

## **Relational turbulence in the post-deployment transition: Self, partner, and relationship focused turbulence**

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Relational Turbulence in the Post-Deployment Transition:  
Self, Partner, and Relationship Focused Turbulence

Abstract

This study applied the relational turbulence model to the communication of U.S. service members and at-home partners following the return from a tour of duty by evaluating three turbulence markers: (a) relational maintenance, (b) partner responsiveness, and (c) turmoil appraisals. Participants were 235 individuals (128 service members, 107 at-home partners) who completed an online questionnaire within six months following reunion. Relational uncertainty and interference from partners predicted turbulence markers, and they partially mediated the association between relationship satisfaction and turbulence markers. Results suggest that the relational turbulence model is useful for illuminating the experiences of military couples during the post-deployment transition. Findings also point to turbulence markers that may be salient during a variety of relationship transitions.

*Keywords:* military deployment, partner interference, relational turbulence, relational uncertainty, relationship satisfaction, turmoil

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The *relational turbulence model* explains why transitions within romantic relationships are tumultuous (Knobloch & Theiss, 2010; Solomon & Knobloch, 2004; Solomon & Theiss, 2008). *Relational turbulence* represents the propensity to react intensely to dyadic events that would be mundane under routine circumstances (Solomon & Knobloch, 2001, 2004). Transitions are turbulent because they spark questions about involvement and interrupt daily routines (Solomon & Knobloch, 2004). Whereas the model's first iteration focused on upheaval in the transition from casual to serious dating (Solomon & Knobloch, 2001, 2004), subsequent research focused on how committed couples manage issues such as infertility (Steuber & Solomon, 2008) and breast cancer (Weber & Solomon, 2008). In this study, we use the model to study how U.S. service members and at-home partners communicate during the post-deployment transition.

Many military couples eagerly anticipate reunion following deployment with idyllic expectations (Yerkes & Holloway, 1996), but such transitions can be challenging (Sahlstein, Maguire, & Timmerman, 2009). Returning service members may be overwhelmed by the changes that occurred at home during their absence (Bowling & Sherman, 2008), at-home partners may have trouble relinquishing autonomy (Gambardella, 2008), and both individuals may question their ability to rekindle romance (Vormbrock, 1993). In the six months following homecoming, both partners face an elevated risk of depression, anxiety, post-traumatic stress disorder, and dyadic distress (McNulty, 2005; Nelson Goff, Crow, Reisbig, & Hamilton, 2007; Renshaw, Rodrigues, & Jones, 2008). Thus, incorporating a service member back into domestic life can be more demanding than deployment itself (Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Mmari, Roche, Sudhinaraset, & Blum, 2009).

Extending the relational turbulence model to the post-deployment transition advances the literature in four ways. Conceptually, it broadens the model's conceptualization of turbulence by considering self, partner, and relationship sources of upheaval. This study also expands the model by considering transitions in more established relationships beyond courtship. Pragmatically, it draws on theory to develop practical guidelines to help military couples preserve dyadic well-being during the post-deployment transition. It also lays a foundation for examining relational turbulence during all stages of the deployment cycle, including notification of deployment, preparation for deployment, the deployment itself, and reunion. Accordingly, we apply the relational turbulence model to U.S. service members and at-home partners' experiences during the post-deployment transition. After adapting the model's logic to the reunion phase, we report data from an online, cross-sectional survey of individuals ( $N = 235$ ; 128 service members, 107 at-home partners) living throughout the country who were reunited with a partner within the past six months. We focus on the six months after homecoming as it is a vital period for family adjustment and adaptation (Morse, 2006; Pincus, House, Christenson, & Adler, 2001).

### **Mechanisms in the Relational Turbulence Model**

The relational turbulence model accounts for people's experiences when relationships are in flux (Knobloch & Theiss, 2010; Solomon, Weber, & Steuber, 2010). The model explicates *transitions* as periods of discontinuity marked by shifts in how individuals define their relationship and behave toward each other. It also identifies relational uncertainty and interference from partners as mechanisms underlying relational turbulence.

### **Relational Uncertainty Predicts Relational Turbulence**

*Relational uncertainty* is the degree of confidence people have in their perceptions of involvement within interpersonal relationships (Knobloch, 2008, 2010). Less formally, relational

uncertainty is how sure or unsure individuals are about the nature of their relationship. It stems from three sources. *Self uncertainty* involves the questions people have about their own participation in a relationship (e.g., “How certain am I about my view of this relationship?”). *Partner uncertainty* encompasses the questions individuals have about their partner’s participation in a relationship (e.g., “How certain am I about my partner’s view of this relationship?”). *Relationship uncertainty* refers to the questions people have about the state of the relationship itself (e.g., “How certain am I about the definition of this relationship?”). In the post-deployment context, for example, returning service members and at-home partners may be unsure about their own commitment to their relationship, how faithful their partner was during the separation, and how to communicate upon reunion. Although self, partner, and relationship uncertainty are conceptually related and empirically correlated (Knobloch, 2010), they are discrete components of relational uncertainty.

The relational turbulence model theorizes that transitions spark questions about a relationship’s current status and future trajectory (Solomon & Knobloch, 2001, 2004). Thus, relational uncertainty is likely to be salient for military couples during the post-deployment transition. For example, service members and at-home partners may be unsure if they have grown apart, how much information to share, if feelings have changed, and how to move forward in the relationship (Bowling & Sherman, 2008; Sahlstein et al., 2009; Vormbrock, 1993). Relational uncertainty generates turbulence because individuals are limited in their ability to make sense of their relationship (Knobloch, 2007; Knobloch & Theiss, 2010).

Tests of the model have identified turbulence markers that correspond with relational uncertainty during courtship. Dating partners experiencing relational uncertainty judge unexpected events more negatively (Knobloch & Solomon, 2002), their partner’s behavior as

more irritating (Solomon & Knobloch, 2004; Theiss & Knobloch, 2009; Theiss & Solomon, 2006b), and hurtful episodes as more intense (Theiss, Knobloch, Checton, & Magsamen-Conrad, 2009). They also feel more anger, sadness, fear, and jealousy (Knobloch, Miller, & Carpenter, 2007; Knobloch, Solomon, & Cruz, 2001; Theiss & Solomon, 2006a), engage in more topic avoidance (Knobloch & Carpenter-Theune, 2004), and perceive their friends and family members to be less supportive of their courtship (Knobloch & Donovan-Kicken, 2006). Hence, relational uncertainty promotes experiences of turbulence.

### **Interference from Partners Predicts Relational Turbulence**

Interference from partners is a second mechanism in the model that generates tumult. According to Berscheid's Emotion-in-Relationships Model (1983, 1991), people in established partnerships mesh their daily routines such that partners depend on one another to accomplish goals. These intertwined patterns become habitual over time, but a sudden change can disturb previously smooth routines. Individuals can interrupt each other's activities in two ways.

*Interference from partners* occurs when a partner's interruption blocks progress toward a goal ("You threw out my comfy sneakers?"), and *facilitation from partners* occurs when a partner's interruption assists in the completion of a goal ("Thanks for stopping to get an oil change – you saved me a trip."). A change in routine is disruptive until partners learn how to facilitate, rather than interfere with, each other's goals.

Military couples may be particularly vulnerable to interference when they attempt to reintegrate their lives following deployment. Military families must adjust their habits to accommodate a new member, who, in turn, must learn how to fit into household patterns that changed during his or her absence (e.g., Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Mmari et al., 2009). Romantic partners need to renegotiate household chores, clarify roles,

redistribute decision-making power, and regulate privacy (Bowling & Sherman, 2008; Gambardella, 2008; Wood, Scarville, & Gravino, 1995). Thus, ample opportunities exist for partner interference during the post-deployment transition.

Empirical tests have revealed that partner interference predicts turbulence markers within courtship. Individuals experiencing interference from their partner view irritations as more severe (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b), report more hindrance from social network members (Knobloch & Donovan-Kicken, 2006), feel more anger, sadness, fear, and jealousy (Knobloch et al., 2007; Knobloch & Theiss, 2010; Theiss & Solomon, 2006a), and appraise their partner's behavior as more hurtful (Theiss et al., 2009). Thus, partner interference is implicated in people's experiences of turbulence.

### **Relational Turbulence During the Post-Deployment Transition**

Relational turbulence encompasses an assortment of constructs that reflect people's perceptions of their own behavior, their partner's behavior, and the dynamics of the relationship (cf. Knobloch, 2007; Knobloch & Donovan-Kicken, 2006; Theiss & Knobloch, 2009). The fundamental features of a particular transition may render some turbulence markers more or less salient (e.g., Solomon et al., 2010). Military couples, for example, may experience unique turbulence markers across different phases of the deployment cycle, including the notification of deployment, preparation for deployment, deployment itself, and reintegration. Turbulence markers relevant to the reintegration period are implied by the tasks facing military couples upon reunion. Research suggests three activities that are fundamental to the post-deployment transition: (a) communicating to maintain the relationship, (b) assessing partner responsiveness, and (c) appraising turmoil in the relationship (e.g., Bowling & Sherman, 2008; Peebles-Kleiger & Kleiger, 1994; Vormbrock, 1993).

### **Relational Maintenance**

Upon reunion, military couples reacquaint themselves by spending quality time together and communicating to preserve the relationship (e.g., Bowling & Sherman, 2008; Merolla, 2010; Wood et al., 1995). *Relational maintenance behaviors* are strategic and routine behaviors that uphold, sustain, or improve the quality of a relationship (Canary & Stafford, 1992; Stafford, Dainton, & Hass, 2000). Individuals enact relational maintenance behaviors when they are motivated to continue their relationship into the future (Weigel & Ballard-Reisch, 2008), often because they perceive the partnership to be fair, equitable, and rewarding (Stafford & Canary, 2006). Three relational maintenance behaviors are particularly relevant to military couples' communication during the post-deployment transition (e.g., Bowling & Sherman, 2008; Vormbrock, 1993): (a) offering *assurances* of continued investment in the relationship, (b) communicating with *openness* about the nature of the relationship, and (c) engaging in constructive *conflict management* behaviors (Stafford et al., 2000). These three behaviors are vital during the post-deployment transition for couples to reconnect, build intimacy, and promote dyadic well-being (e.g., Bowling & Sherman, 2008; Faber et al., 2008; see also Merolla, 2010).

A lack of relational maintenance is a self-focused marker of turbulence that reveals people's motivation to invest in their relationship. Military couples who are experiencing relational uncertainty and partner interference during reunion may engage in less relational maintenance. Indeed, relational uncertainty is negatively associated with relational maintenance in romantic relationships (Dainton, 2003) and cross-sex friendships (Guerrero & Chavez, 2005; Weger & Emmett, 2009). In addition, individuals who are frustrated by a partner's interference are unlikely to make efforts to maintain the relationship. Thus, we propose the following hypotheses:



*H1:* Relational uncertainty is negatively associated with people's reports of relational maintenance behaviors during the post-deployment transition.

*H2:* Interference from partners is negatively associated with people's reports of relational maintenance behaviors during the post-deployment transition.

### **Partner Responsiveness**

A second task during the post-deployment transition is gauging a partner's responsiveness. Military couples know that their partner's priorities may change during the time apart (e.g., Peebles-Kleiger & Kleiger, 1994; Sahlstein et al., 2009); hence, the post-deployment transition is a time for individuals to assess whether their partner is still attuned to them (e.g., Faber et al., 2008; Vormbrock, 1993; Wiens & Boss, 2006). *Partner responsiveness* occurs when a partner recognizes and supports core aspects of the self (Reis, 2007; Reis, Clark, & Holmes, 2004; Reis & Shaver, 1988). It arises from communication between people, particularly via conversation behaviors such as listening, empathizing, and offering support (Reis, 2007; Reis et al., 2004). In fact, partner responsiveness is a pathway through which people's self-disclosure cultivates intimacy (Laurenceau, Barrett, & Pietromonaco, 1998; Shelton, Trail, West, & Bergsieker, 2010). The post-deployment transition is more pleasant when service members and at-home partners are responsive to each other's needs (e.g., Wiens & Boss, 2006).

Partner responsiveness is a partner-focused turbulence marker that stems from people's perceptions of their mate's behaviors. Returning service members and at-home partners who are grappling with relational uncertainty and partner interference are likely to perceive their partner as less responsive. We are not aware of any work that has considered partner responsiveness in conjunction with the mechanisms of turbulence, so we rely on deductive logic to submit the following hypotheses:

*H3:* Relational uncertainty is negatively associated with people's reports of a partner's responsiveness during the post-deployment transition.

*H4:* Interference from partners is negatively associated with people's reports of a partner's responsiveness during the post-deployment transition.

### **Appraisals of Turmoil**

A third task during the post-deployment transition involves judging the climate of the relationship (e.g., Peebles-Kleiger & Kleiger, 1994; Vormbrock, 1993). Service members and at-home partners recognize that their partnership will change across the cycle of deployment (e.g., Bowling & Sherman, 2008; Vormbrock, 1993). The reunion period is a time to evaluate whether a relationship is more or less viable than before the separation. *Appraisals of turmoil* are judgments of the amount of upheaval in a relationship (Knobloch, 2007; Knobloch & Theiss, 2010). In other words, the assessments military couples make about turmoil reveal the tenor of their partnership (e.g., Bowling & Sherman, 2008).

Appraisals of turmoil reflect relational turbulence that is focused on the nature of the relationship itself. Military couples experiencing relational uncertainty and partner interference are likely to view their relationship as tumultuous. Within courtship, the mechanisms of turbulence share positive associations with people's appraisals of turmoil (Knobloch, 2007; Knobloch & Theiss, 2010). To examine whether this link translates to the reunion of military couples in more established relationships, we propose the following hypotheses:

*H5:* Relational uncertainty is positively associated with people's appraisals of turmoil during the post-deployment transition.

*H6:* Interference from partners is positively associated with people's appraisals of turmoil during the post-deployment transition.

Although relational maintenance, partner responsiveness, and appraisals of turmoil are not the only markers of turbulence with relevance to the post-deployment transition, their inclusion is advantageous for three reasons. Most notably, these constructs are salient to reunion following deployment (e.g., Bowling & Sherman, 2008; Peebles-Kleiger & Kleiger, 1994; Vormbrock, 1993). They also encompass perceptions of one's own communication, the partner's communication, and the relationship climate. Third, they advance the relational turbulence model by including two constructs not previously incorporated into the model (i.e., relational maintenance and partner responsiveness).

### **Relationship Satisfaction**

An unexplored issue within the relational turbulence model is whether relational uncertainty and interference from partners are unique predictors of turbulence beyond relationship satisfaction. *Relationship satisfaction* indexes how enjoyable and pleasurable a relationship is (e.g., Bradbury, Fincham, & Beach, 2000; Fincham & Beach, 2006). Although previous versions of the model implied that relational uncertainty and interference from partners operate independently of relationship satisfaction (e.g., Knobloch & Theiss, 2010; Solomon & Knobloch, 2004), these constructs are likely interrelated. Relationship satisfaction is a component of relationship quality (Fletcher, Simpson, & Thomas, 2000) that accounts for many relationship behaviors (Fincham & Beach, 2006). Moreover, relationship satisfaction is negatively associated with relational uncertainty (Dainton, 2003; Knobloch, 2008), and positively associated with relational maintenance behaviors (Stafford & Canary, 2006; Stafford et al., 2000; Weigel & Ballard-Reisch, 2001) and partner responsiveness (Lemay, Clark, & Feeney, 2007). Thus, more nuanced theorizing is warranted about how relationship satisfaction intersects with turbulence.

We offer four potential explanations, some competing and some compatible, for the role of relationship satisfaction in the relational turbulence model. One possibility is that relational uncertainty and partner interference do not predict turbulence beyond relationship satisfaction. If relational uncertainty and partner interference are wholly redundant with relationship satisfaction, the model offers an unnecessarily complex explanation for turbulent transitions. A second option is that relational uncertainty and partner interference are unique predictors of turbulence beyond relationship satisfaction. This finding would suggest that the mechanisms have distinctive explanatory ability.

A third alternative is that relationship satisfaction moderates the associations that relational uncertainty and partner interference share with the turbulence markers. If such moderation exists, interventions based on the relational turbulence model can target particular subsamples of military couples. A fourth alternative is that relational uncertainty and interference from partners fully or partially mediate the association between relationship satisfaction and turbulence. In such a case, relational uncertainty and/or interference from partners are pathways through which relationship satisfaction contributes to turbulence. Research questions are offered to evaluate these possibilities.

*RQ1:* Are relational uncertainty and partner interference unique predictors of turbulence markers beyond relationship satisfaction?

*RQ2:* Does relationship satisfaction moderate the associations that relational uncertainty and interference from partners share with turbulence markers?

*RQ3:* Do relational uncertainty and partner interference mediate the associations relationship satisfaction shares with turbulence markers?

## **Method**

Data from U.S. service members and romantic partners were collected using an online survey. Multiple recruitment strategies were employed to attract participants across branches of service, regions of the country, deployment circumstances, and levels of relationship satisfaction. The study was publicized by (a) e-mails to family readiness officers, chaplains, and military personnel across the country; (b) flyers circulated at reintegration workshops required for many returning service members; and (c) posts on online forums and message boards geared toward military families. Individuals were invited to participate if (a) they were currently involved in a romantic relationship, (b) they or their romantic partner had returned from deployment in the past six months, and (c) they had access to a secure and private internet connection. Only one partner per couple was eligible to participate.

Participants included 235 individuals (100 males, 135 females) living in 30 U.S. states who provided complete data. The sample contained 128 individuals (54%; 98 males, 30 females) who were in the military ( $n = 25$  were part of a dual-career military couple), and 107 individuals (2 males, 105 females) who were civilian partners. Of the 128 service members, 117 had returned home from deployment within the past six months (in 7 of those cases, *both* partners had returned home within the past six months), and 11 were part of a dual-career military couple in which the partner had returned home within the past six months.

Participants ranged from 19 to 55 years of age ( $M = 32.95$  years,  $SD = 8.53$  years) and were Caucasian (85%), African American (6%), Hispanic (6%), Asian (1%), Native American (1%), and other (1%). Romantic relationships averaged 9.59 years in length ( $SD = 7.25$  years). Most participants were married (82%); others were casually dating (3%), seriously dating (9%), or engaged to be married (6%). Most participants lived together (89%), and more than half had children (59%).

Service members were affiliated with the U.S. National Guard (59%), Army (32%), Marines (4%), Air Force (3%), and Navy (2%). Military status was active duty (51%), reserves (38%), inactive ready reserves (4%), discharged (1%), retired (1%), or other (5%). Deployment length ranged from 2 to 24 months and averaged 11.40 months ( $SD = 2.57$  months), and the average time home from deployment was 3.16 months ( $SD = 2.12$  months).

Participants provided demographic information and then responded to open-ended items unrelated to this study. Participants then completed closed-ended measures of study variables. They received a \$15 gift card from a national retailer for their participation. Only one set of responses was accepted for each computer IP address.

Confirmatory factor analyses were conducted using AMOS to evaluate scale dimensionality. These procedures require that factors show evidence of face validity, internal consistency, and external consistency (Hunter & Gerbing, 1982). The variables were computed by averaging the scores for the unidimensional items.

## Measures

**Relational uncertainty.** To limit survey length, we used brief versions of Knobloch and Solomon's (1999) measures of self, partner, and relationship uncertainty (see Theiss & Knobloch (2009). Participants completed items introduced by the stem "How certain are you about . . . ?" (1 = *completely or almost completely uncertain*, 6 = *completely or almost completely certain*). Items were reverse-scored so that higher values indicated greater relational uncertainty. *Self uncertainty* was measured by four items (e.g., how you feel about your relationship;  $M = 2.00$ ,  $SD = 1.22$ ,  $\alpha = .93$ ). *Partner uncertainty* included four parallel items (e.g., how your partner feels about your relationship;  $M = 2.05$ ,  $SD = 1.40$ ,  $\alpha = .96$ ). *Relationship uncertainty* also contained four items (e.g., the current status of your relationship;  $M = 2.07$ ,  $SD = 1.34$ ,  $\alpha = .94$ ).

**Interference from partners.** Following Theiss and Knobloch (2009), a brief version of Solomon and Knobloch's (2001) measure was used to operationalize partner interference.

Participants recorded their agreement (1 = *strongly disagree*, 6 = *strongly agree*) with six items (e.g., my partner interferes with the things I need to do each day;  $M = 2.22$ ,  $SD = 1.14$ ,  $\alpha = .90$ ).

**Relationship satisfaction.** A scale constructed by Fletcher et al. (2000) operationalized relationship satisfaction. Participants responded to items prefaced by the stem "At the current time, how ...?" (1 = *not at all*, 7 = *extremely*). Three items comprised the scale (e.g., satisfied are you with your relationship;  $M = 5.46$ ,  $SD = 1.52$ ,  $\alpha = .96$ ).

**Relational maintenance.** Items crafted by Stafford et al. (2000) assessed maintenance behaviors. Individuals responded to items prefaced by the stem "How often do you ...?" (1 = *not at all*, 7 = *very often*). *Assurances* contained four items (e.g., say "I love you" to your partner;  $M = 5.62$ ,  $SD = 1.54$ ,  $\alpha = .90$ ). *Openness* also entailed four items (e.g., are open with your partner about your feelings;  $M = 5.16$ ,  $SD = 1.78$ ,  $\alpha = .94$ ). *Conflict management* included four items (e.g., apologize to your partner when you are wrong;  $M = 5.56$ ,  $SD = 1.21$ ,  $\alpha = .83$ ).

**Partner responsiveness.** Items modeled after theorizing by Reis (2007; Reis et al., 2004) were written to gauge a partner's responsiveness. Participants evaluated how well statements described their partner (1 = *not at all true*, 7 = *completely true*). Six items measured partner responsiveness (e.g., my partner is responsive to my needs;  $M = 5.14$ ,  $SD = 1.49$ ,  $\alpha = .87$ ).

**Appraisals of turmoil.** A scale developed by Knobloch (2007) solicited people's appraisals of turmoil. Individuals rated a series of adjectives completing the stem "At the present time, this relationship is ...?" (1 = *strongly disagree*, 6 = *strongly agree*). Seven items formed a unidimensional factor (e.g., chaotic, turbulent, in turmoil;  $M = 2.72$ ,  $SD = 1.31$ ,  $\alpha = .91$ ).

## Results

The preliminary and substantive analyses employed two-tailed tests of statistical significance and an  $\alpha$  of .05. With a sample size of 235 individuals, power to detect medium effects ( $r = .30$ ) and large effects ( $r = .50$ ) exceeded .99 (Cohen, Cohen, West, & Aiken, 2003).

### **Preliminary Analyses**

Independent samples *t*-tests compared mean scores for (a) men ( $n = 100$ ) versus women ( $n = 135$ ), and (b) returning service members ( $n = 117$ ) versus at-home partners ( $n = 118$ ). Results indicated that women ( $M = 5.40$ ,  $SD = 1.66$ ) reported more openness than men ( $M = 4.84$ ,  $SD = 1.89$ ),  $t(233) = 2.36$ ,  $p = .019$ , and at-home partners ( $M = 5.49$ ,  $SD = 1.64$ ) reported more openness than returning service members ( $M = 4.82$ ,  $SD = 1.86$ ),  $t(233) = 2.91$ ,  $p = .004$ . These variables were covaried in the substantive analyses.

Bivariate correlations revealed that the number of months home was positively associated with self uncertainty, relationship uncertainty, and partner interference, and it was negatively associated with relationship satisfaction (see Table 1). Relational uncertainty was positively associated with partner interference. Relationship satisfaction was negatively correlated with relational uncertainty and partner interference. With respect to the turbulence markers, the maintenance behaviors were positively correlated with each other and with partner responsiveness. Turmoil was negatively associated with the other dependent variables.

### **Tests of the Hypotheses**

Hierarchical multiple regression evaluated the hypotheses linking relational uncertainty and partner interference with the turbulence markers. Step 1 of the models contained three covariates: (a) respondent's sex (dummy coded such that males = 0 and females = 1), (b) deployment status (dummy coded such that at-home partners = 0 and returning service members = 1), and (c) the number of months home from deployment. On Step 2, relationship satisfaction



was entered. The hypotheses were tested on Step 3 by including one source of relational uncertainty or partner interference in separate analyses to avoid multicollinearity.

**Relational maintenance.** The first analyses included assurances, openness, and conflict management as dependent variables (see Table 2). On the first step, results for the covariates revealed that the number of months home was negatively associated with assurances and conflict management. On the second step, relationship satisfaction was positively correlated with all three behaviors and explained between 24% and 45% of the variance. The third step evaluated relational uncertainty (*H1*) and partner interference (*H2*) as predictors of relational maintenance. With regard to relational uncertainty, results indicated that self uncertainty was negatively associated with all three relational maintenance behaviors, and partner and relationship uncertainty were negatively associated with assurances and openness. Thus, *H1* was partially supported. Interference from partners was negatively associated with assurances and conflict management. Hence, *H2* also received partial support.

**Partner responsiveness.** A second set of analyses considered relational uncertainty and partner interference as predictors of partner responsiveness (see Table 3). On the first step, the number of months home was negatively associated with partner responsiveness. Relationship satisfaction was positively associated with partner responsiveness on the second step, and it accounted for 47% of the variance. On the third step, the three sources of relational uncertainty (*H3*) and partner interference (*H4*) were negative predictors of partner responsiveness. Accordingly, both *H3* and *H4* were supported.

**Appraisals of turmoil.** A third group of analyses examined how relational uncertainty and partner interference predict appraisals of turmoil (see Table 3). The first step revealed that the number of months home was positively associated with appraisals of turmoil. On the second

step, the negative association between relationship satisfaction and appraisals of turmoil explained 41% of the variance. The third step revealed that relational uncertainty (*H5*) and partner interference (*H6*) shared positive associations with appraisals of turmoil. Consequently, *H5* and *H6* were supported.

### **Tests of the Research Questions**

Research questions asked (a) whether relational uncertainty and partner interference are unique predictors of turbulence beyond relationship satisfaction (*RQ1*); (b) whether relationship satisfaction moderates the associations between the mechanisms and the markers of turbulence (*RQ2*); and (c) whether the mechanisms mediate the associations between relationship satisfaction and the turbulence markers (*RQ3*). With regard to *RQ1*, the majority of analyses reported in Tables 2 and 3 revealed that relational uncertainty and partner interference explained unique variance in the turbulence markers beyond relationship satisfaction. Because relational uncertainty and partner interference are not redundant with relationship satisfaction, final analyses examined the possibilities of moderation (*RQ2*) and mediation (*RQ3*).

**Tests of moderation.** To evaluate *RQ2*, regression analyses were repeated with the addition on the fourth step of a two-way interaction term calculated as relationship satisfaction multiplied by the relevant source of relational uncertainty or partner interference. Following Aiken and West (1991), the independent variables were centered prior to these analyses, and the raw coefficients are reported rather than the standardized coefficients. Moderation was apparent in 8 of the 20 tests (*RQ2*). Relationship satisfaction moderated the associations between (a) openness and all four independent variables, (b) conflict management and both self and relationship uncertainty, and (c) partner responsiveness and both self and relationship uncertainty. The interactions were probed at one standard deviation below the mean, at the mean,

and at one standard deviation above the mean of relationship satisfaction (Aiken & West, 1991). Results revealed ordinal interactions such that the slopes for relational uncertainty and partner interference were stronger for people with high relationship satisfaction (see Table 4).

**Tests of mediation.** Consistent with the prerequisite conditions for mediation, (a) relationship satisfaction was correlated with both relational uncertainty and partner interference (see Table 1), (b) relationship satisfaction predicted the turbulence markers (see Tables 1, 2, and 3), and (c) relational uncertainty and partner interference predicted the turbulence markers when relationship satisfaction was covaried (see Tables 2 and 3).

As a first step in testing a multiple mediation model (*RQ3*), the regression analyses were repeated with (a) the covariates entered on Step 1; (b) relationship satisfaction entered on Step 2; and (c) all three sources of relational uncertainty and partner interference entered simultaneously on Step 3. Inspection of the tolerance and variance inflation factor statistics indicated that the degree of multicollinearity was high but acceptable.

Results from Step 3 indicated that relational uncertainty and partner interference, as a set, explained between 5% and 14% of additional variance beyond what was explained by relationship satisfaction (see Table 5). All three relational maintenance behaviors were predicted by relationship satisfaction and self uncertainty, and conflict management also was positively predicted by relationship uncertainty. Partner responsiveness was predicted by relationship satisfaction, partner uncertainty, and partner interference. Appraisals of turmoil were predicted by relationship satisfaction, relationship uncertainty, and partner interference.

Bootstrapping procedures recommended by Preacher and Hayes (2008) were used to evaluate mediation. Their approach involves computing two effects: (a) the *total indirect effect* tests the multiple mediation model, and (b) the *specific indirect effects* quantify the ability of

each mediator to transmit an effect (conditional on the other predictors in the model). The analyses employed 5,000 bootstrap samples with 95% bias corrected and accelerated confidence intervals. The covariates included respondent's sex, deployment status, and the number of months home. The estimates of the total indirect effects confirmed mediation for all of the dependent variables (see Table 6). The estimates of the specific indirect effects showed that self uncertainty carried the mediation for the maintenance behaviors, partner uncertainty and partner interference carried the mediation for partner responsiveness, and partner interference carried the mediation for appraisals of turmoil (*RQ3*).

### **Discussion**

We extended the relational turbulence model to examine how U.S. service members and at-home partners experience the post-deployment transition. The model proposes that times of transition are tumultuous because they spark questions about involvement and disrupt people's daily routines (Solomon & Knobloch, 2001, 2004). Accordingly, our predictors were relational uncertainty and interference from partners. Scholarship on the post-deployment transition implies that military couples face the tasks of maintaining their relationship, evaluating their partner's ability to meet their needs, and assessing the climate of their partnership (e.g., Bowling & Sherman, 2008; Peebles-Kleiger & Kleiger, 1994; Vormbrock, 1993). Hence, our outcome variables were people's reports of relational maintenance, partner responsiveness, and turmoil. We also moved the relational turbulence model forward by theorizing about how people's relationship satisfaction intersects with the mechanisms and markers of turbulence.

### **Understanding the Post-Deployment Transition**

Relational maintenance during the post-deployment transition helps military couples preserve dyadic well-being (e.g., Bowling & Sherman, 2008; Wood et al., 1995).

Communication behaviors that maintain relationships include offering assurances, talking openly about the relationship, and managing conflict constructively (Stafford et al., 2000). Findings indicated that self uncertainty was negatively associated with all three behaviors (*H1*), partner and relationship uncertainty were negatively associated with assurances and openness (*H1*), and partner interference was negatively associated with assurances and conflict management (*H2*). When the mechanisms were considered simultaneously, self uncertainty was a negative predictor of all three behaviors, relationship uncertainty was a positive predictor of conflict management, and partner interference was a negative predictor of conflict management.

These results highlight a connection between relational uncertainty and the ways people communicate to maintain relationships. Although previous research has linked relational uncertainty and relational maintenance behaviors (Dainton, 2003; Guerrero & Chavez, 2005; Weger & Emmet, 2009), our investigation is the first to compare the predictive power of self, partner, and relationship uncertainty. When considered as a set, self and relationship uncertainty diverged in their associations with relational maintenance. On one hand, partners with self uncertainty may be less willing to communicate to preserve the partnership. In other words, individuals with self uncertainty may curtail the investments they make in their relationship because they perceive few rewards in working to maintain a relationship when they are unsure about their commitment to it. On the other hand, partners with relationship uncertainty may be willing to communicate constructively to clarify the nature of the relationship and to avoid potentially taboo behaviors. This study is not unique in uncovering divergence among the three sources of relational uncertainty. Similar findings have surfaced for the directness of people's communication about irritating partner behavior (Theiss & Solomon, 2006b) and their perceptions of how much friends and family members question their relationship (Knobloch &

Donovan-Kicken, 2006). Not only do our results underscore the distinctiveness of self, partner, and relationship uncertainty, they also suggest that a comprehensive understanding of relational maintenance behaviors should consider the full spectrum of ambiguity about involvement.

The post-deployment transition provides opportunities for military couples to evaluate their partner's responsiveness (e.g., Faber et al., 2008; Wiens & Boss, 2006). Partners who communicate responsively show that they appreciate, value, and support each other's needs (Reis, 2007; Reis et al., 2004). Relational uncertainty (*H3*) and partner interference (*H4*) were negatively associated with a partner's responsiveness. In addition, partner uncertainty and partner interference continued to explain variance when the mechanisms were evaluated as a set.

In contrast to prior research on partner responsiveness, which focused on the associations that it shares with self-disclosure and intimacy (e.g., Shelton et al., 2010), our study adds relational uncertainty and partner interference to the list of predictors of partner responsiveness. Our results show that partner uncertainty and partner interference share particularly close ties with responsiveness. These associations may reflect conceptual and/or empirical overlap among people's views of their partner. At the same time, they highlight the utility of the mechanisms in the relational turbulence model for predicting partner responsiveness. Whereas prior research on partner responsiveness emphasized how it can help establish closeness, the relational turbulence model is useful for highlighting the circumstances that impede partner responsiveness. Our findings imply that a partner's doubts and disruptions may hamper people's ability to promote closeness via self disclosures. Additional research is needed to examine these possibilities.

Of the three markers of turbulence examined here, people's appraisals of turmoil are most strongly implicated in the model's logic. Relational uncertainty (*H5*) and partner interference (*H6*) were positively associated with the degree of turmoil service members and at-home

partners reported. When the mechanisms were examined as a set, partner interference persisted in predicting appraisals of turmoil. In other words, frequent interruptions to partners' goals and routines contribute to a relational climate that is particularly tumultuous. Moreover, if military couples had established a fluid routine prior to deployment, they may be particularly frustrated by a lack of coordination in their efforts to reintegrate their lives during reunion.

One notable result was that the experience of relational turbulence was more pronounced for couples who had been reunited for a longer period of time. Perhaps the early stages of reunion constitute a honeymoon phase, during which turbulence is overshadowed by people's excitement about being reunited. As couples settle into their routines and daily stressors emerge, more opportunities for upheaval may arise. Research on long-distance relationships suggests that couples do not always thrive when they are reunited. Stafford and Merolla (2007) found that long-distance partners with prolonged periods of separation between face-to-face visits experienced greater instability upon reunion. An influx of relational turbulence during the latter stages of the reunion period may help to explain why some military couples have difficulty sustaining closeness following lengthy deployments.

The results of this study are innovative for applying the relational turbulence model to the post-deployment transition. Initial tests of the model focused on the transition from casual dating to serious involvement within courtship (Solomon & Knobloch, 2001, 2004). More recent work has employed the model to examine how couples adjust to diagnoses of infertility (Steuber & Solomon, 2008) and breast cancer (Weber & Solomon, 2008). This study moves the relational turbulence model into a new context by documenting its relevance to the transition from deployment to reintegration. It also lays a foundation for examining other aspects of the post-deployment transition, including post-traumatic stress, parenting practices, career achievement,

and extended family obligations (e.g., Basham, 2008; MacDermid Wadsworth, 2010; Newby, McCarroll, Ursano, Fan, Shigemura, & Tucker-Harris, 2005). The results also suggest the relational turbulence model may have utility for explaining upheaval during other transitions in the deployment cycle. Future work on the relational turbulence model could expand in all of these directions to provide a more complete picture of how military couples navigate transitions.

Relationship satisfaction also figures into the connection between the mechanisms and markers of turbulence. Our findings showed some support for both moderated and mediated explanations for relationship satisfaction. In 40% of the tests of moderation, individuals who were very satisfied with their relationship had a stronger link between the turbulence markers and either relational uncertainty or partner interference (*RQ2*). In other words, people who are highly satisfied with their relationship are more troubled by relational uncertainty and partner interference. Whereas highly satisfied individuals are unaccustomed to coping with tumultuous circumstances in their relationship, very dissatisfied individuals may be less bothered because they accept hardships as normative dyadic functioning. Although speculative, this interpretation provides one explanation for the pronounced effect of relational uncertainty and interference from partners for highly satisfied couples. Consequently, scholars who seek to develop post-deployment interventions based on the relational turbulence model may opt to target their programs to very satisfied couples for maximum effectiveness.

More consistent evidence was apparent for mediation (*RQ3*). In all of the tests, the mechanisms of the model partially mediated the association between people's relationship satisfaction and their experiences of turbulence. Self uncertainty was a partial mediator for relational maintenance, partner uncertainty and partner interference were partial mediators for partner responsiveness, and partner interference was a partial mediator for appraisals of turmoil.



Thus, the relational turbulence model appears to offer an explanation for upheaval that is not merely a product of how satisfied individuals are with their relationship. Nevertheless, relationship satisfaction was a persistent predictor of turbulence: (a) it exerted a direct effect on all of the markers of turbulence that was only partially mediated by the mechanisms in the relational turbulence model, and (b) it moderated several associations between the mechanisms and markers of turbulence. Thus, the relational turbulence model should consider relationship satisfaction more explicitly in its logic for predicting upheaval in romantic relationships.

The results for *RQ3* also suggest that the relational turbulence model would benefit from theorizing about how relational uncertainty and partner interference diverge in their associations with various outcomes. The tests of mediation highlighted different mechanisms in the model as influential depending on the outcome examined. For example, self uncertainty carried the mediation for relational maintenance behaviors, which people enact to demonstrate their investment in a relationship. When people question their own involvement, they may be less likely to make an effort to maintain their relationship because they are less involved. Similarly, partner uncertainty and partner interference carried the mediation for partner responsiveness. Notably, all of these variables reflect partner-focused concerns about the relationship. With regard to appraisals of turmoil, partner interference carried the mediation. Disruptions to people's everyday goals and routines may be particularly likely to make the relationship feel tumultuous. The fact that relationship uncertainty did not carry the mediation in any of the analyses may reflect the outcomes we investigated; alternatively, the other mechanisms may provide more robust pathways for linking relationship satisfaction to turbulence markers.

### **Advancing the Relational Turbulence Model**

Our findings broaden the relational turbulence model in two ways. First, this study considered two new turbulence markers. Our results suggest that relational maintenance and partner responsiveness belong on the growing list of constructs that signal tumult. Whereas previous tests of the model have examined cognitive, emotional, and behavioral markers of turbulence (cf. Knobloch & Theiss, 2010; Theiss & Solomon, 2006a, 2006b), we elaborated the model's theorizing to consider markers tied to the self, the partner, and the relationship. Thus, this investigation expands the scope of the model's treatment of turbulence.

Second, this study documented the interplay between relationship satisfaction and the mechanisms of turbulence. Results show that relational uncertainty and partner interference (a) are unique predictors of turbulence beyond relationship satisfaction, and (b) partially mediate the link between relationship satisfaction and turbulence. In other words, the mechanisms explain turbulence beyond people's global evaluations of relational quality. Our results also highlight nuances in the associations that relationship satisfaction shares with the mechanisms and markers of turbulence. Consequently, the model may be well-served by exploring how relationship satisfaction corresponds with turbulence when relationships are in flux.

### **Strengths, Weaknesses, and Directions for Future Research**

Our study adds to previous work on the post-deployment transition in three ways. First, the investigation was informed by theory. Most empirical work on the post-deployment transition has provided descriptive detail about people's experiences (e.g., McNulty, 2005; Wiens & Boss, 2006; Wood et al., 1995). Notable exceptions include recent projects culled from ambiguous loss frameworks (Faber et al., 2008; Huebner et al., 2007), relational dialectics theory (Sahlstein et al., 2009), and role-exit theory (Gambardella, 2008). Ours is the second study (see also Knobloch & Theiss, 2011) that uses the relational turbulence model to examine

characteristics of the post-deployment transition. Second, in contrast to most research that has focused on civilian spouses (Wiens & Boss, 2006), particularly Army wives (SteelFisher, Zaslavsky, & Blendon, 2008; Wood et al., 1995), our study took into account both service members and at-home partners. Finally, our project collected data from individuals living in 30 states rather than people living in close proximity (e.g., Gambardella, 2008; Wood et al., 1995). Whereas studies that recruit from a particular base or unit may tap into homogenous experiences, our national sample enables generalizations beyond the experiences of a localized group.

Weaknesses limit the conclusions as well. First, participants reported relatively low levels of relational uncertainty and partner interference, so a lingering question is whether the findings apply to military couples with more extensive doubts and disruptions. Second, the sample was dominated by people affiliated with the U.S. Army or the National Guard, so the conclusions may not extend to military personnel who serve in the U.S. Air Force, Navy, or Marines. Service members aligned with different branches have diverse deployment experiences (Hosek, Kavanagh, & Miller, 2006), which may present unique challenges upon reintegration. In addition, the at-home partners in the sample were predominantly female, which limits our ability to generalize to the experiences of male at-home partners. The cross-sectional nature of our design is another limitation because it precludes us from observing how the post-deployment transition unfolds over time. Longitudinal data are necessary to document the trajectory of turbulence during the transition. Finally, we focused exclusively on the post-deployment period. Other transitions in the deployment cycle, including receiving orders to deploy, preparing for deployment, and navigating the separation itself, may coincide with turbulence as well.

### **Conclusion**

Military couples make substantial sacrifices to foster freedom, promote peace, and supply support throughout the world. Although service members and at-home partners may look forward to reunion with excitement, the post-deployment transition is not always carefree (Peebles-Kleiger & Kleiger, 1994; Wiens & Boss, 2006). The U.S. Department of Defense has taken steps in recent years to support returning service members and their families through a host of reintegration workshops, seminars, and retreats, but many of those interventions are not theoretically grounded or empirically validated (APA, 2007; Bowling & Sherman, 2008). This study took a very modest step toward illuminating the challenges facing service members and at-home partners during the post-deployment transition. Future work could capitalize on the utility of the relational turbulence model in this context by developing and testing programs to assist military couples navigating the transition.

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Table 1

*Bivariate Correlations*


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	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
V1: Months Home	---										
V2: Self Uncertainty	.19 **	---									
V3: Partner Uncertainty	.13	.73 ***	---								
V4: Relationship Uncertainty	.18 **	.93 ***	.79 ***	---							
V5: Interference from Partners	.21 **	.59 ***	.51 ***	.59 ***	---						
V6: Relationship Satisfaction	-.28 ***	-.80 ***	-.69 ***	-.81 ***	-.61 ***	---					
V7: Assurances	-.20 **	-.75 ***	-.61 ***	-.69 ***	-.51 ***	.71 ***	---				
V8: Openness	-.12	-.55 ***	-.45 ***	-.50 ***	-.35 ***	.50 ***	.77 ***	---			
V9: Conflict Management	-.20 **	-.63 ***	-.49 ***	-.57 ***	-.48 ***	.62 ***	.69 ***	.67 ***	---		
V10: Partner Responsiveness	-.20 **	-.67 ***	-.70 ***	-.71 ***	-.67 ***	.73 ***	.58 ***	.45 ***	.52 ***	---	
V11: Appraisals of Turmoil	.26 ***	.66 ***	.58 ***	.68 ***	.58 ***	-.68 ***	-.54 ***	-.41 ***	-.41 ***	-.66 ***	---

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Note.  $N = 235$ .

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 2

*The Regression of Maintenance Behaviors*


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	Assurances		Openness		Conflict Management	
	$R^2 \Delta$	$\beta$	$R^2 \Delta$	$\beta$	$R^2 \Delta$	$\beta$
<u>Step One</u>	.05 *		.05 **		.05 **	
Respondent's Sex		-.12		.01		-.02
Deployment Status		-.17		-.19		-.11
Months Home		-.19 **		-.10		-.19 **
<u>Step Two</u>	.45 ***		.24 ***		.34 ***	
Relationship Satisfaction		.71 ***		.52 ***		.61 ***
<u>Step Three</u>						
Self Uncertainty	.08 ***	-.48 ***	.03 **	-.31 **	.04 ***	-.32 ***
Partner Uncertainty	.02 **	-.22 **	.02 *	-.18 *	.01	-.11
Relationship Uncertainty	.04 ***	-.34 ***	.01 *	-.19 *	.01	-.17
Interference from Partners	.01 *	-.14 *	.00	-.07	.02 **	-.17 **

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Note.  $N = 235$ . Cell entries are  $R^2 \Delta$  statistics and standardized coefficients.

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

Table 3

*The Regression of Partner Responsiveness and Appraisals of Turmoil*

	Responsiveness		Turmoil	
	$R^2 \Delta$	$\beta$	$R^2 \Delta$	$\beta$
<u>Step One</u>	.05 *		.08 ***	
Respondent's Sex		-.16		.06
Deployment Status		-.14		.15
Months Home		-.20 **		.25 ***
<u>Step Two</u>	.47 ***		.41 ***	
Relationship Satisfaction		.72 ***		-.67 ***
<u>Step Three</u>				
Self Uncertainty	.03 **	-.27 **	.03 **	.28 **
Partner Uncertainty	.08 ***	-.39 ***	.02 **	.19 **
Relationship Uncertainty	.05 ***	-.38 ***	.04 ***	.35 ***
Interference from Partners	.09 ***	-.37 ***	.04 ***	.26 ***

Note.  $N = 235$ . Cell entries are  $R^2 \Delta$  statistics and standardized coefficients.

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

Table 4

*Test of Moderation at Three Levels of Relationship Satisfaction*

	Level of Relationship Satisfaction		
	Low	Medium	High
<u>Openness</u>			
Self Uncertainty	-.43 **	-.80 ***	-1.17 ***
Partner Uncertainty	-.16	-.40 ***	-.65 ***
Relationship Uncertainty	-.19	-.51 ***	-.83 ***
Interference from Partners	-.02	-.24 *	-.49 **
<u>Conflict Management</u>			
Self Uncertainty	-.31 ***	-.43 ***	-.55 ***
Relationship Uncertainty	-.13	-.23 **	-.33 **
<u>Partner Responsiveness</u>			
Self Uncertainty	-.33 **	-.45 ***	-.57 ***
Relationship Uncertainty	-.40 ***	-.52 ***	-.65 ***

*Note.*  $N = 235$ . Cell entries are unstandardized coefficients.

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



Table 5

*The Regression of the Dependent Variables onto the Predictors as a Set*

	Assurances	Openness	Conflict Management	Responsiveness	Turmoil
<u>Step Two</u>					
$R^2 \Delta$	.45 ***	.24 ***	.34 ***	.47 ***	.41 ***
Relationship Satisfaction $\beta$	.71 ***	.52 ***	.61 ***	.72 ***	-.67 ***
<u>Step Three</u>					
$R^2 \Delta$	.09 ***	.05 **	.06 ***	.14 ***	.07 ***
Relationship Satisfaction $\beta$	.30 ***	.26 *	.34 ***	.28 ***	-.31 ***
Self Uncertainty $\beta$	-.59 ***	-.45 **	-.50 **	.09	-.03
Partner Uncertainty $\beta$	-.12	-.15	-.06	-.29 ***	.03
Relationship Uncertainty $\beta$	.23	.29	.32 *	-.16	.29 *
Interference from Partners $\beta$	-.06	-.02	-.13	-.31 ***	.21 ***

Note.  $N = 235$ . Cell entries are  $R^2 \Delta$  statistics and standardized coefficients.

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

Table 6

*Total and Specific Indirect Effects for the Multiple Mediation Model*

	Assurances	Openness	Conflict Management	Responsiveness	Turmoil
<u>Total Indirect Effects</u>	.41 ***	.29 *	.21 **	.44 ***	-.31 ***
Confidence Intervals	.21 to .60	.04 to .57	.08 to .37	.29 to .59	-.47 to -.15
<u>Specific Indirect Effects</u>					
Self Uncertainty	.48 ***	.43 *	.32 ***	-.07	.02
Confidence Intervals	.25 to .73	.05 to .78	.14 to .50	-.30 to .14	-.17 to .23
Partner Uncertainty	.08	.13	.04	.20 ***	-.02
Confidence Intervals	-.06 to .22	-.10 to .35	-.09 to .16	.10 to .33	-.11 to .08
Relationship Uncertainty	-.19	-.27	-.20	.13	-.20
Confidence Intervals	-.48 to .06	-.66 to .16	-.43 to .03	-.15 to .39	-.49 to .03
Interference from Partners	.04	.01	.06	.19 ***	-.11 **
Confidence Intervals	-.05 to .12	-.12 to .13	.00 to .12	.11 to .26	-.20 to -.04

*Note.*  $N = 235$ . Cell entries are total and specific indirect effects and 95% bias corrected and accelerated confidence intervals.

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