are indeed more action oriented, it would be functional to rely more strongly on this increased self-regulatory competence. In addition, if older adults are more action oriented, and rely more strongly on this self-regulatory competence than younger adults, the respective effect of action orientation on behavior should be stronger. With regard to our study, we expect that (1) old adults have higher levels of action orientation than young or middle-aged adults, replicating findings by Gröpel et al. (2004) and Hennecke and Freund (2016). Following the reasoning of Freund et al. (2009) that self-regulation is especially important for the enactment of difficult intentions in old age, but less important in other life stages, we expect that (2) action orientation plays a more important role for coping with stress for old adults than for young or middle-aged adults. This should be discernible in stronger

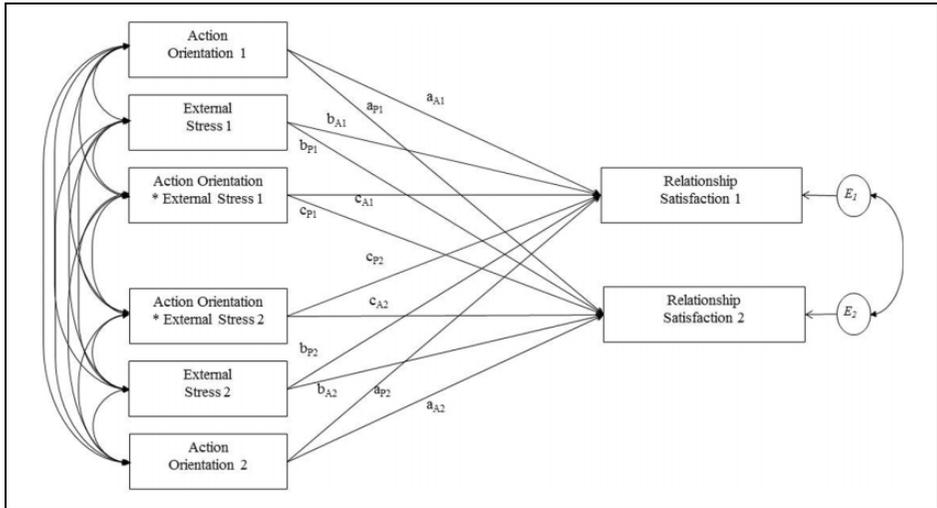


Figure 1. The actor-partner moderation model (Ledermann & Bodenmann, 2006) for regressing relationship satisfaction on external stress and action-state orientation.

relations between the interaction of action orientation and stress and relationship satisfaction, reflecting a tendency of older adults to rely more strongly on action orientation when dealing with demands than the other age-groups.

In addition, we hypothesize that action-state orientation moderates the relationship between external stress and relationship satisfaction. This effect should be particularly pronounced in older couples. We expect that higher stress levels only lead to a decrease in own and partners' relationship satisfaction to the extent that the person experiencing the stress is state oriented. Action-oriented individuals' own relationship satisfaction as well as their partner's relationship satisfaction should be less influenced by stress than state-oriented individuals' own and partners' relationship satisfaction.

This moderation will be tested with a dyadic data set in the framework of the actor-partner interdependence model (APIM; Kenny, Kashy, & Cook, 2006) and its extension, the actor-partner moderation model (APIMoM; Ledermann & Bodenmann, 2006; see Figure 1). Because the literature does not report any gender differences, no hypothesis for gender differences can be derived. We thus expect the associations to be the same for men and women.

Method

Participants and procedure

A total of 368 Swiss heterosexual couples from three different age-groups were recruited for this study. Age-Group 1 ranged from 20 to 35 years ($n = 122$ couples), Age-Group 2 ranged from 40 to 55 years ($n = 125$), and Age-Group 3 ranged from 65 to 80 years ($n = 121$; see Tables 1 to 3). One of the two partners had to be within the age range, while

Table 1. Correlations, means, standard deviations, and internal consistencies of study variables in Age-Group 1.

		1	2	3	4	M	SD	α
		w						
w	1 Relationship satisfaction	—				4.36	0.48	.807
	2 Action orientation	.27**	—			7.03	3.04	.760
	3 External stress	-.35**	-.25**	—		1.70	0.47	
	4 Depressivity (GHQ)	-.35**	-.28**	.37**	—	1.97	0.46	.852
		m						
m	1 Relationship satisfaction	—				4.32	0.48	.815
	2 Action orientation	.11	—			6.23	3.14	.781
	3 External stress	-.16	-.23*	—		1.60	0.37	
	4 Depressivity (GHQ)	-.16	-.28**	.38*	—	1.83	0.38	.814
		m						
w	1 Relationship satisfaction	.61**	.08	-.19*	-.14			
	2 Action orientation	.15	-.08	.01	.05			
	3 Acute external stress	-.21*	-.03	.39**	.10			
	5 Depressivity (GHQ)	-.16	.04	.19*	.03			

Note. Correlations of variables for women can be found in the upper part of the table, correlations for men in the middle, correlations across gender in the lower part. w = women; m = men.
 * $p < .05$; ** $p < .01$.

Table 2. Correlations, means, standard deviations, and internal consistencies of study variables in Age-Group 2.

		1	2	3	4	M	SD	α
		w						
w	1 Relationship satisfaction	—				4.32	0.48	.826
	2 Action orientation	-.00	—			7.25	2.73	.694
	3 External stress	-.23*	-.142	—		1.71	0.50	
	4 Depressivity (GHQ)	-.23*	-.25**	.46**	—	1.89	0.47	.889
		m						
m	1 Relationship satisfaction	—				4.35	0.46	.836
	2 Action orientation	.32**	—			6.99	2.93	.749
	3 External stress	-.38**	-.34**	—		1.65	0.45	
	4 Depressivity (GHQ)	-.37**	-.34**	.48**	—	1.84	0.47	.905
		m						
w	1 Relationship satisfaction	.56**	.15	-.16	-.27**			
	2 Action orientation	.01	.03	-.08	-.27**			
	3 External stress	-.29**	-.06	.19*	.17			
	4 Depressivity (GHQ)	-.25**	-.12	.17	.40**			

Note. Correlations of variables for women can be found in the upper part of the table, correlations for men in the middle, correlations across gender in the lower part. w = women; m = men.
 * $p < .05$; ** $p < .01$.

Procedures were evaluated and approved by the local ethical committee of the University of Zurich.

Measures

Action-state orientation was assessed with the Action Control Scale (Kuhl, 1994a; see Diefendorff et al., 2000, for psychometric information on the English version). For the demand-related scale, participants responded to 12 items such as “When I have to take care of something important but also unpleasant: (a) I do it and get it over with (action oriented), or (b) It can take a while before I can bring myself to do it.” (state oriented). Scores for all 12 questions are summed up, so that this scale can range from 0 to 12 (see Tables 1 to 3 for descriptive statistics). Higher scores reflect a stronger disposition toward action orientation, while lower scores represent state orientation.

Stress was assessed with the multidimensional stress questionnaire for couples (MDS-P; Bodenmann, Schär, & Gmelch, 2008). The MDS-P assesses self-perceived demands and stress in different couple-related domains (internal stress like different values and attitudes, troublesome habits, etc.) and external domains (external stress like job, children, finances, daily hassles, etc.). Participants answered the question “How stressful/demanding was the following situation [within/outside] your romantic relationship?” on a 4-point scale (from 1 = *not at all* to 4 = *very much*) for the last 7 days. The mean value of the MDS-P-scale represents a proxy for the existing stress an individual encounters; yet, the MDS-P is not a psychometric scale in the sense that it measures a unidimensional construct, hence internal consistency is not a meaningful measure for this scale.

Relationship satisfaction was assessed with the German version of the Relationship Assessment Scale (RAS; Hendrick, 1988; Sander & Böcker, 1993). The RAS assesses relationship satisfaction with 7 items, such as “In general, how satisfied are you with your relationship?” or “How often do you wish you had not gotten into this relationship?” (reverse coded) on a 5-point scale with various verbal anchors according to how the items are phrased (see Tables 1 to 3 for descriptive statistics). Higher scores reflect higher relationship satisfaction.

Data analysis plan

In the current study, we assessed both members of romantic couples to examine the effects of action-state orientation and external stress on relationship satisfaction. The actor-partner interdependence model, APIM (Kenny et al., 2006) was used. The basic APIM allows for the estimation of the effect that a person’s predictor variable has on his/her own criterion variable (actor effect) and the effect that a person’s predictor variable has on his/her partner’s criterion variable (partner effect). The APIM treats the dyad rather than the individual as the unit of analysis and controls for the fact that data from the two members of a couple are interdependent, for example, the relationship quality of one partner is not independent of the other partner’s (Kenny et al., 2006). Thus, actor and partner effects as well as the correlations between variables that are dependent on each other are estimated simultaneously in one model, controlling for each other and the

dependency in the data. Actor and partner effects may be moderated resulting in the APIMoM (see Figure 1; Ledermann & Bodenmann, 2006).

According to our hypotheses, we will test the APIMoM (Ledermann & Bodenmann, 2006) for action-state orientation and external stress predicting relationship satisfaction. As shown in Figure 1, external stress is the predictor variable, action-state orientation is the moderator variable, and the interaction term represents the moderating effect. Action-state orientation and external stress scores were *z*-transformed before the interaction term was computed in order to avoid multicollinearity (Aiken & West, 1991). Because we presume no gender differences, actor and partner effects are set equal across gender (e.g., a_{A1} and a_{A2}); additionally, we restrict all model parameters to be equal across age-groups and investigate in a multigroup APIMoM if they differ across age-groups.

The order of analyses will be as follows: We hypothesized that the moderation effect is stronger for older adults because they rely more strongly on action orientation when dealing with demands than the other age-groups. Thus, we will first test a multigroup APIMoM that assumes all relations to be equal in all age-groups and for men and women. If the multigroup model shows a poor model fit, the data indicate important differences between the age-groups and/or gender. Driven by the assumption of no gender differences, further inspection of separate models for the age-groups will be necessary to determine which age-groups differ from each other and in what way. If there are no age differences, the data can be collapsed across age-groups to test the remaining hypothesized relations.

Depending on the fit of the multigroup APIMoM, we will either continue with separate models for the age-groups or with one model for all age-groups. In both cases, the respective path coefficients for men and women will still be set equal. If the model fit is acceptable, the path coefficients (actor and partner effects) are indeed equal for men and women and may be inspected in more detail. Concerning the path coefficients, we expect negative actor and partner effects of external stress, replicating research on stress spillover and crossover, and a buffering moderation effect, that is, positive regression weights associated with the interaction term implying that the same amount of stress has a less detrimental effect on relationship satisfaction for higher scores on action orientation. We have no hypotheses concerning the direct relation between action orientation and relationship satisfaction. Action orientation should come into play especially when demands or stress is high. We will explore whether it relates to relationship satisfaction or whether it does not. If these hypotheses are supported, we will try to show in additional analyses that specifically action-state orientation is responsible for the buffering effect by controlling for a conceptually similar variable, that is, depressive symptomatology.

Results

Descriptive statistics

Tables 1 to 3 provide an overview of correlations, mean values, standard deviations and internal consistencies of all study variables. Overall, the samples in the three age-groups

represent rather satisfied and slightly stressed couples with moderate levels of action orientation.

We found significant correlations for action orientation and relationship satisfaction of female partners of the first and for male partners of the second and third age-group. One's partner's action orientation and one's own relationship satisfaction do not correlate. External stress and relationship satisfaction correlate negatively within partners except for external stress and male partners' relationship satisfaction in the first age-group. Crossover, or correlations between one partner's stress and the other partner's relationship satisfaction, can be found for female and male partners' stress in the first age-group as well as for female partners' external stress in the second age-group. Action orientation and stress correlate negatively within a partner for women and men of the first age-group, for men of the second age-group, and for women of the third age-group.

Testing for moderation: Age and action-state orientation as moderators of external stress

Data were analyzed using Mplus 7 (Muthén & Muthén, 1998–2012) using the bootstrap option with 2000 bootstrap samples. Following Gröpel et al. (2004) and Hennecke and Freund (2016), we hypothesized a positive correlation between action orientation and age. This assumption is only partly supported by our data because the correlation between age and action orientation is of medium size and significant for men ($r = .26; p < .001$) but small and only marginally significant for women ($r = .10; p = .06$). Next, we expected the moderation effect to be stronger for older adults because they rely more strongly on action orientation when dealing with demands than the other age-groups. Consequently, we first tested the multigroup APIMoM. Contrary to our hypothesis, this resulted in a model with excellent fit, $\chi^2(48) = 52.94, p = .28$, confirmatory fit index (CFI) = .98, and root mean square error of approximation (RMSEA) = .03; $p(\text{RMSEA} < .05) = .78$. The good model fit indicates that there are no differences between the models for different age-groups; hence, a model for the whole sample without differentiating between age-groups may be estimated and interpreted (see above). This resulted again in an excellent model fit, $\chi^2(6) = 7.93, p = .24$, CFI = .99, and RMSEA = .03; $p(\text{RMSEA} < .05) = .69$. The model explained 11.5% of variance in men's relationship satisfaction and 12.1% of variance in women's relationship satisfaction.

To test our hypotheses concerning the negative relations between stress and relationship satisfaction as well as the buffering effect of action orientation, we inspected the respective path coefficients in more detail. As expected, there was a significant negative actor effect for external stress on relationship satisfaction, replicating previous findings on stress spillover (Bodenmann et al., 2007; Neff & Karney, 2004). There also was the expected negative partner effect, replicating findings on stress crossover (e.g., Bodenmann et al., 2007; Neff & Karney, 2007). In addition, there was a significant positive actor effect for action orientation. Most importantly, the interaction term predicted one's own and the partner's relationship satisfaction significantly in line with our hypotheses: The actor and the partner effect for the interaction term were positive, indicating that highly stressed but action-oriented individuals and their partners do not suffer from external stress to the same extent as state-oriented individuals and their

Table 4. Standardized regression coefficients for external stress and action-state orientation on relationship satisfaction, collapsed across all age-groups.

	<i>b</i> (stand.)	Lower bound of the CI	Upper bound of the CI
Actor effects			
Action orientation	0.13	0.07	inf
External stress	-0.19	-inf	-0.14
Stress × Action Orientation	0.08	0.01	inf
Partner effects			
Action orientation	0.07	-0.01	0.14
External stress	-0.11	-inf	-0.05
Stress × Action Orientation	0.08	0.01	inf

Note. One-sided bias corrected bootstrap intervals are presented for hypothesized regression parameters. inf: infinity as lower (-inf) or upper (inf) bound of the one-sided confidence interval. CI = confidence interval.

partners. In other words, one's own or partner's relationship satisfaction depended more strongly on the level of stress of state-oriented individuals than on the level of stress of action-oriented individuals (see Table 4 for the path coefficients). This pattern was confirmed when we analyzed the simple slopes for the actor effect on relationship satisfaction using the online tool provided by Preacher, Curran, and Bauer (2006). The slope for action-oriented individuals, that is, the slope for persons whose action-state orientation is 1 standard deviation above the mean, was only marginally significant, simple slope = -0.12 , $t = -2.10$, $p = .08$. The slope for state-oriented individuals, that is, the slope for persons whose action-state orientation is 1 standard deviation below the mean, was significant, simple slope = -0.27 , $t = -6.17$, $p < .001$ (see also Figure 2). The same was true for the slopes of the partner effect. The simple slopes illustrate that stress has an adverse effect on relationship satisfaction, especially when a person or that person's partner are relatively state oriented.

Additional analysis: Depressive symptomatology as a control variable

After examining our main assumptions, we tested an additional model to gain more insight into our data. Because controlling for a conceptually similar variable would allow us to gain more specificity concerning the role of action-state orientation as a moderator of stress, we controlled for minor psychiatric morbidity with a main focus on depressive symptomatology.

The German version of the General Health Questionnaire (GHQ-12; Rompell, Braehler, Roth, & Glaesmer, 2013) was administered. The GHQ-12 is used as a uni-dimensional measure and assesses mental distress or a minor psychiatric morbidity, expressed as depressive symptomatology (see Tables 1 to 3 for descriptives). Because state orientation should lead to similar symptomatology, this measure can be considered as conceptually close to action-state orientation. Controlling for level of depressive symptomatology should clarify the effects of action-state orientation. If all results remain the same, we can be more confident that they are truly related to action-state orientation and not just the result of a general tendency to process information or

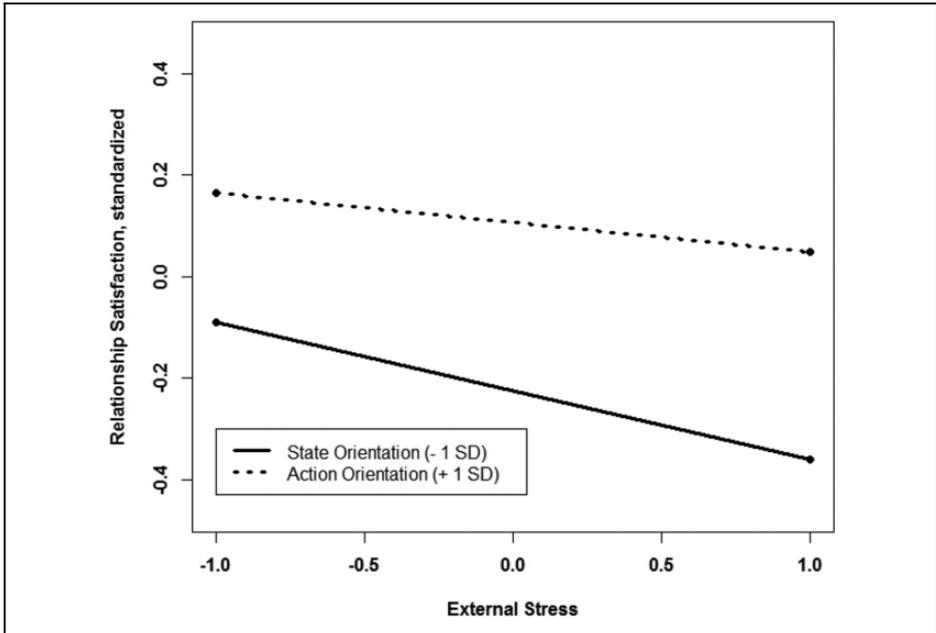


Figure 2. Simple slopes for the actor effect of external stress and action orientation on relationship satisfaction, all variables standardized.

behave in a somewhat depressive style, a common aspect of state orientation and depressive symptoms. We included the level of depressive symptomatology as assessed with the GHQ as a control variable in the final model for external stress. The model for the total sample with GHQ score controlled for fit the data well: $\chi^2(6) = 8.32, p = .22$, CFI = .99, and RMSEA = .03; $p(\text{RMSEA} < .05) = .66$. With this model, 15.9% of the variance in women's relationship satisfaction and 14.7% of the variance in men's relationship satisfaction can be explained. The GHQ score relates negatively to relationship satisfaction. The actor effect for action orientation remains significant, as do the actor and partner effects for external stress. In addition, the actor and the partner effect for the interaction term remains significant. In other words, the pattern of results stays the same even if we control for the level of depressive symptomatology.

Discussion

Undeniably, the most important findings in our study are the actor and partner effect of the interaction term between action orientation and external stress predicting relationship satisfaction. While state-oriented individuals and their partners suffered at higher stress levels, action-oriented individuals and their partners were less affected by higher levels of external stress. In other words, when one partner is action oriented in times of stress, this is beneficial for both partners in terms of relationship satisfaction. This finding highlights the importance of individual self-regulatory competencies for relationship

satisfaction. While many studies demonstrated the benefits of such action control skills for individuals, to our knowledge, no published study has examined the association between action orientation and relationship satisfaction (but see Jostmann, Karremans, & Finkenauer, 2011 for a study on AoF, threat, and relationships).¹ In our study, no gender differences appeared; thus, all effects are the same for women and for men.

We were able to replicate the well-known finding that stress from outside the relationship spills over and is negatively associated with one's own relationship satisfaction (e.g., Bodenmann et al., 2007; Neff & Karney, 2004). We also replicated the crossover effect: High levels of external stress of one partner negatively influence the relationship satisfaction of the other partner (Neff & Karney, 2007). These effects are well known from prior research and play an important role for relationship functioning (e.g., Neff & Karney, 2009).

In addition to the hypothesized moderation effect, action orientation was positively related to one's own relationship satisfaction. We did not predict this actor effect, but it might reflect a general tendency of action-oriented individuals to perceive the world at large as manageable and positive. As discussed in more detail below, it might also hint at an experiential bias of action-oriented individuals: It is possible that because of their positive experience with the regulation of stress and demands, they perceive situations as less demanding and consequently their relationship satisfaction suffers less from external circumstances. However, this is speculative and certainly warrants more research. There was no partner effect of action orientation.

Age hypothesis

Contrary to our hypothesis, effects were comparable across all age-groups. This is surprising, considering the huge age range from 20 to 80 years and the various educational backgrounds. In our data, we could not perfectly replicate earlier findings on age differences in action-state orientation itself, showing that older individuals exhibit higher levels of action orientation. Even though the means seem to be higher for the oldest age-group (see Tables 1 to 3), the assumption of a positive correlation between age and action orientation was only supported for men but not for women. It remains unclear why women in our sample did not show the relation between age and action orientation that other studies have found (Gröpel et al., 2004; Hennecke & Freund, 2016). Nevertheless, different models for different age-groups still could have resulted. Several explanations may be considered concerning the lack of age differences for the relations between age, action orientation, and relationship satisfaction. First, it could be that even though self-regulatory competence, represented here by action orientation, increases with age (Freund, Nikitin, & Ritter, 2009), older people may not rely more strongly on this skill. In other words, even though they possess better self-regulatory skills, they do not use them to a greater extent to deal with external stress. Second, one could assume that older individuals experience less external stress than younger individuals or that for them external stress is less strongly linked with relationship satisfaction. In this case, action orientation could not exert a buffering effect because the basic negative effect of stress on relationship satisfaction would be diminished. Even though there is a negative correlation between age and external stress in our data ($r = -.18$; $p = .001$ for women;

$r = -.27$; $p < .001$ for men), the good model fit of the multigroup APIMoM means that all relations are the same in all age-groups. This applies not only to the buffering effect of action orientation but also to the detrimental effect of external stress on relationship satisfaction. It speaks for the robustness of our results and the importance of action-state orientation that effects are the same across our three age-groups. Moreover, as age-group and relationship duration are highly correlated ($r = .97$), it seems that the buffering effect of action orientation unfolds independently of the degree of “codevelopment” and common experiences of partners.

The moderating role of action-state orientation

Theoretically, there are several possible explanations for the stress-buffering effect of action orientation. First, drawing from recent conceptualizations of action-state orientation, it can be assumed that action-oriented individuals are able to maintain or recruit positive affect even under high levels of stress (Kuhl, 2000). This positive affect could influence relationship satisfaction positively if it is expressed in more positive mood and more positive communication. Second, beyond or instead of the mentioned mechanism, positive affect can function as a catalyst of action initiation (Kuhl, 2000). According to this assumption, the initiation of adaptive behavior is easier for action-oriented individuals than for state-oriented individuals because of their capability to automatically recruit positive affect for action initiation in times of need. Third, because of this, more successful initiation of adaptive behavior like planning or initiating action more resources in terms of time and energy might be left for relationship maintenance behaviors. Fourth, it might be that action orientation influences how individuals appraise their stress in the sense that action-oriented individuals experience their life generally as less stressful than state-oriented individuals. The first-order correlation between action orientation and external stress seems to support this supposition (see Tables 1 to 3). However, despite this correlation, stress still has a unique influence on relationship satisfaction in the APIMoM. In that model, action orientation is a simultaneous predictor of relationship satisfaction. So, one could argue that the negative influence of external stress on relationship satisfaction (as a semipartial regression coefficient) remains significant, even though we controlled for action orientation. If action orientation indeed changes how much individuals appraise events in their life as stressful, it does not do this so much that it completely diminishes the experience of stress and its negative relations to relationship satisfaction. Thus, action orientation seems to buffer partners against stress on top of a possible influence on the general appraisal of situations. Fifth, action orientation has been embedded in the theory of volitional action (e.g., Kuhl, 2000). This theory proposes that action-oriented stress regulation activates the implicit self with its enormous experiential processing capacity. In this conceptualization, gaining self-access means gaining access to a variety of relevant action alternatives, personal concerns, creative ideas for problem-solving, and other components of the (implicit) self that can have a direct effect on conflict resolution, stress reduction, and mutual understanding within the relationship.² Future studies will have to find out whether one or all of these processes are involved to understand in more detail why and how an action-oriented person is better able to engage in efficient action control and what exactly leads to

heightened relationship satisfaction. In any case, if one partner possesses self-regulatory skills, for example, action orientation, that enable him or her to deal efficiently with external stressors, less time and energy needs to be spent with these stressors. As a result, both partners should profit from the relationship maintenance behavior that becomes possible, either because the partner is caring and relaxed despite high levels of external stress or because he/she simply has more time to spend together.

Finally, we emphasize that our study focused on external stress experienced by participants as demands. Jostmann et al. (2011) studied the effect of AoF on relationships, taking perceived relationship threats into account, and found significant associations. We assume that with a stress measure that focuses predominantly on threatening aspects of stress, we might have obtained similar results in our study for AoF as we now did for AoD. Thus, it is not stress per se that is moderated by action-state orientation per se, but the perceived quality of the stress has to be taken into account in order to find relevant buffering effects of one of the two different forms of action orientation. While AoD is likely to interact with stress that is perceived as demanding, as in our study, AoF is likely to interact with stress that is perceived as threatening. It is important to keep in mind that the stress measure as well as the action-state orientation measure pertains to the subjective reality of the participants. Thus, we assessed stress that is perceived as demanding and related it to action orientation concerning demands, or in other words, to an individual difference variable that captures how persons tend to perceive stress: as demanding (as opposed to threatening, see AoF) but manageable (AoD as opposed to SoD). It would be interesting for future research to assess both types of action-state orientation and different perceived qualities of stress to test whether indeed the different forms of action-state orientation interact with different perceived qualities of stress.

Depressive symptomatology as control variable

In an additional analysis, we included minor depressive symptomatology as a control variable regressing relationship satisfaction on external stress and action-state orientation. Because the effects of action-state orientation remain the same, we can rely more strongly on the assumption that action-state orientation specifically is responsible for the effects and not just a general tendency to process the world in a slightly negative, depressive style, a common feature of state orientation and depressive symptoms.

Limitations and conclusion

Some limitations of our study have to be taken into account. First, these are cross-sectional data. Even though it is not likely that external stress influences the predisposition toward action or state orientation, it is not impossible. It will be important to test whether the assumed directions of effects hold with longitudinal data. Second, our sample provided us with variance that was limited in two ways: External stress in general was rather low, and relationship satisfaction was rather high (see Tables 1 to 3). This limited variance might explain the low values of the path coefficients. However, we believe that it is promising that we obtained significant results and were able to explain

an acceptable amount of variance despite this limitation, while also replicating spillover and crossover effects. In a sample more heterogeneous with regard to external stress and relationship satisfaction, we expect effects to be even stronger.

Third, it might be important to make sure that the results are the same with other, related dependent variables. Relationship satisfaction is a global cognitive assessment of the relationship. Taking more behavioral indicators of relationship quality into account (e.g., communication, dyadic coping) might add information to the question of how exactly action-state orientation buffers individuals against the detrimental effects of external stress. In the same vein, it might be interesting for future research to examine processes that mediate beneficial effects of action orientation in romantic relationships. More fine grained data may be needed (e.g., diary studies) to provide evidence for the aforementioned mediating mechanism of positive affect on the initiation of adaptive behavior.

Fourth, when asking participants about their stress level during the last week, we probably assessed acute stressors that took place only during that week as well as more chronic stressors that had an onset before that week or lasted longer than that week. For the future, it might be important to apply a more fine-grained stress measure that differentiates between different temporal dimensions of stress to find out whether action orientation buffers acute external stress as well as chronic external stress (see Randall & Bodenmann, 2009).

In conclusion, using a relatively large dyadic sample representing different age-groups, we demonstrate that action-state orientation buffers the detrimental effects of external stress on relationship satisfaction. Thus, action-state orientation is an important construct when looking at the interplay between stress and relationship satisfaction. Future studies should take this into account. From a practical standpoint, these findings underscore the value of not just alerting couples to the possible effects of stress on their relationship (e.g., Rogge, Cobb, Lawrence, Johnson, & Bradbury, 2013) but also encouraging them to self-regulate in a more action oriented way as it is taught in the Couples Coping Enhancement Training (Bodenmann & Shantinath, 2004).

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research has been funded by the Swiss National Science Foundation (SNSF: CRSI11_133004/1) to Guy Bodenmann, Veronika Brandstätter, Mike Martin, Fridtjof W. Nussbeck, and Thomas N. Bradbury.

Notes

1. See Jostmann et al. (2011) for a study that focuses on AoF and relationships by looking at relationship threat instead of external stress.
2. We thank an anonymous reviewer for suggesting this possibility.

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