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14. ABSTRACT

The reentry of service members back into family life after deployment can be extremely challenging for military couples. Understanding the factors that contribute to the reintegration difficulty of returning service members and at-home partners is essential for attracting, retaining, and safeguarding the nation's best military personnel. The ***goal of this project*** is to evaluate how people's mental health symptoms and romantic relationship characteristics predict their difficulty with reintegration.

The ***research design*** was an 8-wave longitudinal study in which 555 military couples completed an online survey once per month for eight consecutive months beginning at homecoming. Military couples were eligible to participate if (a) individuals were involved in a romantic relationship, and (b) both partners completed the Wave 1 survey during the first week after reunion following deployment. Preliminary findings point to the key role of both mental health symptoms and relationship characteristics in the reintegration difficulty experienced by returning service members and at-home partners (Knobloch, Knobloch-Fedders, & Yorgason, in preparation). Supplementary results indicate that people's reports of communication during deployment predict their symptoms of anxiety during the post-deployment transition (Knobloch, Knobloch-Fedders, & Yorgason, in press). We will use the data to generate research-based guidelines for reintegration.

15. SUBJECT TERMS
reintegration difficulty; military couples; mental health; anxiety; depression; posttraumatic stress; relationship satisfaction; relational turbulence

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Reintegration Difficulty of Military Couples Following Deployment
Knobloch (PI) & Knobloch-Fedders (Co-I)

Table of Contents

1. Introduction

The reentry of service members back into family life after deployment can be extremely challenging for military couples. Understanding the factors that contribute to the reintegration difficulty of returning service members and at-home partners is essential for attracting, retaining, and safeguarding the nation's best military personnel. The ***goal of this project*** is to evaluate how people's mental health symptoms and romantic relationship characteristics predict their difficulty with reintegration. The ***research design*** was an 8-wave longitudinal study in which 555 military couples completed an online survey once per month for eight consecutive months beginning at homecoming. We will use the data to generate research-based guidelines for reintegration.

2. Keywords

reintegration difficulty; military couples; mental health; anxiety; depression; posttraumatic stress; relationship satisfaction; relational turbulence

3. Accomplishments

Major Goals of the Project

Year 1 Goals – Preparation for Data Collection

1. Seek IRB approval (completed 12 March 2014).
2. Solicit military family life contacts for advertising (began 15 April 2014, completed 27 July 2015).

Year 2 and Year 3 Goals – Recruitment and Data Collection

1. Identify returning military units (began 15 April 2014, completed 27 July 2015).
2. Advertise through online and newspaper channels (began 15 April 2014, completed 27 July 2015).
3. Enroll military couples (began 15 April 2014, completed 27 July 2015).
4. Manage data collection, retention, and e-card distribution (began 15 April 2014, completed 1 August 2015).

Year 4 Goals – Data Analysis and Dissemination

1. Clean data in preparation for analysis (completed 15 June 2016).
2. Analyze data (began 15 June 2016, ongoing).
3. Collaborate with consultant Dr. Jeremy Yorgason to interpret results (began 15 June 2016, ongoing).
4. Draft scholarly manuscripts for submission to peer-reviewed academic journals (began 15 June 2016, first manuscript accepted for publication 20 June 2017, additional manuscripts ongoing).
5. Disseminate results to military channels, media outlets, and scholarly conferences.
6. Identify empirically-based guidelines to inform education, prevention, and intervention efforts to promote the well-being of military couples.

Accomplishments Under the Goals

The goal of this project is to evaluate how people's mental health symptoms and romantic relationship characteristics predict their difficulty with reintegration. The research design was an 8-wave longitudinal study in which 555 military couples completed an online survey once per month for eight consecutive months beginning at homecoming.

Year 4 Major Task 2: Analyze data (began 15 June 2016, ongoing).

Year 4 Major Task 3: Collaborate with consultant Dr. Jeremy Yorgason to interpret results (began 15 June 2016, ongoing).

Year 4 Major Task 4: Draft scholarly manuscripts for submission to peer-reviewed academic journals (began 15 June 2016, first manuscript accepted for publication 20 June 2017, additional manuscripts ongoing).

Year 4 Major Task 5: Disseminate results to military channels, media outlets, and scholarly conferences.

Year 4 Major Task 6: Identify empirically-based guidelines to inform education, prevention, and intervention efforts to promote the well-being of military couples.

Advertising

We recruited participants through military family life channels on a rolling basis. We sought to attract the attention of the at-home partner as the entry point for enrolling couples.

Our recruitment strategies included (a) posting to online forums, listservs, message boards, support groups, and Facebook pages frequented by military families; (b) circulating press releases to military installation newspapers; (c) sending announcements to military family life professionals, state family program directors, family readiness officers, directors of psychological health, family assistance coordinators, fleet and family readiness officers, chaplains, and military personnel located in all 50 states; (d) distributing information through national organizations such as the National Military Family Association and the Military Child Education Coalition; (e) placing paid advertisements in installation, base, and camp newspapers; (f) doing interviews with media organizations and military installation newspapers; and (g) writing guest essays for popular military family life blogs. Of the seven strategies, we found the first four strategies to be the most effective.

Enrollment

Military couples were eligible if (a) partners had separate email accounts, (b) one or both partners had recently returned home from deployment, and (c) both partners completed the Wave 1 questionnaire within the first seven days after reunion. Most participants reserved a

spot in the study several months in advance of their projected reunion date, but others enrolled upon homecoming.

We implemented stringent procedures to guard against the risk of fraud. Those safeguards included:

Maintaining tight control over our advertising materials and circulating them only to military family life professionals, family readiness coordinators, chaplains, and military installation newspapers working with returning service members and their families.

Tracking our advertising procedures alongside the military couples who volunteered to ensure that boosts in interest were tied to specific outreach efforts.

Screening out any and all suspicious volunteers (e.g., asking them to report the military installation the service member was returning to). We took a very rigorous approach by declining spots in the study to any questionable volunteers.

Embedding a survey completion code at the end of each questionnaire and requiring individuals to email us their code after submitting their responses so we could verify their participation before sending their e-gift card.

Programming the survey software to track the amount of time individuals spent completing each questionnaire to screen out any fast-moving or slow-moving outliers.

Cleaning the data for all waves continuously to identify any dubious patterns. Our careful inspection of the data revealed notable problems for only five couples (less than 1% of the sample). We deleted those five couples from the dataset.

Data Collection Procedures

Our advertisements invited interested individuals to email a research account (military.couples.study@gmail.com) with (a) their name and email address, (b) their partner's name and email address, and (c) the anticipated date of the service member's homecoming within the limits of OPSEC. We emailed each partner individually with a description of the study and a request to respond if willing to participate.

After both partners replied to an email soliciting their consent, we emailed each person a link to the Wave 1 questionnaire along with a unique login and a temporary password. Participants logged into the Wave 1 questionnaire to select a permanent password for the duration of the study. We sent reminder emails on the fourth day and the sixth day after reunion, and on the seventh day, the Wave 1 logins expired. We eliminated 32 military couples because one or both partners failed to complete the Wave 1 questionnaire by the one-week deadline.

Data collection continued with the remaining 555 military couples for seven consecutive months. On the monthly anniversary of their reunion date, we emailed participants a link to the next questionnaire, which remained open for seven days, along with reminder emails on

the fourth day and the sixth day. Individuals received a $15 e-gift card from a national retailer for each wave of the study they completed, plus a bonus $50 e-gift card if they completed all waves.

Sample Characteristics

Our final sample included 555 couples (*N* = 1,110 individuals) who completed all procedures. Individuals responded to the Wave 1 questionnaire an average of 4.27 days after reunion (*SD* = 1.81 days). The rate of participation remained high across waves:

Response rate for Wave 1 = 100%

Response rate for Wave 2 = 91%

Response rate for Wave 3 = 92%

Response rate for Wave 4 = 88%

Response rate for Wave 5 = 89%

Response rate for Wave 6 = 88%

Response rate for Wave 7 = 86%

Response rate for Wave 8 = 88%

Our final sample contained 554 men and 556 women (*n* = 554 cross-sex couples, 1 same-sex couple). Individuals were Caucasian (81%), Latino/a (10%), African American (4%), Asian or Pacific Islander (3%), or American Indian or Alaskan Native (2%). Participants ranged from 19 to 59 years of age (*M* = 31.18 years, *SD* = 6.39 years) and hailed from 44 U.S. states, the District of Columbia, and Guam.

Participants described their education as some high school (1%), high school graduate (13%), some college (31%), associate's degree (15%), bachelor's degree (28%), and advanced graduate degree (12%). Most individuals reported an annual household income of between $21,000 to $40,000 (23%), $41,000 to $60,000 (32%), or $61,000 to $80,000 (18%).

Most military couples were married (95%), and of those who were married, most were involved in their first marriage (81%) versus a remarriage (19%). The majority of military couples lived in the same residence upon reunion (96%) and had children (71%). The length of their romantic relationship averaged 8.43 years (*SD* = 5.40 years).

Most returning service members were men (*n* = 547) and at-home partners were women (*n* = 548). The majority of at-home partners were civilians (88%), but others were current (5%) or former (7%) members of the military.

Returning service members were affiliated with the U.S. Army (40%), Navy, (21%), Marines (18%), Air Force (10%), Army National Guard (8%), Air National Guard (2%), and Coast Guard (1%). The length of their deployment averaged 7.71 months (*SD* = 2.31 months), and their primary mission during deployment was combat (60%), peacekeeping (17%), training (15%), relief (3%), or undisclosed (5%).

Approximately 30% of returning service members had deployed for the first time; others had completed one (24%), two (17%), three (13%), four (8%), or five or more (8%) previous deployments.

Measures of Covariates

We measured 18 secondary covariates and two core covariates for the sake of comprehensiveness. The secondary covariates included four individual characteristics (i.e., sex, race, age, and education), two methodological characteristics (number of days elapsed between reunion and participation in Wave 1, version of the measures of depressive and anxiety symptoms), seven relationship characteristics (i.e., household income, relationship length, marital status, prior marriage for the returning service member, prior marriage for the at-home partner, living together in the same residence upon reunion, and the presence of children), and five military characteristics (i.e., military branch, dual-military couple status, first deployment for the returning service member, length of deployment, and mission during deployment). The core covariates were combat exposure during deployment and relationship satisfaction. Confirmatory factor analytic results verified the unidimensional structure of the core covariates with model fit criteria set at CFI > .950 and RMSEA < .060 (per Hu & Bentler, 1999).

Combat exposure during deployment. Returning service members responded to Keane et al.'s (1989) Combat Exposure Scale (CES) at Wave 1, and following Renshaw, Rodrigues, and Jones (2008, p. 588), at-home partners responded to the same items at Wave 1 with instructions to provide their best understanding of their partner's experiences during deployment. Participants used a 5-point scale to indicate the frequency with which the service member (a) went on combat patrols, (b) fired rounds at the enemy, (c) saw people hit by rounds, (d) was under enemy fire, (e) was surrounded by the enemy, (f) was in danger of being injured or killed, and (g) had personnel in his or her unit who were wounded, killed, or missing in action. We computed a score for each individual as the average of the responses to the items (M = 0.51, SD = 0.64, *range* = 0.00 to 4.00, α = .75, CFI = .964, RMSEA = .058).

Relationship satisfaction. The Couples Satisfaction Index (CSI; Funk & Rogge, 2007) assessed people's Wave 1 relationship satisfaction. Three items asked individuals to rate aspects of their relationship: (a) how warm and comfortable is your relationship with your partner? (b) how rewarding is your relationship with your partner? and (c) in general, how satisfied are you with your relationship? (0 = *not at all*, 5 = *completely*). A fourth item solicited an overall rating: Please indicate the degree of happiness, all things considered, of your relationship (0 = *extremely unhappy*, 6 = *perfect*). We calculated the measure as the sum of responses (M = 17.20, SD = 3.32, *range* = 2.00 to 21.00, α = .83, CFI = .987, RMSEA = .051).

Measures of Mental Health Symptoms

Depressive symptoms. Military couples completed one of two measures of depressive symptoms at Wave 1. The first half of the sample (n = 268 couples, 48%) responded to the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996), but because of the

licensing fees required to administer the BDI at each wave, the second half of the sample (*n* = 287 couples, 52%) responded to the Center for Epidemiologic Studies Depression Scale Revised (CESD-R; Eaton, Muntaner, Smith, Tien, & Ybarra, 2004). For both measures, participants rated the severity of their experience of a series of symptoms (21 symptoms for the BDI-II, 20 symptoms for the CESD-R). Sample items for the CESD-R include: (a) I could not shake off the blues, (b) I had trouble keeping my mind on what I was doing, and (c) I felt depressed.

We put the scales on a common metric using conversion procedures advocated by Cohen, Cohen, Aiken, and West (1999) to calculate the percent of maximum possible score (POMP) for each item before summing scores across items. The POMP metric is superior to other conversion strategies for three reasons. First, it employs a simple linear transformation tied to the scale's original units. Second, it is not dependent on the sample or the population at large. Third, it outperforms other strategies for comparing different measures of the same construct (Cohen et al., 1999). Independent samples *t*-tests showed no difference between the POMP scores for the two versions of the measure for at-home partners, t (553) = -0.35, ns, but returning service members reported more depressive symptoms on the CESD-R than the BDI-II, t (553) = -2.09, p = .037. Consequently, we controlled for the version of the measure in our substantive analyses.

The average POMP score for Wave 1 depressive symptoms was 11.84 (*SD* = 12.93, *range* = 0 to 100), with 158 individuals (14%) reporting scores that met or exceeded clinical cutoffs for mild to moderate depression at Wave 1 (Beck et al., 1996; Radloff, 1977).

Anxiety symptoms. Participants responded to one of two scales measuring anxiety symptoms at Wave 1. The first 268 couples (48%) completed the 21 items of the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). To reduce licensing costs, the second 287 couples (52%) completed the 14 items of the anxiety subscale of the Depression, Anxiety, and Stress Scale (DASS; Lovibond & Lovibond, 1995). Both scales asked individuals to indicate how much they were bothered by a set of symptoms during the past week. Example items from the DASS include: (a) feeling terrified, (b) difficulty breathing, and (c) feeling close to panic.

We converted the two measures into a common metric using POMP scaling procedures (*M* = 6.80, *SD* = 10.27). Fifteen percent of the sample (*n* = 162 individuals) met or exceeded the clinical cutoff scores for mild to moderate anxiety at Wave 1 (Beck et al., 1988; Lovibond & Lovibond, 1995). Both returning service members, t (553) = 2.21, p = .28, and at-home partners, t (553) = 4.86, p < .001, reported higher POMP scores on the BAI than the DASS, so we covaried the version of the measure in our substantive analyses.

Posttraumatic stress symptoms. Individuals completed the 17-item Posttraumatic Stress Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993) at Wave 1. Returning service members completed the military version (PCL-M) by rating the degree to which they had experienced symptoms related to stressful military experiences during the past month. At-home partners completed the civilian version (PCL-C), which is identical except that individuals rate symptoms related to stressful experiences in general. Sample items from the

PCL-C include: (a) feeling very upset when something reminded you of a stressful experience; (b) repeated, disturbing memories, thoughts, or images of a stressful experience; and (c) avoiding activities or situations because they reminded you of a stressful experience (1 = *not at all*, 5 = *severely*). We summed the items to form the measure (M = 25.90, SD = 11.57). In total, 9% of the sample (n = 102 individuals) reported scores that met or exceeded recommended clinical cutoff values for mild to moderate posttraumatic stress (Ruggiero, Del Ben, Scotti, & Rabalais, 2003).

Measures of Relationship Characteristics

Relational uncertainty. Participants completed a 12-item measure of relational uncertainty by Knobloch and Knobloch-Fedders (2010; see also Knobloch & Solomon, 1999). The items were prefaced by the stem "How certain are you about …?" (1 = *completely uncertain*, 6 = *completely certain*) and were reverse scored so that higher values represented more relational uncertainty. Four items assessed *self uncertainty*: (a) how you feel about your relationship, (b) your view of your relationship, (c) how important your relationship is to you, and (d) your goals for the future of your relationship (M = 1.47, SD = 0.71, CFI = .987, RMSEA = .050). Four parallel items gauged *partner uncertainty*: (a) how your partner feels about your relationship, (b) your partner's view of your relationship, (c) how important your relationship is to your partner, and (d) your partner's goals for the future of your relationship (M = 1.60, SD = 0.95, CFI = .986, RMSEA = .056). Finally, four items measured relationship uncertainty: (a) the current status of your relationship, (b) how you can or cannot behave around your partner, (c) the definition of your relationship, and (d) the future of your relationship (M = 1.52, SD = 0.80, CFI = .986, RMSEA = .051).

Reunion uncertainty. Participants reported their reunion uncertainty via Knobloch, McAninch, Abendschein, Ebata, and McGlaughlin's (2016) measure, which was derived from open-ended data collected by Knobloch and Theiss (2012). Six unidimensional items were prefaced by the stem "How certain are you about …?" (1 = *completely uncertain*, 6 = *completely certain*): (a) how to readjust to being together, (b) how to redistribute household chores, (c) how to get to know each other again, (d) how to be sexually intimate after the time apart, (e) how to assess your partner's health and well-being, and (f) how to communicate with your partner (M = 2.09, SD = 1.04, CFI = .984, RMSEA = .051). All items were reverse scored so that higher values represented more reunion uncertainty.

Interference from a partner. To report hindrance from a partner in everyday activities, participants completed Knobloch's (2008) measure of interference from a partner. Eight items formed a unidimensional factor introduced by the stem "My partner …" (1 = *strongly disagree*, 6 = *strongly agree*): (a) interferes with the plans I make, (b) causes me to waste time, (c) interferes with my career goals, (d) disrupts my daily routine, (e) interferes with the things I need to do each day, (f) makes it harder for me to schedule my activities, (g) interferes with whether I achieve the everyday goals I set for myself (e.g., goals for exercise, diet, entertainment), and (h) interferes with the amount of leisure time I have (M = 1.93, SD = 1.04, CFI = .983, RMSEA = .052).

Reintegration interference from a partner. Individuals responded to Knobloch, McAninch, Abendschein, Ebata, and McGlaughlin's (2016) measure, which was based on free-response data reported by Knobloch and Theiss (2012). The scale began with the stem "My partner …" (1 = *strongly disagree*, 6 = *strongly agree*). Six of the seven items formed a unidimensional factor: (a) disrupts my everyday routine and schedule, (b) interferes with my ability to make my own decisions, (c) makes me feel smothered, (d) has become a different person since the deployment, (e) disrupts my social life with family and friends, and (f) makes me wish we had more time to spend together (M = 2.19, SD = 0.88, CFI = .980, RMSEA = .054).

Measures of Reintegration Difficulty

Difficulty with reintegration. Participants reported their reintegration difficulty at each wave via Chandra et al.'s (2011) measure. Six unidimensional items completed the stem "Since I/my partner returned home from deployment, I have …" (1 = *strongly disagree*, 7 = *strongly agree*): (a) had problems getting to know my partner again, (b) had difficulty adjusting to having my partner be part of my daily routine, (c) had trouble dealing with my partner's mood changes, (d) worried about the possibility of another deployment, (e) had problems figuring out who to turn to for advice, and (f) had trouble rebalancing household tasks (CFI = .977, RMSEA < .060).

Relationship challenges. At each wave, participants completed a measure grounded in open-ended comments by returning service members and at-home partners about the destructive changes in their relationship they experienced from deployment to reunion (Knobloch & Theiss, 2012). The items were introduced by the stem "Since I/my partner returned home from deployment, I have …" (1 = *strongly disagree*, 7 = *strongly agree*). Seven of the eight items formed a unidimensional factor: (a) had difficulty reconnecting with my partner, (b) had problems communicating with my partner, (c) been more independent, (d) worried about financial or employment issues, (e) had problems integrating my partner into my everyday routines, (f) noticed changes in our sexual relationship, and (g) experienced more conflict with my partner (CFI = .973, RMSEA < .060).

Preliminary Analyses

In a first preliminary analysis, we conducted paired samples t-tests comparing the Wave 1 reports of returning service members (n = 555) versus at-home partners (n = 555). Results for the core covariates showed that returning service members reported more combat exposure during deployment than at-home partners thought returning service members had experienced (see Table 1). Findings for the independent and dependent variables revealed that at-home partners indicated more depressive symptoms, anxiety symptom, posttraumatic stress symptoms, reunion uncertainty, reintegration difficulty, and relationship challenges than returning service members.

A second preliminary analysis involved examining the Wave 1 bivariate correlations among the core covariates, independent variables, and dependent variables for returning service members and at-home partners (see Table 2). Combat exposure was the only variable that showed a different pattern of association for returning service members versus at-home

partners. Combat exposure reported by returning service members was negatively associated with their relationship satisfaction and positively associated with their mental health symptoms and reunion uncertainty. Combat exposure perceived by at-home partners was positively correlated with their difficulty with reintegration and relationship challenges. For both returning service members and at-home partners, mental health symptoms, reunion uncertainty, reintegration interference from a partner, difficulty with reintegration, and relationship challenges were positively correlated and shared negative associations with relationship satisfaction.

Substantive Analyses (Stage 1)

We are performing the substantive analyses in several stages using a structural equation modeling approach to dual dyadic growth curve modeling (Kenny, Kashy, & Cook, 2006; Peugh, DiLillo, & Panuzio, 2013). In a descriptive first stage, we examined unconditional models without predictors to map the trajectories of change in people's reintegration difficulty and relationship challenges across the eight waves of data. Two unconditional models were estimated, one for difficulty with reintegration and one for relationship challenges, that included growth curves for returning service members and at-home partners. The unconditional models contained correlations (a) between the intercepts and slopes within couples, and (b) between the residuals within couples at each wave (per Kenny et al., 2006). We evaluated both linear and quadratic change and tested mean differences in the intercepts and slopes across partners.

The unconditional models showed a marginal fit to the data for both difficulty with reintegration, $\chi^2(114) = 343.578$, CFI = .961, RMSEA = .060 [90% CI = .053 to .068], and relationship challenges, $\chi^2(112) = 366.379$, CFI = .957, RMSEA = .064 [90% CI = .057 to .071]. Visual inspection of the observed means plot for reintegration difficulty (see Figure 1) suggested that both returning service members and at-home partners experienced an initial increase followed by a decline over time, but only the linear decrease was statistically significant in the estimated trajectory (see Table 3). With respect to relationship challenges, both visual inspection of the observed means plot and the estimated trajectory confirmed an initial upturn followed by a downturn over time (see Figure 1 and Table 3). These findings are valuable for illustrating the longitudinal course of people's reintegration difficulty and relationship challenges during the eight months after homecoming.

Supplemental Analyses

The Wave 1 questionnaire included measures of how service members and at-home partners communicated during deployment, so we analyzed those data to submit a manuscript to a special issue on communication during deployment sponsored by the *Journal of Family Psychology*. Our manuscript was accepted for publication on 20 June 2017 (see the appendix for the full draft of the article). The abstract of the paper is as follows:

> This study draws on the *emotional cycle of deployment model* (Pincus, House, Christenson, & Adler, 2001) to consider how the valence of communication between military personnel and at-home partners during deployment predicts their generalized anxiety upon reunion.

Online survey data were collected from 555 military couples (N = 1,110 individuals) once per month for eight consecutive months beginning at homecoming. Dyadic growth curve modeling results indicated that people's anxiety declined across the transition. For at-home partners, constructive communication during deployment predicted a steeper decline in anxiety over time. For both returning service members and at-home partners, destructive communication during deployment predicted more anxiety upon reunion but a steeper decline in anxiety over time. Results were robust beyond the frequency of communication during deployment and a host of individual, relational, and military variables. These findings advance the emotional cycle of deployment model, highlight the importance of the valence of communication during deployment, and illuminate how the effects of communication during deployment can endure after military couples are reunited.

Opportunities for Training and Professional Development

Undergraduate Research Assistant Training

Under the direction of Dr. Knobloch, four undergraduate students earned independent study credit during the fall 2016 semester by attending weekly team meetings, learning about the research process, and completing basic research tasks. The undergraduate research assistants helped to (a) track participation and attrition across couples and across waves; (b) administer the e-gift card distribution system; (c) clean the data in preparation for analyses; and (d) execute the social media outreach.

Under the direction of Dr. Knobloch-Fedders, two undergraduate research assistants volunteered five hours of effort per week to the project during the 2016-17 academic year. They attended weekly team meetings and completed basic research tasks, including (a) data organization, (b) basic data analysis, and (c) review of the literature.

Graduate Research Assistant Training

Under Dr. Knobloch's supervision, three Ph.D. students were employed during the fall 2016 semester to gain research experience and complete advanced research tasks. The graduate research assistants helped to (a) conduct literature searches for relevant publications; (b) clean the data in preparation for analyses; (c) provide feedback on the quarterly report materials, annual report materials, and annual in-progress review presentation; (d) supervise the social media outreach; and (e) assist in mentoring the undergraduate research assistants.

Under the direction of Dr. Knobloch-Fedders, one graduate research assistant volunteered two hours of effort per week to the project during the 2016-17 academic year. She attended weekly team meetings and completed basic research tasks, including (a) data organization, (b) basic data analysis, (c) interpretation of the preliminary results, and (d) review of the literature.

Dissemination of Results

On 17 March 2017, the PI delivered a colloquium lecture to the Department of Communication at the University of Buffalo presenting preliminary results from the project ("*Welcome home: Communication and relational turbulence among military couples after deployment*").

Plans for the Next Reporting Period

Year 4 Major Task 2: Analyze data (began 15 June 2016, ongoing).

The preliminary analyses and the first stage of the substantive analyses are completed. The second stage of the substantive analyses is underway. At present, we are planning for the third stage of the substantive analyses, which involves evaluating mediation and moderation.

Year 4 Major Task 3: Collaborate with consultant Dr. Jeremy Yorgason to interpret results (began 15 June 2016, ongoing).

Year 4 Major Task 4: Draft scholarly manuscripts for submission to peer-reviewed academic journals (began 15 June 2016, first manuscript accepted for publication 20 June 2017, additional manuscripts ongoing).

We are working on the capstone manuscript in preparation for submission. The literature review section and method section are drafted, and the results section is in progress. We will make sure to acknowledge the possibility of self-selection biases in our results (per feedback from the April 2017 in-progress review). We also will examine the possibility of differences due to branch affiliation (again per feedback from the April 2017 in-progress review).

Year 4 Major Task 5: Disseminate results to military channels, media outlets, and scholarly conferences.

We have two dissemination activities scheduled for Year 4 Quarter 1. The PI will be leading a webinar sponsored by the VA Caregiver Support Program (VACO) on 13 July 2017. The PI and the Co-I will brief the Military Family Support Research Team of the Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy during a conference call slated for 7 September 2017.

Year 4 Major Task 6: Identify empirically-based guidelines to inform education, prevention, and intervention efforts to promote the well-being of military couples.

4. Impact

Impact on Principal Disciplines

Nothing to report.

Impact on Other Disciplines

Nothing to report.

Impact on Technology Transfer

Nothing to report.

Impact on Society Beyond Science and Technology

Nothing to report.

5. Changes/Problems

Changes in Approach and Reasons for Change

Nothing to report.

Actual or Anticipated Problems or Delays and Actions or Plans to Resolve Them

Nothing to report.

Changes that Had a Significant Impact on Expenditures

Nothing to report.

Significant Changes in Use or Care of Human Subjects

Nothing to report.

6. Products

Publications, Conference Papers, and Presentations

Knobloch, L. K., Knobloch-Fedders, L. M., & Yorgason, J. B. (in press). Communication of military couples during deployment predicting generalized anxiety upon reunion. *Journal of Family Psychology*.

Knobloch, L. K., & Knobloch-Fedders, L. M. (2017, April). *Reintegration difficulty of military couples after deployment.* Report presented to the Family Research In-Progress Review Panel, Ft. Detrick, MD.

Knobloch, L. K. (2017, March). *Welcome home: Communication and relational turbulence among military couples after deployment*. Colloquium presentation, Department of Communication, University at Buffalo.

Websites

http://publish.illinois.edu/military-couples-study/ - Study website designed to attract, recruit, and retain participants. Central clearinghouse for press coverage of research and scholarly publications.

https://www.facebook.com/military.couples.study - Facebook page for the study.

https://twitter.com/search?q=study of military couples after deployment/ - Twitter account for the study.

https://www.linkedin.com/pub/leanne-knobloch/a4/323/ab9 - LinkedIn account for the study.

Technologies or Techniques

Nothing to report.

Inventions, Patent Applications, and/or Licenses

Nothing to report.

Other Products

Nothing to report.

***Addendum*: Publications, Conference Papers, and Presentations from Pilot Data Funded by the University of Illinois**

Journal Articles Reporting Pilot Data (Funded by the University of Illinois)

Basinger, E. D., & Knobloch, L. K. (in press). A grounded theory of online coping by parents of military service members. *Journal of Social and Personal Relationships*.

Knobloch, L. K., Knobloch-Fedders, L. M., Yorgason, J. B., Ebata, A. T., & McGlaughlin, P. C. (in press). Military children's difficulty with reintegration after deployment: A relational turbulence model perspective. *Journal of Family Psychology*.

Knobloch, L. K., & Theiss, J. A. (2017). Topic avoidance about deployment upon reunion: Applying the relational turbulence model. *Military Behavioral Health, 5*, 117-128.

Book Chapters Reporting Pilot Data (Funded by the University of Illinois)

Knobloch, L. K., Solomon, D. H., Theiss, J. A., & McLaren, R. M. (in press). Relational turbulence theory: Understanding family communication during times of change. In D. O. Braithwaite, E. A. Suter, & K. Floyd (Eds.), *Engaging theories in family communication* (2nd ed.). New York, NY: Routledge.

Invited Presentations Reporting Pilot Data (Funded by the University of Illinois)

Knobloch, L. K. (2017, June). *Helping children and teens navigate change.* Subject matter expert for webinar co-sponsored by the Military Child Education Coalition and the U.S. Navy Child and Youth Programs.

Knobloch, L. K. (2017, June). *Helping young children navigate change.* Subject matter expert for webinar co-sponsored by the Military Child Education Coalition and the U.S. Navy Child and Youth Programs.

Knobloch, L. K. (2017, April). *The caregiver in the room: Considerations for providers working with families.* Webinar presentation sponsored by the eXtension Military Families Learning Network.

Knobloch, L. K. (2016, October). *Sensitive topics in caregiving: Communication for interpersonal relationships.* Webinar presentation sponsored by the eXtension Military Families Learning Network.

Knobloch, L. K. (2016, July). *Welcome home: Research and tips on reintegration after deployment*. Distinguished lecture, Military Child Education Coalition National Training Seminar, Washington, DC.

Knobloch, L. K., McAninch, K. G., Abendschein, B., Ebata, A. T., & McGlaughlin, P. C. (2016, July). *Relational turbulence among military couples after reunion following deployment*. Paper presented at the biennial meeting of the International Association for Relationship Research, Toronto, Ontario, Canada.

***Addendum*: Honors and Awards**

In October 2016, Dr. Knobloch received the Distinguished Achievement in Social Sciences Alumni Award from St. Norbert College in De Pere, Wisconsin. The award is given to recipients who "set a standard of excellence in their chosen field, demonstrate significant professional accomplishment, and exemplify the educational mission of St. Norbert College." Her nomination emphasized her innovative research on military families across the deployment cycle.

An article co-authored by Dr. Knobloch and Dr. Knobloch-Fedders reporting pilot data funded by the University of Illinois received the Top Paper Award from the Family Communication Division of the National Communication Association:

Knobloch, L. K., Knobloch-Fedders, L. M., Yorgason, J. B., Ebata, A. T., & McGlaughlin, P. C. (2016, November). *Military children's difficulty with reintegration after deployment: A relational turbulence model perspective*. Paper presented at the annual meeting of the National Communication Association, Philadelphia, PA.

An article co-authored by Dr. Knobloch advancing the theoretical framework for the project received the Top Paper Award from the Interpersonal Communication Division of the National Communication Association:

Solomon, D. H., Knobloch, L. K., Theiss, J. A., & McLaren, R. M. (2016, November). *Relational turbulence theory: Explaining variation in subjective experiences and communication within romantic relationships*. Paper presented at the annual meeting of the National Communication Association, Philadelphia, PA.

7. Participants and Other Collaborating Organizations

Individuals who Have Worked on the Project

Name	Role	Person Month	Contribution
Leanne Knobloch, Ph.D.	PI	2.8	PI
Lynne Knobloch-Fedders, Ph.D.	Co-I	2.4	Co-I
Jeremy Yorgason, Ph.D.	Statistical Consultant	0.10	Data Analysis
Bryan Abendschein, M. A.	Graduate RA at Illinois	0.61	Data Management & Outreach
James Kale Monk, M.A.	Graduate RA at Illinois	0.61	Data Management & Outreach
Erin Wehrman, M.A.	Graduate RA at Illinois	0.61	Data Management & Outreach
David Michael Kempe	Undergraduate RA at Illinois (*unpaid*)	0.56	Data Management & Outreach
Konrad Lazarski	Undergraduate RA at Illinois (*unpaid*)	0.56	Data Cleaning & Coding
Jordan Niezelski	Undergraduate RA at Illinois (*unpaid*)	0.56	Data Cleaning & Coding
Namah Vyakarnam	Undergraduate RA at Illinois (*unpaid*)	0.56	Data Cleaning & Coding
Vanida Vesundia	Graduate RA at Family Institute (*unpaid*)	0.45	Data Cleaning & Coding
Hannah Fiore	Undergraduate RA at Family Institute (*unpaid*)	1.13	Data Cleaning & Coding
Samantha Scott	Undergraduate RA at Family Institute (*unpaid*)	1.13	Data Cleaning & Coding

Change in Active Other Support of Key Personnel

Dr. Lynne Knobloch-Fedders, co-investigator on the project, has accepted a position as an assistant professor in the Department of Counselor Education and Counseling Psychology at Marquette University effective 14 August 2017. She will be leaving her current position as a clinical psychologist at The Family Institute at Northwestern University effective 4 August 2017. Ms. Stacey Porter-Daly, our federal award coordinator at the University of Illinois, notified Ms. Catherine Sanchez, the contract specialist assigned to our award, of the change in a memo dated 23 May 2017. The change was approved by Ms. Sherry Apperson on 10 July 2017.

Partner Organizations

University of Illinois – Urbana, IL

Contributions: (1) financial support (including conference travel), (2) in-kind support (including office supplies, computers, software, printers, Internet access, telephone, and fax), (3) facilities (including office space and meeting rooms), and (4) personnel (including administrative support staff, human resource management, and undergraduate and graduate research assistants).

The Family Institute at Northwestern University – Evanston, IL

Contributions: (1) in-kind support (including office supplies, computers, software, printers, Internet access, telephone, and fax), (2) facilities (including office space and meeting rooms), and (3) personnel (including administrative support staff, human resource management, and undergraduate and graduate research assistants).

8. Special Reporting Requirements: Quad Chart

"Reintegration Difficulty of Military Couples Following Deployment"

USAMRMC Log No. 12154004

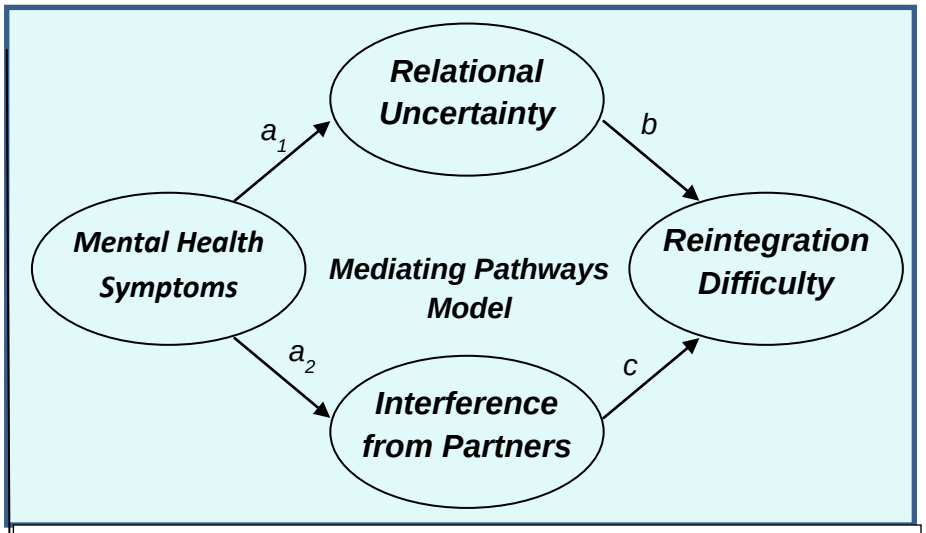
PI: Leanne K. Knobloch **Org:** University of Illinois **Award Amount:** $834,061

Study Aims

- Test the mechanisms of relational turbulence as ***independent predictors*** of the reintegration difficulty of returning service members and at-home partners.
- Test relational uncertainty and interference from partners as ***mediating pathways*** linking mental health symptoms to the reintegration difficulty of returning service members and at-home partners.
- Test relational uncertainty and interference from partners as ***moderating debilitative factors*** of the associations that mental health symptoms share with the reintegration difficulty of returning service members and at-home partners.

Approach

This project evaluates how people's mental health symptoms and romantic relationship characteristics predict their difficulty with reintegration. Online survey data were collected from 555 military couples once per month for 8 consecutive months upon reunion.



The goal of this project is to examine how mental health symptoms, relational uncertainty, and interference from partners predict reintegration difficulty following deployment. The mediating pathways model is one of three models to be tested.

Timeline and Cost

Activities / Year	1	2	3	4
Preparation for Data Collection				
Recruitment & Data Collection				
Data Analysis & Dissemination				
Estimated Budget ($K)	**210,405**	**253,895**	**224,354**	**145,407**

Updated: 07/12/2017

Study Milestones

Year 1 Goals – Preparation for Data Collection
- ☑ Seek IRB approval
- ☑ Solicit military family life contacts for advertising

Year 2 and Year 3 Goals – Recruitment and Data Collection
- ☑ Identify returning military units
- ☑ Advertise through online and newspaper channels
- ☑ Enroll military couples
- ☑ Manage data collection, retention, & e-card distribution

Year 4 Goals – Data Analysis and Dissemination
- ☐ Analyze data
- ☐ Disseminate results
- ☐ Identify empirically-based guidelines for clinical application

Comments/Challenges/Issues/Concerns *(none)*

Budget Expenditure to Date

Projected Expenditure: $625,550

Estimated Actual Expenditure: $732,298

Table 1

Paired Samples T-Tests Comparing Returning Service Members and At-Home Partners at Wave 1

	Returning Service Members		At-Home Partners		
	M	(*SD*)	*M*	(*SD*)	*t* (554)
Combat Exposure	0.54	(0.64)	0.48	(0.64)	2.97 **
Relationship Satisfaction	17.27	(3.08)	17.12	(3.54)	0.94
Depressive Symptoms	10.16	(11.36)	13.52	(14.13)	-4.90 ***
Anxiety Symptoms	5.00	(8.35)	8.59	(11.61)	-6.59 ***
Posttraumatic Stress Symptoms	24.21	(10.15)	27.59	(12.63)	-5.45 ***
Reunion Uncertainty	2.02	(0.98)	2.16	(1.09)	-2.85 **
Reintegration Interference	2.18	(0.90)	2.20	(0.87)	-0.36
Difficulty with Reintegration	2.46	(1.31)	2.63	(1.31)	-2.80 **
Relationship Challenges	2.62	(1.30)	2.81	(1.30)	-3.20 **

N = 555 military couples.

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

Table 2

Bivariate Correlations at Wave 1

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1: Combat Exposure	.75 ***	-.10 *	.12 **	.14 **	.25 ***	.11 *	.06	.08	.08
V2: Relationship Satisfaction	-.04	.37 ***	-.22 ***	-.23 ***	-.19 ***	-.61 ***	-.42 ***	-.45 ***	-.51 ***
V3: Depressive Symptoms	.07	-.33 ***	.20 ***	.65 ***	.68 ***	.37 ***	.28 ***	.36 ***	.38 ***
V4: Anxiety Symptoms	.06	-.18 ***	.64 ***	.20 ***	.70 ***	.29 ***	.21 ***	.32 ***	.34 ***
V5: Posttraumatic Stress Symptoms	.05	-.30 ***	.73 ***	.73 ***	.19 ***	.28 ***	.20 ***	.33 ***	.34 ***
V6: Reunion Uncertainty	.05	-.60 ***	.44 ***	.23 ***	.37 ***	.33 ***	.49 ***	.63 ***	.69 ***
V7: Reintegration Interference	.05	-.50 ***	.42 ***	.30 ***	.44 ***	.55 ***	.20 ***	.63 ***	.65 ***
V8: Difficulty with Reintegration	.09 *	-.50 ***	.52 ***	.35 ***	.47 ***	.70 ***	.64 ***	.37 ***	.82 ***
V9: Relationship Challenges	.09 *	-.56 ***	.49 ***	.32 ***	.45 ***	.72 ***	.63 ***	.80 ***	.43 ***

Note. N = 555 returning service members, at-home partners, or military couples. Wave 1 bivariate correlations for returning service members appear above the diagonal, Wave 1 bivariate correlations for at-home partners appear below the diagonal, and Wave 1 within-couple correlations appear on the diagonal and are underlined.

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

Table 3

Growth Parameters for the Unconditional Models Predicting Difficulty with Reintegration and Relationship Challenges

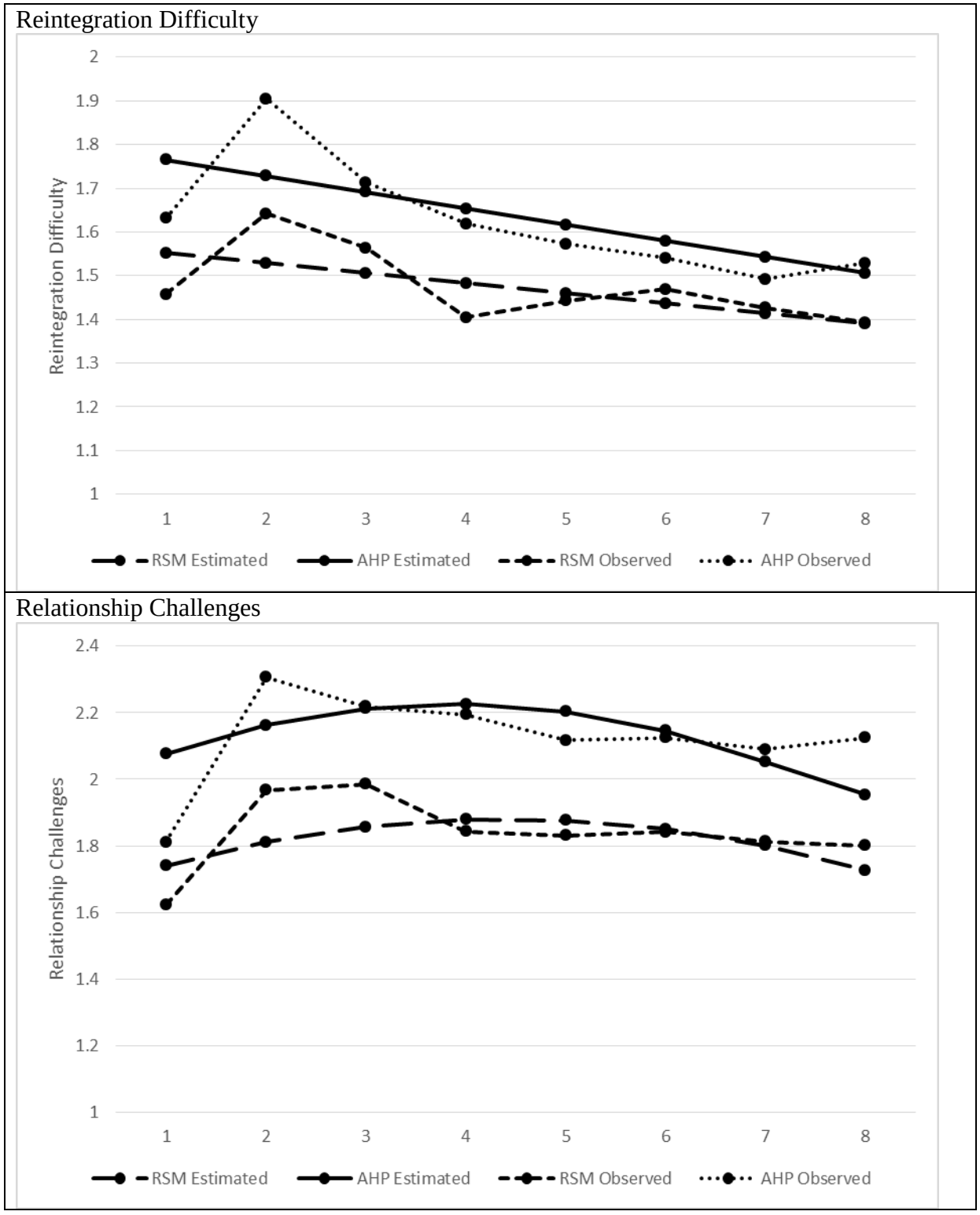
	Difficulty with Reintegration				Relationship Challenges			
	Returning Service Members		At-Home Partners		Returning Service Members		At-Home Partners	
	Estimate	Variance	Estimate	Variance	Estimate	Variance	Estimate	Variance
Intercept	1.55 ***	1.15 ***	1.77 ***	1.37 ***	1.75 ***	1.24 ***	1.99 ***	1.31 ***
Linear Slope	-0.02 **	0.02 ***	-0.04 ***	0.02 ***	0.08 **	0.02 ***	0.13 ***	0.02 ***
Quadratic Slope	---	---	---	---	-0.01 ***	---	-0.02 ***	---
r of Intercept and Slope	-0.27 ***	---	-0.26 ***	---	-0.27***	---	-0.14 *	---
Within-Couple Correlations		Estimate				Estimate		
Intercepts		0.49 ***				0.54 ***		
Slopes		0.49 ***				0.48 ***		

Note. N = 555 military couples. Model fit for reintegration difficulty: $\chi^2(112) = 366.379$, CFI = .961, RMSEA = .064 [90% CI = .057 to .071]. Model fit for relationship challenges: χ^2 (114) = 343.578, CFI = .960, RMSEA = .060 (90% CI = .053 to = .068).

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

Figure 1

Estimated and Observed Means across Eight Months of the Post-Deployment Transition



9. Appendices

1. Knobloch, L. K., Knobloch-Fedders, L. M., & Yorgason, J. B. (in press). Communication of military couples during deployment predicting generalized anxiety upon reunion. *Journal of Family Psychology.*

2. Knobloch, L. K., Knobloch-Fedders, L. M., Yorgason, J. B., Ebata, A. T., & McGlaughlin, P. C. (in press). Military children's difficulty with reintegration after deployment: A relational turbulence model perspective. *Journal of Family Psychology*.

3. Knobloch, L. K., & Theiss, J. A. (2017). Topic avoidance about deployment upon reunion: Applying the relational turbulence model. *Military Behavioral Health, 5,* 117-128.

4. Solomon, D. H., Knobloch, L. K., Theiss, J. A., & McLaren, R. M. (2016). Relational turbulence theory: Explaining variation in subjective experiences and communication within romantic relationships. *Human Communication Research, 42,* 507-532.

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Journal of Family Psychology

0893-3200/17/$12.00 http://dx.doi.org/10.1037/fam0000344

Communication of Military Couples During Deployment Predicting Generalized Anxiety Upon Reunion

AQ: au
AQ: 1

Leanne K. Knobloch
University of Illinois

Lynne M. Knobloch-Fedders
Marquette University

Jeremy B. Yorgason
Brigham Young University

This study draws on the emotional cycle of deployment model (Pincus, House, Christenson, & Adler, 2001) to consider how the valence of communication between military personnel and at-home partners during deployment predicts their generalized anxiety upon reunion. Online survey data were collected from 555 military couples (N = 1,110 individuals) once per month for 8 consecutive months beginning at homecoming. Dyadic growth curve modeling results indicated that people's anxiety declined across the transition. For at-home partners, constructive communication during deployment predicted a steeper decline in anxiety over time. For both returning service members and at-home partners, destructive communication during deployment predicted more anxiety upon reunion but a steeper decline in anxiety over time. Results were robust beyond the frequency of communication during deployment and a host of individual, relational, and military variables. These findings advance the emotional cycle of deployment model, highlight the importance of the valence of communication during deployment, and illuminate how the effects of communication during deployment can endure after military couples are reunited.

Keywords: anxiety, communication, deployment, military couples, reunion after deployment

AQ: 2

Supplemental materials: http://dx.doi.org/10.1037/fam0000344.supp

Deployment in the service of combat, peacekeeping, relief, and training missions around the globe can spark substantial anxiety for military families. Service members and their romantic partners may worry about each other's safety, their ability to handle responsibilities at home or overseas, the risk of infidelity, the threat of physical and mental illness, and the welfare of children (e.g., Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Knobloch, Theiss, & Wehrman, 2015). Communication is a key way for military personnel and at-home partners to manage their anxiety during the separation (e.g., Maguire, Heinemann-LaFave, & Sahlstein, 2013; Merolla, 2010). Communication between partners can mollify apprehension, facilitate support, and assuage worry during deployment (e.g., Carter et al., 2015; Rossetto, 2013; Wheeler & Torres Stone, 2010). Indeed, military couples identify communicating effectively as an important mechanism for handling the stress of deployment (Knobloch, Basinger, Wehrman, Ebata, & McGlaughlin, 2016).

Despite a growing literature documenting the pivotal role of communication during deployment (Carter & Renshaw, 2016a), questions remain about whether its associations with anxiety endure after military couples are reunited. Does communication during deployment have implications for people's generalized anxiety upon reunion? Symptoms of generalized anxiety include extreme fears or chronic worry about everyday events; behavioral avoidance; and physical difficulties such as hyperarousal, muscle tension, sleep disturbances, and concentration problems (American Psychiatric Association, 2013). Both returning service members (Kim, Thomas, Wilk, Castro, & Hoge, 2010; McNulty, 2005) and at-home partners (Fields, Nichols, Martindale-Adams, Zuber, & Graney, 2012) experience symptoms of generalized anxiety during the postdeployment transition. In turn, symptoms of anxiety correspond with impaired work productivity for military personnel (Adler et al., 2011), poorer physical health for at-home partners (Fields et al., 2012), and more reintegration stress for both individuals (Marek & D'Aniello, 2014).

We use the emotional cycle of deployment model (Pincus et al., 2001) to examine the valence of communication during deploy-

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This research was supported by the Congressionally Directed Medical Research Programs through the Military Operational Medicine Research Program (Award W81XWH-14-2–0131). The U.S. Army Medical Research Acquisition Activity, 820 Chandler Street, Fort Detrick MD 21702-5014, was the awarding and administering acquisition office. Opinions, interpretations, conclusions, and recommendations are those of the authors and are not necessarily endorsed by the U.S. Department of Defense. The authors are grateful to Bryan Abendschein, Erin Basinger, Daniel Byrne, Hallie Davis, Dale Erdmier, Kelly McAninch, J. Kale Monk, Matthew Muscatella, Matthew Pasquini, Laura Saldivar, Claudia Szczepaniak, Erin Wehrman, and Sylvie Xiaowei Zhuang.

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ment as a predictor of generalized anxiety upon reunion. We begin by reviewing the model and the literature on communication during deployment. Next, we report data from 555 military couples who participated in an 8-wave longitudinal study beginning at homecoming. We conclude by examining the implications of our results for understanding how people's communication during deployment corresponds with their generalized anxiety during reintegration.

Communication and Generalized Anxiety

The emotional cycle of deployment model provides a descriptive framework for understanding the experiences of deployed service members and at-home partners (Pincus et al., 2001). The model divides the deployment trajectory into 5 stages: predeployment, deployment, sustainment, redeployment, and postdeployment (also termed *reunion* or *reintegration*), and it defines unique challenges for each stage. A key premise of the model is that military couples who are unable to master the demands of each stage will experience anxiety and distress. A second core tenet is that people's communication behavior in each stage lays a foundation for their emotional well-being in subsequent stages.

The emotional cycle of deployment model suggests that people's communication during deployment has implications for the anxiety they experience upon reunion (Pincus et al., 2001). For example, the model contends that communication during deployment can be a double-edged sword with respect to anxiety (see also Greene, Buckman, Dandeker, & Greenberg, 2010). Communication can help calm fears, boost security about the future, and enhance confidence in the relationship, but it also can exacerbate distress, provoke conflict, and intensify feelings of distance between partners (see also Carter et al., 2015; Maguire et al., 2013; Rossetto, 2013). Moreover, the model emphasizes that problems with inaccessible or unreliable communication technology can heighten people's anxiety about each other's safety, priorities, and commitment to the relationship (see also Hinojosa, Hinojosa, & Högnäs, 2012; Maguire et al., 2013). Finally, the model explains how a lack of communication during deployment can pave the way for anxiety fostered by rumors, secrets, and gossip.

The emotional cycle of deployment model implies a connection between people's communication during deployment and their anxiety after homecoming. Notably, however, the model stops short of specifying the features of communication that may generate more or less anxiety upon reunion. Consequently, we turn to the literature on communication during deployment to theorize about the characteristics of communication that may contribute to the anxiety of returning service members and at-home partners during reintegration.

Communication During Deployment

Scholarship on communication during deployment has privileged the frequency of the exchanges between military couples as its central predictor and relationship well-being as its focal outcome. Conflicting results exist (Greene et al., 2010). On one hand, Joseph and Afifi (2010) found that military wives who reported more frequent communication with their deployed husband were less satisfied with their relationship. On the other hand, Cigrang et al. (2014) observed that Air Force personnel who communicated more frequently with their romantic partner during deployment showed a reduction in relationship distress from predeployment to deployment. Likewise, Ponder and Aguirre (2012) reported that service members who communicated with their spouse every day during deployment were more satisfied with their relationship upon reunion than those who communicated with their spouse less than once per week. Mixed outcomes also are apparent in the same study: Houston, Pfefferbaum, Sherman, Melson, and Brand (2013) found that military wives who communicated more frequently with their deployed husband were more lonely but less likely to lose their temper with their spouse. These divergent findings hint that the role of communication during deployment is broader than the frequency of interaction.

Other studies have considered the frequency of channel use. The channels of communication available to military couples depend in part on the security requirements of the deployment (Hinojosa et al., 2012; MacDermid et al., 2005), but service members and at-home partners typically use some combination of channels that vary by the richness of the cues (i.e., email vs. Skype) and the synchrony of the exchanges (i.e., letters vs. telephone; Carter & Renshaw, 2016b). Although some work suggests that synchronous communication channels such as the telephone may be desirable for complex interaction tasks (Schumm, Bell, Ender, & Rice, 2004), other research shows that asynchronous communication channels, including email, letters, cards, and care packages, correspond with more relationship satisfaction (Ponder & Aguirre, 2012). This work implies that a nuanced understanding of communication during deployment involves considering other dimensions in addition to the frequency of channel use.

Conspicuously missing from prior work is systematic attention to the valence of communication during deployment as a predictor of generalized anxiety as an outcome. Notably, however, research with civilian couples suggests a link between communication valence and anxiety (Newman & Erickson, 2010; Whisman & Beach, 2010). Both deficits in constructive communication (e.g., less problem-solving, less supportiveness) and the presence of destructive communication (e.g., criticism, hostility) correspond with anxiety among civilian couples (Chambless et al., 2002; Zinbarg, Lee, & Yoon, 2007). We are not aware of any work investigating the valence of communication between military couples during deployment as a predictor of mental health outcomes. Consequently, we echo Maguire's (2015) call for more sophisticated conceptualizations of communication during deployment. One benefit is to advance theory: The emotional cycle of deployment model could be augmented by delineating how the tenor of communication between military couples during deployment corresponds with generalized anxiety during reintegration. A second benefit is to advance research: The disparate findings for the frequency of communication during deployment imply that predictive precision could be enhanced by examining valence (e.g., Carter et al., 2015; Greene et al., 2010).

Hypotheses

Our goal is to investigate how the valence of people's communication during deployment predicts their generalized anxiety upon reunion. On the basis of the theorizing of the emotional cycle of deployment model (Pincus et al., 2001), we hypothesize that

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people's generalized anxiety is highest at homecoming and declines as the transition unfolds:

> *Hypothesis 1 (H1):* The generalized anxiety reported by military couples decreases over time across the postdeployment transition.

Two other hypotheses integrate the model's logic with research connecting the valence of communication to anxiety among civilian couples (Newman & Erickson, 2010; Whisman & Beach, 2010). Namely, we theorize that the constructiveness and destructiveness of communication during deployment predicts people's generalized anxiety upon reunion beyond the frequency of their exchanges during deployment:

> *Hypothesis 2 (H2):* Controlling for the frequency of communication during deployment, the constructiveness of communication during deployment reported by military couples corresponds with less generalized anxiety (H2a) and a stronger decline in generalized anxiety across time (H2b) upon reunion.

> *Hypothesis 3 (H3):* Controlling for the frequency of communication during deployment, the destructiveness of communication during deployment reported by military couples corresponds with more generalized anxiety (H3a) and a weaker decline in generalized anxiety across time (H3b) upon reunion.

Method

We conducted a longitudinal study in which U.S. service members and at-home partners completed an online questionnaire once per month beginning at homecoming. Data collection spanned 8 months to cover the 6-month window that the emotional cycle of deployment model defines as the postdeployment transition (Pincus et al., 2001). Observations were spaced 1 month apart to be sensitive to changes in people's generalized anxiety over time. Responses were collected from dyads to illuminate the extent to which people's reports of communication during deployment predicted both their own generalized anxiety (actor effects) and their partner's generalized anxiety (partner effects; Kenny, Kashy, & Cook, 2006).

After receiving institutional review board approval, we recruited participants by (a) posting to online forums frequented by military families, (b) circulating information to military installation newspapers, and (c) enlisting the help of military family life professionals located in all 50 states. Military couples were eligible if (a) partners had separate email accounts, (b) one or both partners had recently returned home from deployment, and (c) both partners completed the Wave 1 questionnaire within the first 7 days after reunion. Most couples reserved a spot in the study in advance of their projected reunion date, but others enrolled upon homecoming.

Procedures

After both partners replied to an email soliciting their consent, we emailed each person a link to the Wave 1 questionnaire along with a unique login and a temporary password. Participants logged into the Wave 1 questionnaire to select a permanent password for the duration of the study. We sent reminder emails on the 4th day and the 6th day after reunion, and on the 7th day the Wave 1 logins expired. We eliminated 32 military couples because one or both partners failed to complete the Wave 1 questionnaire by the 1-week deadline.

Data collection continued with the remaining 555 military couples for 7 consecutive months. On the monthly anniversary of their reunion date, we emailed participants a link to the next questionnaire, which remained open for 7 days. We also sent reminder emails on the 4th day and the 6th day. Individuals received a $15 e-gift card from a national retailer for each wave of the study they completed plus a bonus $50 e-gift card if they completed all waves.

Participants

The sample of 555 military couples (n = 1,110 individuals) contained 554 men and 556 women (n = 554 cross-sex couples, 1 same-sex couple). Individuals were Caucasian (81%), Latino/a (10%), African American (4%), Asian or Pacific Islander (3%), or American Indian or Alaskan Native (2%).[1] Participants ranged from 19 to 59 years of age (M = 31.18 years, SD = 6.39 years) and hailed from 44 U.S. states, the District of Columbia, and Guam. They described their education as some high school (1%), high school graduate (13%), some college (31%), associate's degree (15%), bachelor's degree (28%), or advanced graduate degree (12%). Most individuals reported an annual household income of between $21,000 and $40,000 (23%), $41,000 and $60,000 (32%), or $61,000 and $80,000 (18%). Fn1

Most military couples were married (95%), and of those who were married, most were involved in their first marriage (81%) versus a remarriage (19%). The majority of military couples lived in the same residence upon reunion (96%) and had children (71%). The length of their romantic relationship averaged 8.43 years (SD = 5.40 years).

Most returning service members were men (n = 547) and at-home partners were women (n = 548). The majority of at-home partners were civilians (88%), but others were current (5%) or former (7%) members of the military. Returning service members were affiliated with the U.S. Army (40%), Navy (21%), Marines (18%), Air Force (10%), Army National Guard (8%), Air National Guard (2%), or Coast Guard (1%). The length of their deployment averaged 7.71 months (SD = 2.31 months), and their primary mission during deployment was combat (60%), peacekeeping (17%), training (15%), relief (3%), or undisclosed (5%). Approximately 30% of returning service members had deployed for the first time; others had completed one (24%), two (17%), three (13%), four (8%), or five or more (8%) previous deployments.

Individuals completed the Wave 1 questionnaire an average of 4.27 days after reunion (SD = 1.81 days). Their rate of participation remained relatively high across the duration of the study: (a)

[1] Our sample was slightly less diverse than the U.S. military population as a whole. According to the U.S. Department of Defense, Office of the Deputy Assistant Secretary of Defense for Military Community and Family Policy (2015), approximately 71% of the total military force identify as White, 17% as Black or African American, 4% as Asian, 1% as American Indian or Alaska Native, and 1% as Native Hawaiian or Pacific Islander. Approximately 12% of the total military force identify as Hispanic or Latino/a.

tapraid5/ze7-fam/ze7-fam/ze799917/ze73155d17z | xppws | S=7 | 7/4/17 | 8:17 | Art: 2016-0734

91% at Wave 2, (b) 92% at Wave 3, (c) 88% at Wave 4, (d) 89% at Wave 5, (e) 88% at Wave 6, (f) 86% at Wave 7, and (g) 88% at Wave 8.

Measures

Secondary covariates. We assessed several secondary control variables at Wave 1 to facilitate a rigorous test of our predictions. Individual attributes included each person's sex, race, age, education, and the number of days elapsed between reunion and participation in Wave 1. Relationship attributes included household income, relationship length, marital status, prior marriage for the at-home partner, prior marriage for the returning service member, living together in the same residence upon reunion, and the presence of children. Military attributes included military branch, dual-military couple status, first deployment for the returning service member, length of deployment, and mission during deployment.

Core covariates. We used multi-item scales to measure three core covariates at Wave 1: relationship satisfaction, combat exposure during deployment, and the frequency of communication during deployment. We conducted confirmatory factor analyses to verify the factor structure of these scales, and we set the model fit criteria to comparative fit index (CFI) >.950 and root mean square error of approximation (RMSEA) <.060 (Hu & Bentler, 1999).

Relationship satisfaction. Participants completed the Couples Satisfaction Index (CSI; Funk & Rogge, 2007).[2] Four items comprised the measure: (a) Please indicate the degree of happiness, all things considered, of your relationship (0 = *extremely unhappy*, 6 = *perfect*), (b) how warm and comfortable is your relationship with your partner? (c) how rewarding is your relationship with your partner? and (d) in general, how satisfied are you with your relationship? (0 = *not at all*, 5 = *completely*). We summed the responses to compute the variable (M = 17.20, SD = 3.32, range = 2.00–21.00, α = .83, CFI = 0.987, RMSEA = .051).

Combat exposure during deployment. Keane et al.'s (1989) Combat Exposure Scale (CES) contains 7 items rated on a 5-point scale. The items ask about the frequency with which the service member (a) went on combat patrols; (b) fired rounds at the enemy; (c) saw people hit by rounds; (d) was under enemy fire; (e) was surrounded by the enemy; (f) was in danger of being injured or killed; and (g) had personnel in his or her unit who were wounded, killed, or missing in action. Returning service members responded to the original scale; at-home partners responded to the same items prefaced with instructions developed by Renshaw, Rodrigues, and Jones (2008) to provide the rating that "best describes your understanding of your partner's experiences" during deployment (p. 588). We calculated the scale as the average of the items (M = 0.51, SD = 0.64, range = 0.00–4.00, α = .75, CFI = .964, RMSEA = .058).

Frequency of communication during deployment. We constructed a measure based on the channels commonly reported by military couples in prior work (see Carter & Renshaw, 2016a). The scale was introduced by the question "How frequently did you use the following channels to communicate with your romantic partner during deployment?" (0 = *did not use*, 1 = *once per month*, 2 = *every other week*, 3 = *once per week*, 4 = *several times per week*, 5 = *once per day*, 6 = *more than once per day*). The items referenced six channels: (a) telephone (M = 2.26, SD = 1.99), (b) video chat/Skype (M = 2.80, SD = 1.96), (c) email (M = 3.15, SD = 2.12), (d) Facebook (M = 3.08, SD = 2.38), (e) instant messaging (M = 2.97, SD = 2.68), and (f) cards and letters (M = 0.84, SD = 0.97). We computed the measure as the average of people's scores across channels (M = 2.56, SD = 1.00, range = 0.00–6.00, CFI = .977, RMSEA = .045).

Substantive variables. Participants reported the valence of their communication during deployment at Wave 1, and they reported their symptoms of generalized anxiety at each wave.

Valence of communication during deployment. We wrote items specifically for this study that were prefaced by the following stem: "Communicating with your partner during deployment was . . ." (1 = *strongly disagree*, 5 = *strongly agree*). Five items assessed *constructive communication*: (a) helpful, (b) satisfying, (c) effective, (d) useful, and (e) valuable (M = 4.39, SD = 0.73, range = 1.00–5.00, α = .88). Three items indexed *destructive communication*: (a) frustrating, (b) upsetting, and (c) disappointing (M = 2.11, SD = 0.95, range = 1.00–5.00, α = .78). CFA results verified the unidimensionality of the 5-item measure of constructive communication (CFI = .979, RMSEA = .057) and the 3-item measure of destructive communication (CFI = .986, RMSEA = .052), but an 8-item scale with the destructive communication items reverse scored did not form a unidimensional factor (CFI = .920, RMSEA = .092). On the basis of these results, we treated the two scales as separate constructs that shared 32% of their variance in common, $r = -.57$, $p < .001$.

Generalized anxiety. The first 268 couples (48%) completed the 21-item Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988), but given the substantial per-use licensing cost of administrating the BAI, the remaining 287 couples (52%) completed the 14-item anxiety subscale of the Depression, Anxiety, and Stress Scale (DASS; Lovibond & Lovibond, 1995). For both measures, participants rated how much they were bothered by a series of symptoms during the past week (0 = *not at all*, 3 = *most of the time*). Sample DASS items included (a) feeling terrified, (b) difficulty breathing, and (c) feeling close to panic (BAI: M = 3.96, SD = 7.22; DASS: M = 1.86, SD = 3.74).

To put the scales on a common metric, we followed guidelines by Cohen, Cohen, Aiken, and West (1999) to convert the responses to the percent of maximum possible score (POMP). The POMP metric is advantageous because (a) it is a simple linear transformation grounded in the original units of the scale, (b) it is not sample dependent or population dependent, and (c) it is superior to other ways of facilitating comparisons across different measures of the same construct. The POMP scores in our sample averaged 5.32 across waves (SD = 10.26, range = 0–100), with 412 individuals (37%) meeting or exceeding clinical cutoff scores for moderate anxiety (Beck et al., 1988; Lovibond & Lovibond, 1995) at one or more waves of the study.

Repeated-measures analysis of variance indicated no difference between the POMP scores for the two versions of the measure for returning service members, $F(1, 385) = 0.13$, *ns*, but at-home partners reported higher POMP scores on the BAI than the DASS,

[2] We measured people's reports of relationship satisfaction at each wave, but the variable showed notable consistency from month to month (intraclass correlation = .92 for returning service members and .94 for at-home partners, so we covaried covaried only their Wave 1 scores for the sake of parsimony.

tapraid5/ze7-fam/ze7-fam/ze799917/ze73155d17z | xppws | S=7 | 7/4/17 | 8:17 | Art: 2016-0734

$F(1, 426) = 12.77$, $p < .001$. Consequently, we covaried the version of the measure in the tests of our hypotheses.

Descriptive statistics for the POMP scores were (a) Wave 1 $M = 6.80$, $SD = 10.27$, range = 0.00–90.00; (b) Wave 2 $M = 5.71$, $SD = 10.01$, range = 0.00–96.83; (c) Wave 3 $M = 5.32$, $SD = 9.98$, range = 0.00–82.54; (d) Wave 4 $M = 5.32$, $SD = 10.47$, range = 0.00–93.65; (e) Wave 5 $M = 4.69$, $SD = 9.99$, range = 0.00–90.48; (f) Wave 6 $M = 4.81$, $SD = 10.44$, range = 0.00–90.48; (g) Wave 7 $M = 5.00$, $SD = 10.56$, range = 0.00–100.00; and (h) Wave 8 $M = 4.73$, $SD = 10.20$, range = 0.00–77.78. Within-person correlations across time indicated that anxiety was somewhat stable from wave to wave for both returning service members (rs ranged from .42 to .80, all ps $< .001$) and at-home partners (rs ranged from .56 to .84, all ps $< .001$).

Results

Preliminary Analyses

We conducted two preliminary analyses to examine communication during deployment and anxiety at Wave 1. A first preliminary analysis involved paired-sample t tests comparing returning service members ($n = 555$) versus at-home partners ($n = 555$). Findings indicated no differences for the frequency or constructiveness of communication during deployment, but at-home partners reported more destructive communication during deployment ($M = 2.16$, $SD = 0.98$) than returning service members reported ($M = 2.06$, $SD = 0.91$), $t(554) = 2.05$, $p = .041$. At-home partners also reported more anxiety at Wave 1 ($M = 8.59$, $SD = 11.61$) than returning service members reported ($M = 5.00$, $SD = 8.35$), $t(554) = 6.59$, $p < .001$.

A second preliminary analysis evaluated the bivariate correlations among the core covariates, independent variables, and dependent variable at Wave 1 (see Table 1). For both partners, (a) relationship satisfaction was positively correlated with the frequency and constructiveness of communication during deployment, (b) relationship satisfaction was negatively correlated with both the destructiveness of communication during deployment and anxiety, and (c) constructive and destructive communication during deployment were negatively correlated. Anxiety was negatively correlated with constructive communication during deployment and positively correlated with destructive communication during deployment. For returning service members, combat exposure was negatively correlated with relationship satisfaction and positively correlated with anxiety. For at-home partners, the frequency and constructiveness of communication during deployment were positively associated.

T1, AQ: 3

Substantive Analyses

Unconditional model. We conducted the substantive analyses using dyadic growth curve modeling within a structural equation modeling framework (Kenny et al., 2006; Peugh, DiLillo, & Panuzio, 2013). We began by modeling the trajectory of anxiety reported by returning service members and at-home partners separately in an unconditional model without predictors (see Figures 1 and 4A in the online supplemental material), correlating the intercepts and slopes within couples, and correlating the residuals of anxiety within couples at each wave (following Kenny et al., 2006).

The unconditional model had a marginal fit to the data, $\chi^2/df = 3.80$, CFI = .953, RMSEA = .071 [90% confidence interval {CI} = .064 to .078]. Consistent with H1, the statistically significant negative slopes showed that anxiety decreased across time for both returning service members and at-home partners (see Table 2). For both partners, variance in their initial levels of anxiety (intercepts) and the change in their anxiety across time (slopes) was available to be explained by the predictors. The intercepts, but not the slopes, were positively correlated between partners. Results of χ^2 difference tests (not shown) indicated that returning service members and at-home partners differed in their intercepts, slopes, and associated variance components.

T2, AQ: 4

Preliminary conditional model. A second step involved estimating two preliminary conditional models with predictors (see Figure 2 in the online supplemental material). These models contained people's Wave 1 reports of the frequency of communication during deployment along with their Wave 1 reports of either constructive or destructive communication. The independent variables were modeled as actor and partner effects predicting each person's intercept and slope.

Results indicated a marginal fit to the data for the constructive and destructive communication models, respectively, $\chi^2/df = 3.07$ and 3.09, CFI = .953 and .953, RMSEA = .061 [90% CI = .055 to .067] and .061 [90% CI = .055 to .068]. The constructive communication model explained slightly less variation than the destructive communication model, respectively, for both returning service members (intercept $R^2 = .016$ and .064; slope $R^2 = .009$

Table 1
Bivariate Correlations at Wave 1

Variable	V1	V2	V3	V4	V5	V6
V1: Relationship Satisfaction	.37***	−.10*	.12**	.26***	−.27***	−.23***
V2: Combat Exposure	−.04	.75***	.04	−.03	.02	.14**
V3: Communication Frequency	.14**	.05	.49***	.08	−.05	.03
V4: Constructive Communication	.46***	.01	.22***	.26***	−.56***	−.14**
V5: Destructive Communication	−.39***	.07	−.08	−.58***	.25***	.25***
V6: Generalized Anxiety	−.18***	.06	.03	−.14**	.29***	.20***

Note. $N = 555$ returning service members, at-home partners, or military couples. Wave 1 bivariate correlations for returning service members appear above the diagonal, Wave 1 bivariate correlations for at-home partners appear below the diagonal, and Wave 1 within-couple correlations appear on the diagonal and are underlined.
* $p < .05$. ** $p < .01$. *** $p < .001$.

tapraid5/ze7-fam/ze7-fam/ze799917/ze73155d17z | xppws | S=7 | 7/4/17 | 8:17 | Art: 2016-0734

Table 2
Growth Parameters for the Unconditional Model Predicting Generalized Anxiety

Parameter	Generalized anxiety of returning service members		Generalized anxiety of at-home partners	
	Estimate	Variance	Estimate	Variance
Intercept	4.71***	48.49***	7.32***	95.92***
Slope	−0.14**	0.69***	−0.33***	0.88***
r of intercept and slope	−0.11		−0.30***	

Note. $N = 555$ military couples. The within-couple correlation of the intercepts for generalized anxiety was $r = .18$, $p < .001$. The within-couple correlation of the slopes for generalized anxiety was $r = .11$, *ns*.
** $p < .01$. *** $p < .001$.

and .022) and at-home partners (intercept $R^2 = .032$ and .095; slope $R^2 = .029$ and .035).

Actor effects but not partner effects were apparent. Consistent with H2a, constructive communication during deployment predicted less initial anxiety for both returning service members ($\beta = -.11$, $p = .02$) and at-home partners ($\beta = -.16$, $p = .001$). As proposed by H3a, destructive communication during deployment predicted more initial anxiety for both returning service members ($\beta = .24$, $p < .001$) and at-home partners ($\beta = .29$, $p < .001$). Contrary to H2b and H3b, constructive communication during deployment did not predict the slope of anxiety for either partner, and returning service members who reported more destructive communication during deployment experienced a stronger (rather than weaker) decline in their anxiety over time ($\beta = -.15$, $p = .02$). No effects emerged for the frequency of communication during deployment.

Final conditional model. A third step involved estimating a final conditional model as a comprehensive test of our hypotheses (see Figure 3 in the online supplemental material). We again modeled actor and partner effects of each independent variable and covariate predicting each person's intercept and slope. The two independent variables were Wave 1 reports of constructive (H2) and destructive (H3) communication during deployment. The three core covariates were Wave 1 reports of relationship satisfaction, combat exposure, and frequency of communication during deployment.

We included 18 secondary Wave 1 covariates modeled as predictors of each person's intercept and slope. We streamlined the number of parameters to be estimated by converting each categorical covariate into a single dummy-coded term. Five covariates represented individual attributes for each person: (a) sex (1 = male, 0 = female),[3] (b) race (1 = White, 0 = non-White), (c) age, (d) education, and (e) the number of days elapsed between reunion and participation. Seven covariates indexed relationship attributes: (a) household income, (b) relationship length, (c) marital status (1 = married, 0 = not married), (d) prior marriage for the at-home partner, (e) prior marriage for the returning service member, (f) living together in the same residence upon reunion, and (g) the presence of children. Five covariates represented military attributes: (a) military branch (1 = active-duty Army, 0 = all other branches), (b) dual-military couple status, (c) first deployment for the returning service member, (d) length of deployment, and (e) mission during deployment (1 = combat mission, 0 = noncombat mission). A final covariate indexed the measure of anxiety the participant completed (1 = BAI, 0 = DASS). To simplify the interpretation of the intercepts, we grand-mean centered both the time-based measures and the multi-item scales.

The final conditional model showed reasonable fit, $\chi^2/df = 1.85$, CFI = .965, RMSEA = .039 [90% CI = .035 to .043], and it explained a modest degree of variation for both returning service members (intercept $R^2 = .182$; slope $R^2 = .130$) and at-home partners (intercept $R^2 = .209$; slope $R^2 = .153$). Of note, the core covariates and independent variables accounted for the downward slope of generalized anxiety over time for both returning service members and at-home partners (see Figure 4B in the online supplemental material for the trajectory of generalized anxiety based on the final conditional model).

Results for the core covariates indicated that the Wave 1 relationship satisfaction reported by returning service members and at-home partners negatively predicted their own initial levels of anxiety (see Table 3). Moreover, the combat exposure reported by returning service members was positively associated with their own initial level of anxiety as well as the slope of anxiety for at-home partners. Frequency of communication during deployment did not predict the intercepts or slopes of anxiety for either returning service members or at-home partners.

With respect to the other covariates, the intercept for returning service members was predicted by their race ($\beta = -.10$, $p = .028$), and the slope for returning service members corresponded with their level of education ($\beta = .25$, $p = .002$). The intercept for at-home partners was predicted by the returning service member's level of education ($\beta = -.14$, $p = .010$), the length of the deployment ($\beta = -.09$, $p = .049$), and the version of the anxiety measure that at-home partners completed ($\beta = .17$, $p < .001$). Moreover, the slope for at-home partners was predicted by deployment mission ($\beta = -.15$, $p = .028$).

Five actor effects emerged in the tests of our multivariate hypotheses (see Table 3) that were similar to the results of the preliminary conditional models. Contrary to H2a, constructive communication during deployment did not predict the intercept for either partner. H2b was only supported for at-home partners: Constructive communication during deployment reported by at-home partners negatively predicted their slope, suggesting a steeper decline in anxiety over time. H3 also received mixed support. As predicted, destructive communication during deployment reported by returning service members and at-home partners was a positive predictor of their intercept (H3a); opposite expectations, it was a negative predictor of their slope (H3b). In other words, destructive communication during deployment corresponded with higher levels of anxiety at Wave 1 but a steeper decline in anxiety over time.

In a follow-up analysis, we conducted χ^2 difference tests of structural invariance to compare the paths for the independent variables and core covariates between returning service members and at-home partners. No differences emerged. These results suggest that the associations between communication during deployment and anxiety upon reunion were largely similar for returning service members and at-home partners.

[3] We covaried only the sex of the returning service member because 554 of the 555 military couples in the sample were heterosexual.

tapraid5/ze7-fam/ze7-fam/ze799917/ze73155d17z | xppws | S=7 | 7/4/17 | 8:17 | Art: 2016-0734

Table 3
Actor Effects for the Final Conditional Model Predicting Generalized Anxiety

	Generalized anxiety of returning service members		Generalized anxiety of at-home partners	
	B (*SE*)	β	B (*SE*)	β
Predictors of the intercepts				
Constructive communication	0.74 (0.54)	.08	0.94 (0.76)	.07
Destructive communication	1.98 (0.43)	.26***	2.91 (0.55)	.29***
Relationship satisfaction	−0.33 (0.12)	−.15**	−0.34 (0.15)	−.12*
Combat exposure	1.83 (0.78)	.17*	0.10 (0.99)	.01
Communication frequency	0.05 (0.35)	.01	0.73 (0.51)	.07
Predictors of the slopes				
Constructive communication	−0.03 (0.09)	−.03	−0.31 (0.10)	−.24**
Destructive communication	−0.15 (0.07)	−.16*	−0.16 (0.07)	−.16*
Relationship satisfaction	0.03 (0.02)	.09	0.04 (0.02)	.14
Combat exposure	0.08 (0.13)	.06	−0.13 (0.13)	−.09
Communication frequency	0.03 (0.06)	.04	−0.11 (0.07)	−.11

Variance parameters	Estimate (*SE*)	Estimate (*SE*)
Intercept variance	39.59*** (3.09)	76.14*** (5.57)
Slope variance	0.61*** (0.08)	0.76*** (0.10)

Note. $N = 555$ military couples. The model included 18 other Wave 1 covariates. The sole partner effect was that combat exposure reported by returning service members was positively associated with the slope of generalized anxiety for at-home partners ($\beta = .21$, $p = .03$).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

The return home of service members after deployment is portrayed by the media as an overwhelmingly joyful celebration, but such depictions cast reunion as an endpoint rather than the beginning of a potentially challenging period for military families (Howard & Prividera, 2015). Following Greene et al.'s (2010) call for data on the mental health ramifications of communication during deployment, we conducted a longitudinal study in which 555 military couples reported on their generalized anxiety once per month for 8 months starting at homecoming. We next consider how our results advance theory, research, and practice.

Implications of the Results

A recent critique of the literature on communication during deployment contends that much of the knowledge claims are "based on anecdotal and indirect evidence" (Cigrang et al., 2014, p. 335). We sought to strengthen the theoretical foundation of the literature by using the logic of the emotional cycle of deployment model (Pincus et al., 2001). The model is popular for describing the experiences of military couples across the trajectory, but it has not been subjected to extensive empirical testing. Our findings provided mixed support for hypotheses we derived from the model's reasoning and research linking communication and anxiety.

As predicted, returning service members and at-home partners reported that their generalized anxiety declined over time across the postdeployment transition (H1), and at-home partners who retrospectively reported more constructive communication during deployment experienced a more rapid decline in anxiety over time (H2b). Returning service members and at-home partners who retrospectively reported more destructive communication during deployment experienced more anxiety at Wave 1 (H3a), but contrary to expectations, they also experienced a more rapid decline in anxiety over time (H3b). These findings endured across waves (over 8 months of reintegration); were apparent after controlling for core covariates (relationship satisfaction, combat exposure, frequency of communication during deployment); and were robust beyond a heterogeneous set of individual characteristics (sex, race, age, education, number of days since reunion), relationship qualities (household income, relationship length, marital status, prior marriage for either partner, cohabitation, presence of children), and military features (branch of service, dual-military couple status, deployment experience, length, mission).

Our study provides more insight into communication during deployment than previously available. Whereas extant work has focused on the frequency of communication and/or channel use (Carter & Renshaw, 2016b; Cigrang et al., 2014; Ponder & Aguirre, 2012), our findings revealed that the valence of communication during deployment was a unique predictor of anxiety after controlling for frequency. Two implications are noteworthy. First, results from both the confirmatory factor analyses and the dyadic growth curve models demonstrated that positively valenced versus negatively valenced communication are not opposite ends of the same continuum; the presence of both constructive communication and destructive communication mattered across the trajectory (see also Lavner & Bradbury, 2012). More broadly, our longitudinal data bolster recent cross-sectional retrospective work suggesting that communication dynamics during deployment have implications for people's outcomes after homecoming (e.g., Carter & Renshaw, 2016b; LeBlanc & Olson, 2015; Ponder & Aguirre, 2012). These findings underscore the importance of understanding how the stages of the deployment cycle are connected within people's experiences.

Our investigation also contributes to the literature on generalized anxiety. Scholars have stressed the importance of distinguishing specific interpersonal processes related to anxiety (Beck, 2010; Newman & Erickson, 2010), and our findings suggest constructive and destructive communication as two potential pathways. Perhaps a lack of

tapraid5/ze7-fam/ze7-fam/ze799917/ze73155d17z | xppws | S=7 | 7/4/17 | 8:17 | Art: 2016-0734

constructive communication inhibits the provision of social support, which is a significant contributor to people's physical and mental health (Cunningham & Barbee, 2000; Cutrona, 1996); alternatively, it may demarcate the interpersonal skill deficits that perpetuate anxiety (Alden & Taylor, 2004). Another possibility is that destructive communication fosters perceived criticism between partners (Hooley & Teasdale, 1989), which may heighten people's apprehension (e.g., Renshaw, Chambless, & Steketee, 2003). Our suggestions regarding these two potential pathways are speculative, but our data open the door to additional work elucidating the mechanisms connecting the valence of communication with anxiety among military couples.

Theorizing about the pathways of constructive and destructive communication is complicated by our contradictory findings predicting the decline in people's generalized anxiety over time. When at-home partners retrospectively reported more constructive communication during deployment (H2b), and when both returning service members and at-home partners retrospectively reported more destructive communication during deployment (H3b), individuals showed swifter improvement in their anxiety over time. In other words, both positive and negative interactions during deployment coincided with an accelerated drop in anxiety across reintegration. These results are reminiscent of research showing incongruous outcomes for the frequency of communication during deployment (cf. Cigrang et al., 2014; Houston et al., 2013; Joseph & Afifi, 2010), and they invite speculation about the explanation for the incongruity. Perhaps the findings reflect a statistical artifact of greater Wave 1 generalized anxiety for individuals who engaged in more destructive communication during deployment. On the other hand, perhaps communicative exchanges of any sort during deployment (compared to overtly avoidant behaviors) exemplify a deep, abiding, and intertwined interdependence between partners (e.g., Berscheid, 1983) that helps to alleviate anxiety more quickly upon reunion. Or perhaps the combination of both constructive and destructive communication during deployment signals that military couples are confronting challenging topics immediately rather than sidestepping issues of conflict that resurface during reintegration and prolong anxiety (e.g., Joseph & Afifi, 2010; Knobloch, Ebata, McGlaughlin, & Theiss, 2013). We look forward to future work sorting out these possibilities, but in the meantime, our results broadly underscore the role of communication in the experience of anxiety (e.g., Whisman & Beach, 2010).

Our study suggests three clinical recommendations aimed at preserving the mental health of returning service members and at-home partners during the transition from deployment to reunion. First, our results imply that military couples who enact constructive communication and refrain from destructive communication during deployment derive the most mental health benefits at reunion. A major caveat is that our data do not resolve conflicting advice regarding communication during deployment (Greene et al., 2010)—for example, whether to share openly or to avoid stressful topics to protect each other from worry (Durham, 2010; Joseph & Afifi, 2010)—because both constructive and destructive communication during deployment corresponded with a more rapid decline in anxiety across the reintegration period. Second, with respect to intervention, our findings emphasize the value of offering services to military couples at key junctures throughout the trajectory. Whereas communication skills training (e.g., Butler & Wampler, 1999) may be a valuable addition to predeployment education to help military couples interact effectively during deployment, clinical intervention to manage generalized anxiety may be beneficial immediately upon homecoming, when people's symptoms of anxiety may be most severe. Third, regarding prevention, research evaluating the long-term effectiveness of communication skills education in preventing or treating anxiety among military couples (e.g., Arnow, Taylor, Agras, & Telch, 1985) is an important next step.

Limitations and Directions for Future Research

Despite the relatively large size of our sample compared with other work on this topic, limitations temper the conclusions drawn from our data. First, our measures of communication during deployment were new rather than established scales. Further construct validation work is required. Second, we relied on a convenience recruitment strategy that attracted returning service members and at-home partners who reported relatively low levels of anxiety. Additional research is needed to evaluate our findings among military couples experiencing more substantial symptoms. Third, we lacked information about the mental health and relationship functioning of military couples before deployment. The emotional cycle of deployment model (Pincus et al., 2001) and prior research (Cigrang et al., 2014) suggest that the interpersonal dynamics of military couples before separation shape how they navigate subsequent stages. Moreover, we asked people to report on their communication during deployment after homecoming rather than during the separation, which raises the possibility of recall biases. Finally, we did not account for the communication of military couples after reunion. A prospective longitudinal investigation is vital both for testing the entirety of the emotional cycle of deployment model and for disentangling the extent to which predeployment, during-deployment, and after-deployment communication dynamics drive outcomes.

Other directions for future research involve devoting more nuanced attention to communication during deployment. Our findings regarding valence offer a starting point by highlighting the merits of considering communication during deployment in more complex ways than sheer frequency. However, constructiveness and destructiveness are hardly exhaustive of the ways to conceptualize communication during deployment. Scholars could build on in-depth work examining particular functions of communication during deployment, such as how military couples seek support (Rossetto, 2013), maintain their relationship (Maguire et al., 2013; Merolla, 2010), preserve their autonomy (Sahlstein, Maguire, & Timmerman, 2009), and decide what to disclose (Durham, 2010; Joseph & Afifi, 2010; Knobloch et al., 2015). We see value in future investigations that attend to more diverse aspects of communication during deployment.

Opportunities for advancement also exist with respect to outcomes. We selected generalized anxiety as our dependent variable because it is explicitly implicated in the theorizing of the emotional cycle of deployment model (Pincus et al., 2001), but communication during deployment is likely to correspond with other individual and relational outcomes relational outcomes as well. Scholars could consider other mental health symptoms such as depression and posttraumatic stress (e.g., Wilcox et al., 2015), other aspects of functioning such as reintegration difficulty (e.g., Knobloch, Ebata, McGlaughlin, & Ogolsky, 2013; Marek & D'Aniello, 2014), and other markers of dyadic well-being such as relational turbulence (e.g., Theiss & Knobloch, 2014). We look forward to future research that builds on our findings by considering an expanded range of outcomes to help military couples navigate the deployment cycle.

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Military Children's Difficulty With Reintegration After Deployment: A Relational Turbulence Model Perspective

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Military Children's Difficulty With Reintegration After Deployment: A Relational Turbulence Model Perspective

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This study drew on the relational turbulence model to investigate how the interpersonal dynamics of military couples predict parents' reports of the reintegration difficulty of military children upon homecoming after deployment. Longitudinal data were collected from 118 military couples once per month for 3 consecutive months after reunion. Military couples reported on their depressive symptoms, characteristics of their romantic relationship, and the reintegration difficulty of their oldest child. Results of dyadic growth curve models indicated that the mean levels of parents' depressive symptoms (H1), relationship uncertainty (H2), and interference from a partner (H3) were positively associated with parents' reports of military children's reintegration difficulty. These findings suggest that the relational turbulence model has utility for illuminating the reintegration difficulty of military children during the postdeployment transition.

Keywords: depressive symptoms, interference from a partner, military children, relational uncertainty, reunion after deployment

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Wartime deployment and reunion have profound effects on military families. Service members must execute their mission abroad and then reintegrate back into domestic life upon their return (Pincus, House, Christenson, & Adler, 2001). Romantic partners have to parent alone during deployment and then reallocate control after homecoming (Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Lara-Cinisomo et al., 2012). Military children need to adjust to new routines in the service member's absence and then adapt to changes in family life again upon reunion (Huebner, Mancini, Wilcox, Grass, & Grass, 2007; Mmari, Roche, Sudhinaraset, & Blum, 2009). Moreover, military couples and children must acclimate to these shifting circumstances against the backdrop of concern for each other's welfare (Faber et al., 2008).

Although research has documented the ramifications of deployment and reintegration for military couples (Gibbs, Clinton-Sherrod, & Johnson, 2012; Mansfield et al., 2010) and children (Hisle-Gorman et al., 2015; Lester et al., 2010), far less is known about how the relationship climate between recently reunited military parents spills over to the well-being of military children. This gap in the scholarly literature corresponds with a gap in the evidence-based guidelines available to policymakers and practitioners supporting military families during the postdeployment transition. To bridge those gaps, our study collects longitudinal data from recently reunited military couples to map the trajectory of military children's reintegration difficulty and to investigate parental relational dynamics as predictors of military children's reintegration difficulty across the first 3 months after homecoming.

The *relational turbulence model* is the theoretical framework that guides our study. Whereas the model has a track record of success illuminating the experiences of military couples during times of transition (Knobloch & Theiss, 2011; Theiss & Knobloch, 2014), we break new ground by evaluating the reach of the model beyond couple outcomes to child outcomes. Our study advances theory by testing the applicability of the relational turbulence model beyond the romantic dyad, extends research by assessing the link between the well-being of military couples and the well-

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being of military children, and informs practice by suggesting strategies to help military families navigate the transition from deployment to reunion.

Military Children's Difficulty With Reintegration During the Postdeployment Transition

Wartime deployment can have negative repercussions for military children. For example, a meta-analysis drawing on studies of both pre-9/11 and post-9/11 deployments showed a small but consistent effect (weighted $r = .08$) on military children's maladjustment (Card et al., 2011). Preschool and elementary school military children with a deployed parent are more likely to receive medical care for mental health problems, injuries, and maltreatment upon reunion compared to military children whose parent did not deploy (Hisle-Gorman et al., 2015). Middle school and high school military youth with a currently deployed or recently returned parent report more alcohol and drug use compared to civilian children (Acion, Ramirez, Jorge, & Arndt, 2013). Moreover, longer deployments correspond with more child behavior problems (Barker & Berry, 2009; Chandra et al., 2010), heightened depressive symptoms (Lester et al., 2010), and poorer academic achievement (Engel, Gallagher, & Lyle, 2010). These studies underscore the risks of deployment for military children.

Reunion after deployment can be stressful for military children as well. *Difficulty with reintegration* refers to the cognitive, emotional, behavioral, and relational challenges facing military families upon homecoming (Chandra et al., 2011; Chandra et al., 2010). Military children may encounter problems getting to know the returning parent again, be anxious about future separations, and worry about the quality of their parents' relationship (Chandra et al., 2010). They report feeling unsure about how to cope with changes to their routines, disappointed by the returning parent's exhaustion and irritability, and frustrated by a lack of appreciation for their growth during deployment (Huebner et al., 2007; Knobloch, Pusateri, Ebata, & McGlaughlin, 2014). Military children also receive less effective parenting from the returning service member the longer he or she has been away (Davis, Hanson, Zamir, Gewirtz, & DeGarmo, 2015). In fact, some studies suggest that reintegration after deployment is more disruptive for military children than deployment itself (Huebner et al., 2007; Mmari et al., 2009).

Trajectory of Military Children's Reintegration Difficulty

A key descriptive question concerns how military parents characterize their children's reintegration difficulty across the transition. Some theorists have depicted the reunion phase as beginning with a "honeymoon period" that gives way to the escalating stresses and strains of everyday life (e.g., Pincus et al., 2001). Without empirical observations over time, however, those claims remain speculative. Longitudinal data are essential for ascertaining when and how to offer support services to military families (e.g., Lester & Flake, 2013; Sahlstein Parcell & Maguire, 2014). Consequently, we posit Research Question 1 (RQ1) to gain descriptive information about the trajectory of parental reports of military children's reintegration difficulty:

> *Research Question 1:* What is the trajectory of parents' reports of military children's difficulty with reintegration across the first 3 months after reunion following deployment?

Parental Depressive Symptoms

Our logic about predictors of military children's reintegration difficulty begins with the overarching assumption that parental dynamics spill over to predict the welfare of children. Notably, that assumption is supported by decades of scholarship on both civilian families and military families. Research on civilian families demonstrates that children's cognitive, emotional, and behavioral well-being is negatively affected by conflict between parents (Cummings & Davies, 2010; Grych, Oxtoby, & Lynn, 2013). Similarly, work on military families shows that military children fare less well during deployment and reunion when either or both parents are experiencing substantial stress (Barker & Berry, 2009; Flake, Davis, Johnson, & Middleton, 2009) or mental health problems (Lester et al., 2010).

Parental *depressive symptoms*, in particular, may share a strong connection with the well-being of military children during homecoming. Recent theorizing implies that depressive symptoms may generate upheaval upon reunion because returning service members and at-home partners are hampered in their ability to rekindle bonds, manage emotions, and communicate effectively (Knobloch & Theiss, 2011). Research consistent with this logic demonstrates that the depressive symptoms of military personnel and at-home partners positively predict military children's internalizing and externalizing symptoms during reunion (Lester et al., 2010). Similarly, when at-home partners report more depressive symptoms, military children experience greater challenges upon homecoming (Chandra et al., 2010). Both theory and research suggest that any consideration of parental spillover to military children's outcomes should attend to the depressive symptoms of returning service members and at-home partners. Thus, we propose Hypothesis 1 (H1):

> *Hypothesis 1:* The depressive symptoms reported by military parents are positively associated with their reports of their oldest child's difficulty with reintegration.

Relational Turbulence and Military Children's Difficulty With Reintegration

The relational turbulence model considers why times of transition—even ostensibly happy ones such as reunion following deployment—can be challenging. The model has shown utility for explaining interpersonal dynamics during a variety of life changes, including (a) the transition to parenthood, (b) the adjustment to a health condition, and (c) the shift to an empty nest (Solomon, Knobloch, Theiss, & McLaren, 2016). Recent work on military families suggests the model is relevant to how military youth experience a family member's deployment (Knobloch, Pusateri, Ebata, & McGlaughlin, 2015) and how military couples navigate reunion after deployment (Knobloch & Theiss, 2011; Theiss & Knobloch, 2014).

The model defines *transitions* as periods of discontinuity during relationship progression that require individuals to adapt to changing circumstances (Solomon, Weber, & Steuber, 2010). Moreover,

the model identifies relational uncertainty and interference from a partner as two parameters of romantic relationships that underlie turmoil during times of transition.

Parental Relational Uncertainty

Relational uncertainty refers to the degree of confidence (or lack of confidence) people have in their perceptions of involvement in a relationship (Knobloch & Solomon, 1999). Whereas early conceptualizations of the construct focused on the questions individuals have about their partner's participation in a relationship (*partner uncertainty*), more contemporary conceptualizations also attend to the questions individuals have about their own participation in the relationship (*self uncertainty*) and the questions they have about the dyad as a whole (*relationship uncertainty*; Knobloch & Satterlee, 2009). Both theoretical reasoning and empirical results characterize self, partner, and relationship uncertainty as unique but interrelated sources of relational uncertainty (Knobloch & Satterlee, 2009; Knobloch & Solomon, 1999).

According to the logic of the relational turbulence model, individuals experiencing relational uncertainty during times of transition encounter turmoil because they lack the capacity to make sense of changing circumstances (Solomon & Theiss, 2011; Solomon et al., 2010). People who are unsure about the nature of their relationship have trouble producing and processing messages when communicating with their partner (Knobloch & Satterlee, 2009), leaving them vulnerable to relational turbulence (Theiss & Knobloch, 2014). Research supporting the model indicates that returning service members and at-home partners experiencing relational uncertainty are less satisfied with their relationship (Knobloch & Theiss, 2011), judge their partner to be less responsive to their needs (Theiss & Knobloch, 2014), and communicate with less openness and more aggressiveness (Theiss & Knobloch, 2013).

Homecoming after deployment is rife with relational uncertainty for military couples. Upon reunion, returning service members and at-home partners report questions about relationship commitment, reintegration issues, household stressors, personality changes, sexual behavior and infidelity, the service member's health, and communication (Knobloch & Theiss, 2012). Extending the model's logic beyond the romantic dyad to children's outcomes, as implied by substantial research showing a link between marital dynamics and child well-being in general (e.g., Mueller, Jouriles, McDonald, & Rosenfield, 2015), suggests that the relational uncertainty experienced by recently reunited fathers and mothers should correspond with military children's reintegration difficulty during the postdeployment transition. Hypothesis 2 (H2) follows:

> *Hypothesis 2:* Relational uncertainty reported by military parents is positively associated with their reports of their oldest child's difficulty with reintegration.

Parental Interference From a Partner

Interference from a partner happens when individuals intentionally or unintentionally block each other's ability to accomplish everyday goals (Knobloch & Solomon, 2004). During periods of relationship tranquility, people tend to participate in each other's daily routines in helpful ways, but when circumstances change, interference from a partner is likely as individuals adjust their roles and routines. According to the model, interference from a partner sparks strong negative emotion in response to the goal blockage, leading to volatility and turbulence (Solomon & Theiss, 2011). Findings consistent with the model's reasoning demonstrate that interference from a partner experienced by returning service members and at-home partners corresponds with less relationship satisfaction (Knobloch & Theiss, 2011), more appraisals of turmoil in the relationship (Theiss & Knobloch, 2014), and less open and more aggressive communication (Theiss & Knobloch, 2013) upon reunion after deployment.

The postdeployment transition yields many opportunities for recently reunited fathers and mothers to interfere with each other's everyday goals. Indeed, military couples report hindrance in executing daily routines, completing domestic tasks, distributing control, gaining autonomy, parenting, bridging differences between partners, planning social activities, and carving out quality time together during the transition from deployment to reunion (Knobloch & Theiss, 2012). At present, the relational turbulence model has not been extended beyond the romantic dyad to examine whether interference from a partner has ramifications for children's adjustment, but the possibility is reasonable given ample evidence that disharmony in marriage affects the well-being of children (e.g., Grych et al., 2013). Hypothesis 3 (H3) stems from our theorizing:

> *Hypothesis 3:* Interference from a partner reported by military parents is positively associated with their reports of their oldest child's difficulty with reintegration.

Method

Our research design was a longitudinal study containing three waves of online survey data from U.S. service members and their romantic partners (for other results from this sample, see Knobloch, Basinger, Wehrman, Ebata, & McGlaughlin, 2016; Knobloch, Ebata, McGlaughlin, & Ogolsky, 2013; Knobloch, Ebata, McGlaughlin, & Theiss, 2013; Knobloch, McAninch, Abendschein, Ebata, & McGlaughlin, 2016). After receiving Institutional Review Board approval, we posted information to online forums frequented by military families and by emailing announcements to military family life administrators located in all 50 states. Military couples were required to meet three eligibility criteria: (a) one or both partners had returned home from deployment within the previous 30 days, (b) partners were custodial parents of one or more children, and (c) partners had separate e-mail accounts.[1]

Military couples reported on the reintegration difficulty of their eldest child in light of evidence that the deployment cycle is more challenging for older children (Barker & Berry, 2009; Chandra et al., 2010; Lipari, Winters, Matos, Smith, & Rock, 2011). Although relying on military parents to report on their children's reintegration difficulty is less desirable than collecting data from children themselves, prior work shows a reasonable correlation between parents' and children's reports of the distress children experience

[1] Safeguards against fraud included: (a) tracking advertising to ensure that boosts in recruitment were tied to specific outreach, (b) declining enrollment to suspicious volunteers, (c) collecting open-ended data to assess participants' familiarity with military life, (d) embedding a questionnaire completion code to verify participation, and (e) removing outliers in time spent on the questionnaires. Our close inspection of the resulting data did not reveal any problems.

during reunion after deployment (Wilson, Wilkum, Chernichky, MacDermid Wadsworth, & Broniarczyk, 2011).

Procedures

We e-mailed military couples a link to the Wave 1 questionnaire plus a unique login and a unique password. Reminder e-mails were sent on the fourth day and the sixth day to individuals who had not yet completed the Wave 1 questionnaire. On the seventh day, the Wave 1 logins expired, and we eliminated 24 military couples because one or both partners did not submit their responses by the 1-week deadline. Data collection resumed for the continuing military couples beginning on the 31st day after their enrollment for Wave 2 and the 61st day after their enrollment for Wave 3. Participants received a $15 gift card from a national retailer for each wave they completed, along with a bonus $15 gift card if they completed all three waves.

Participants

Data came from 236 individuals ($N = 118$ heterosexual military couples) residing in 20 states. On average, participants were 33.03 years of age (range = 21 to 63 years, $SD = 6.84$ years), and their romantic relationships were 9.61 years in duration ($SD = 5.67$ years). The racial composition of the sample was 84% Caucasian, 6% Hispanic, 4% African American, 3% Native American, 2% Asian, and 1% other. Although the vast majority of military couples were married (98%), others were engaged to be married (1%) or seriously dating (1%). Most military couples were composed of one service member and one civilian partner (86%). Within the subset of dual-career military couples (14%), one dyad was a dual-deployed military couple.

Most service members were part of the U.S. Army (57%) or the Army National Guard (21%), with smaller percentages representing the Air National Guard (13%), the Air Force (6%), and the Marines (3%). Of the deployed service members ($n = 119$), 115 were men (97%) and 4 were women (3%). Their length of deployment, on average, was 9.67 months ($SD = 3.86$ months). Most indicated that their primary mission during deployment was combat (81%); others reported peacekeeping (9%), training (4%), relief (1%), or other (5%). Approximately 68% had completed multiple deployments (two deployments = 26%, three deployments = 19%, four deployments = 8%, five or more deployments = 15%); the remaining 32% were returning home from their first tour of duty. The length of time between homecoming and study enrollment averaged 16.78 days ($SD = 8.74$ days).

Participants were custodial parents of between one and eight children ($M = 2.11$ children, $SD = 1.16$ children; $n = 65$ boys, 51 girls, 2 not reported). Parents reported on the well-being of their oldest child (range = 6 months to 20 years old; $M = 8.10$ years, $SD = 5.47$ years).

Measures

We measured demographic variables in Wave 1 and all other variables in each wave. We conducted confirmatory factor analyses (CFA) on the multiitem scales at Wave 1 with fit criteria set at $\chi^2/df < 3.00$, CFI > .950 (Hu & Bentler, 1999), and RMSEA < .100 (Browne & Cudeck, 1993). Then, we computed the measures by averaging the responses to the items identified as unidimensional. See Table 1 for the descriptive statistics for each wave.

Depressive symptoms. We measured depressive symptoms via the 3-item Mental Health Inventory (MHI-d; Berwick et al., 1991). The MHI-d is a face valid, reliable, and precise measure that shows good sensitivity and specificity in screening for major depression and dysthymia compared to clinical diagnostic interviews (Cuijpers, Smits, Donker, ten Have, & de Graff, 2009; Yamazaki, Fukuhara, & Green, 2005). The items completed the stem "How often in the past 30 days have you . . .?" (a) felt downhearted and blue, (b) been a happy person (reverse scored), and (c) felt so down in the dumps that nothing could cheer you up (1 = *none of the time*, 6 = *all of the time*; $\chi^2/df = 1.41$, CFI = .995, RMSEA = .056).

Relational uncertainty. We used short forms of Knobloch and Solomon's (1999) measures to assess the three sources of relational uncertainty. Individuals responded to items prefaced by the stem "How certain are you about . . ." (1 = *completely or almost completely uncertain*, 6 = *completely or almost completely*

Table 1
Descriptive Statistics for Fathers and Mothers by Wave

Variable	Wave 1			Wave 2			Wave 3		
	M	(*SD*)	α	*M*	(*SD*)	α	*M*	(*SD*)	α
Depressive symptoms (F)	1.91	(.86)	.75	1.87	(.78)	.76	2.00	(1.00)	.83
Depressive symptoms (M)	2.12	(.99)	.86	2.09	(.95)	.86	2.12	(1.08)	.90
Self uncertainty (F)	1.45	(.78)	.93	1.61	(.80)	.90	1.68	(1.02)	.95
Self uncertainty (M)	1.54	(.90)	.92	1.69	(.95)	.91	1.70	(1.08)	.96
Partner uncertainty (F)	1.63	(.94)	.94	1.87	(1.16)	.97	1.98	(1.28)	.98
Partner uncertainty (M)	1.83	(1.09)	.93	2.00	(1.28)	.96	1.97	(1.37)	.98
Relationship uncertainty (F)	1.59	(.88)	.94	1.80	(1.06)	.94	1.83	(1.15)	.97
Relationship uncertainty (M)	1.63	(1.05)	.95	1.85	(1.11)	.92	1.81	(1.16)	.92
Interference from a partner (F)	1.60	(.73)	.88	1.79	(.74)	.86	1.75	(.79)	.92
Interference from a partner (M)	1.72	(.85)	.88	2.05	(1.13)	.93	1.99	(1.08)	.93
Children's reintegration difficulty (F)	2.43	(1.25)	.82	2.48	(1.50)	.89	2.25	(1.29)	.85
Children's reintegration difficulty (M)	2.40	(1.41)	.82	2.49	(1.48)	.85	2.45	(1.59)	.85

Note. $N = 236$ individuals for Wave 1 (118 fathers and 118 mothers), $n = 225$ individuals for Wave 2 (113 fathers and 112 mothers), and $n = 223$ individuals for Wave 3 (110 fathers and 113 mothers). F = fathers, M = mothers.

certain; all items were reverse scored). *Self uncertainty* contained four items: (a) how you feel about your relationship, (b) your view of your relationship, (c) how important your relationship is to you, and (d) your goals for the future of your relationship ($\chi^2/df = 1.31$, CFI = .997, RMSEA = .034). *Partner uncertainty* involved four parallel items: (a) how your partner feels about your relationship, (b) your partner's view of your relationship, (c) how important your relationship is to your partner, and (d) your partner's goals for the future of your relationship ($\chi^2/df = 2.73$, CFI = .962, RMSEA = .089). Similarly, *relationship uncertainty* included four items: (a) how you can or cannot behave around your partner, (b) the current status of your relationship, (c) the definition of your relationship, and (d) the future of your relationship ($\chi^2/df = 1.84$, CFI = .993, RMSEA = .061).

Despite substantial covariation among the three sources of relational uncertainty at Wave 1 (see Table 2), subsidiary CFA results indicated that they were not unidimensional when (a) the items were loaded together on a first-order factor, $\chi^2/df = 9.65$, CFI = .801, RMSEA = .196, or (b) the three scales were loaded together on a second-order factor, $\chi^2/df = 4.10$, CFI = .933, RMSEA = .117. Accordingly, we followed prior research by examining the three sources of relational uncertainty in separate analyses (Knobloch & Knobloch-Fedders, 2010).

Interference from a partner. Knobloch and Solomon's (2004) 6-item scale measured *interference from a partner* coupled with a seventh item focused on parenting. Individuals responded to items introduced by the phrase "My romantic partner . . ." (a) interferes with the plans I make, (b) causes me to waste time, (c) interferes with my career goals, (d) interferes with the things I need to do each day, (e) makes it harder for me to schedule my activities, (f) interferes with whether I achieve the everyday goals I set for myself (e.g., goals for exercise, diet, entertainment), and (g) makes it harder for me to be a good parent (1 = *strongly disagree*, 6 = *strongly agree*; $\chi^2/df = 2.18$, CFI = .976, RMSEA = .071).

Military children's difficulty with reintegration. Chandra et al.'s (2011) 6-item scale solicited parents' reports of their oldest child's difficulty with reintegration (see also Chandra et al., 2010). The items began with the phrase "Since our family has been reunited after deployment, my oldest child has . . ." (1 = *strongly disagree*, 7 = *strongly agree*). The items were (a) had difficulty getting to know the deployed person again, (b) had trouble adjusting to having the deployed person fit back into the family's routine, (c) had difficulty dealing with the deployed person's mood changes, (d) worried about future separations or deployments, (e) had trouble figuring out how to get help or assistance when he or she needs it, and (f) worried about how my partner and I are getting along ($\chi^2/df = 2.71$, CFI = .953, RMSEA = .094). Because the latter two items are not applicable to very young children, we excluded them in calculating the variable for parents reporting on children younger than 3 years of age.

Results

Preliminary Analyses

We began by investigating demographic characteristics of parents and children at Wave 1. Paired samples *t* tests indicated no differences between fathers versus mothers for any of the independent or dependent variables. Similarly, no effects were apparent for children's gender, children's age, or parents' first deployment versus multiple deployment status in independent samples *t* tests and correlational analyses conducted separately for fathers and mothers.

Next, we calculated zero-order correlations among the substantive variables at Wave 1. In general, among both fathers and mothers, results indicated positive associations among the independent variables and positive associations between the independent variables and children's difficulty with reintegration (see Table 2). We also computed zero-order correlations at Wave 1 between three time-based variables (relationship length, deployment length, and number of days since reunion) and the substantive variables. No associations were apparent for fathers. For mothers, the number of days since reunion was positively correlated with partner uncertainty, $r = .22$, $p = .020$, and interference from a partner, $r = .18$, $p = .046$.

Substantive Analyses

To examine the trajectory of military children's reintegration difficulty (RQ1), we estimated an unconditional no-predictors dyadic growth curve model using structural equation modeling. We modeled the trajectories of children's reintegration difficulty reported by fathers and mothers, and we correlated the intercepts and slopes across partners. We also correlated the residuals of the observed variables across partners at each wave (per Kenny, Kashy, & Cook, 2006). The slope variance for mothers could not be estimated because it had a negative variance parameter, so we

Table 2
Wave 1 Correlations

Variable	V1	V2	V3	V4	V5	V6
V1: Depressive symptoms	.23*	.20*	.25**	.26**	.21*	.31**
V2: Self uncertainty	.32***	.40***	.52***	.83***	.60***	.24**
V3: Partner uncertainty	.14	.67***	.32***	.71***	.45***	.14
V4: Relationship uncertainty	.34***	.92***	.68***	.54***	.50***	.25**
V5: Interference from a partner	.22*	.36***	.44***	.37***	.35***	.29**
V6: Children's reintegration difficulty	.36***	.19*	.18*	.27**	.36***	.44***

Note. $N = 118$ fathers, mothers, or couples. Wave 1 bivariate correlations for fathers appear above the diagonal, Wave 1 bivariate correlations for mothers appear below the diagonal, and Wave 1 within-couple correlations appear on the diagonal and are underlined.
* $p < .05$. ** $p < .01$. *** $p < .001$.

omitted the correlations with the slope for mothers, which resulted in appropriate parameters.[2]

Results from the unconditional model are reported in Table 3. Consistent with the descriptive statistics (see Table 1), the mean intercept values indicated that fathers and mothers reported fairly low levels of children's reintegration difficulty on average. The mean slope values revealed no systematic change across time for children's reintegration difficulty reported by fathers or mothers. However, the variance parameters showed a statistically significant amount of variation in the intercepts (i.e., average levels of children's reintegration difficulty) for both fathers and mothers at Wave 1. The variance parameters also indicated a statistically significant amount of variation in the slope of children's reintegration difficulty reported by fathers. In sum, the data for RQ1 demonstrated that (a) the growth curve initial values were heterogeneous for both fathers and mothers, (b) the trajectory of children's reintegration difficulty reported by fathers and mothers was flat across time (i.e., not different from zero), and (c) the flat trajectory was heterogeneous across time among fathers but homogeneous across time among mothers.

Next, we added four covariates: child gender, child age, deployment length, and days since reunion at Wave 1. Similar to the unconditional model, we did not include the predictor paths and correlations with the slope for mothers. One effect emerged: Children's age was positively correlated with the intercept of children's reintegration difficulty reported by fathers ($\beta = .22$, $p = .035$). The covariate-only model explained a small amount of variance in the intercept for fathers ($R^2 = .08$), the slope for fathers ($R^2 = .05$), and the intercept for mothers ($R^2 = .07$).

A final step involved entering predictors to test hypotheses linking parental depressive symptoms (H1), relational uncertainty (H2), and interference from a partner (H3) to military children's reintegration difficulty (see Figure 1). Following previous work (Knobloch & Theiss, 2010), we examined people's Wave 1 depressive symptoms paired with one Wave 1 relationship parameter in separate models to avoid multicollinearity.[3] We treated the independent variables as actor effects predicting people's own reports of children's reintegration difficulty. As in the prior models, we excluded the predictor paths and correlations with the slope for mothers.

The independent variables explained variance in the intercepts but not the slopes (see Table 4).[4] Consistent with H1, the Wave 1 depressive symptoms of fathers and mothers predicted the intercepts of their reports of children's reintegration difficulty across all analyses. H2 received partial support. No association was apparent for the Wave 1 self uncertainty of mothers or the Wave 1 partner uncertainty of fathers and mothers. On the other hand, the Wave 1 self uncertainty and relationship uncertainty of fathers predicted the intercepts of their reports of children's reintegration difficulty, and a similar association for the Wave 1 relationship uncertainty of mothers approached statistical significance ($p = .068$). As anticipated by H3, the Wave 1 interference from a partner experienced by fathers and mothers predicted the intercepts of their reports of children's reintegration difficulty. R^2 for the intercepts ranged from .14 to .31.[5]

Discussion

Our study utilized the logic of the relational turbulence model, coupled with research linking marital dynamics with children's outcomes, to test hypotheses about the well-being of military children during the postdeployment transition. Parents reported relatively low levels of military children's reintegration difficulty overall (RQ1), but as hypothesized, parents who experienced depressive symptoms (H1), relationship uncertainty (H2), and interference from a partner (H3) indicated that their children had more difficulty with reintegration. Parents reported that military children's reintegration difficulty was relatively stable across the first 3 months after homecoming, and none of the covariates or independent variables accounted for changes over time. We consider the ramifications of these results in the paragraphs that follow.

Implications of the Findings

Given the lack of longitudinal research examining how military children fare during the transition from deployment to reunion (e.g., Lester & Flake, 2013; Park, 2011), our data have descriptive value for illuminating the trajectory of parents' reports of military children's reintegration difficulty across the first 3 months after homecoming. Both fathers and mothers reported relative stability in their oldest child's difficulty with reintegration from one month to the next (RQ1). Moreover, this relatively flat trajectory of military children's reintegration difficulty showed only modest variability among fathers and no variability among mothers across the three waves. On the other hand, our results revealed heterogeneity in the initial levels of military children's reintegration difficulty reported by both fathers and mothers.

Caution is prudent when interpreting the reports of parents, but if corroborated by data from military children themselves, our findings have two implications for clinical practice. First, with respect to the timing of intervention, clinicians should offer support services very early upon reunion because military children's reintegration difficulty appears to be quite stable and enduring across the 3 months after homecoming. Second, children's age emerged as a risk factor, with fathers reporting that older children fared worse than younger children. These covariate results complement previous work (Barker & Berry, 2009; Chandra et al., 2010; Lipari et al., 2011) and imply that support services should target older children for maximum effectiveness.

Although the relational turbulence model privileges relationship dynamics in theorizing about people's experience of upheaval during times of transition (Solomon & Theiss, 2011), research

[2] In an unconditional single growth curve model, the slope variance for mothers was not different from zero. In the unconditional dyadic growth curve model, the negative slope variance parameter for mothers appeared to be due to sampling fluctuations because no difference emerged between a freely estimated model and a constrained model in which the slope variance for mothers was set to zero, χ^2 difference (1) = 0.19, ns (see Chen, Bollen, Paxton, Curran, & Kirby, 2001).

[3] According to Menard (2003), variance inflation factor (VIF) values greater than 5.00 indicate multicollinearity (see also Allison, 1999). VIF values for analyses containing all of the independent variables were 5.20 for fathers and 7.38 for mothers.

[4] The hypothesized findings were the same when all items were used to compute the measure of children's reintegration difficulty for parents reporting on children under the age of 3. Moreover, the hypothesized results were identical when we examined the subset of parents reporting on children of minor age (18 years old or younger; $n = 114$ military couples).

[5] We also investigated the subsample of returning service members who were fathers and at-home partners who were mothers ($n = 114$ couples; excluding three couples in which the mother deployed and one couple in which both parents deployed). Findings for the hypothesized associations were identical.

Table 3
Unconditional Dyadic Growth Curve Model for Military Children's Reintegration Difficulty

Parameter	Children's reintegration difficulty
Means	
Father intercept	2.45***
Mother intercept	2.42***
Father slope	−.08
Mother slope	.02
Variances	
Father intercept	1.33***
Mother intercept	1.34***
Father slope	.31**
Mother slope	.05
Correlations	
Father intercept with mother intercept	.52***
Father intercept with father slope	−.48*
Mother intercept with father slope	−.30*

Note. $N = 118$ couples. Model fit: $\chi^2 / df = 2.09$, CFI = .969, RMSEA = .096. The model omitted the correlations with the slope for mothers.
* $p < .05$. ** $p < .01$. *** $p < .001$.

employing the model in the military context also has attended to depressive symptoms given the critical importance of mental health within this population (e.g., Knobloch & Theiss, 2011). Our data revealed that the depressive symptoms of both fathers and mothers predicted their reports of their children's reintegration difficulty across all models (H1). Our results for H1 cohere with work showing that the well-being of military parents is a key predictor of outcomes for military children across the deployment cycle (e.g., Barker & Berry, 2009; Flake et al., 2009). They also underscore the vital need for mental health services for military families, given that both returning service members and at-home partners are vulnerable to depressive symptoms during the postdeployment transition (Gorman, Blow, Ames, & Reed, 2011; Kim, Thomas, Wilk, Castro, & Hoge, 2010; Milliken, Auchterlonie, & Hoge, 2007).

The growing body of work tying the depressive symptoms of military couples to the welfare of military children (e.g., Blow et al., 2013; Chandra et al., 2010; Lester et al., 2010) may explain the sentiments expressed by military youth when interviewed about their experiences of homecoming. Military youth describe feeling pressured to get reacquainted with the returning service member (Mmari et al., 2009), confused about how to incorporate him or her back into family life (Huebner et al., 2007), disappointed that the long-awaited reunion failed to meet their expectations (Knobloch et al., 2014), and dismayed by how irritable the returning service member was upon homecoming (Knobloch et al., 2014). Our findings for H1, viewed in this light, hint that the clash between idyllic images and actual experiences may be particularly jarring for military families in which one or both parents suffer from depressive symptoms.

The relational turbulence model proposes that transitions are challenging because they raise questions about the nature of the relationship and trigger disruptions to routines (Solomon et al., 2010). Our application of the model's logic to the postdeployment transition provided modest support for relational uncertainty (H2) and full support for interference from a partner (H3) as predictors of parents' reports of military children's reintegration difficulty. Beyond the variance explained by parental depressive symptoms, higher mean levels of self uncertainty for fathers, relationship uncertainty for both fathers and mothers, and interference from a partner for both fathers and mothers predicted their reports of their children's reintegration difficulty.

On a micro level, our findings reveal that the magnitude of military parents' relationship uncertainty and interference from a partner—but not change over time—corresponds with their reports of their children's struggles acclimating to the homecoming of a service member. On a macro level, our results pave the way for conceptual and empirical advances in understanding the mechanisms by which this spillover occurs. Perhaps military youth are more susceptible to reintegration difficulty because relational uncertainty and interference from a partner generate communication problems between parents that are aired in front of the children. Both relational uncertainty and interference from a partner correspond with less open and more aggressive exchanges among military couples (Theiss & Knobloch, 2013), which could create a volatile family environment that is stressful for military children. A second possibility is that military couples are preoccupied by the upheaval sparked by relational uncertainty and interference from a partner (e.g., Solomon et al., 2016), which could constrain their ability to attend to their children's needs. Or perhaps the turmoil generated by relational uncertainty and interference from a partner diminishes the emotional availability of military parents (e.g., Sturge-Apple, Davies, & Cummings, 2006), which could prevent them from offering adequate instrumental and emotional support to their children. Our initial evidence linking the turmoil of military couples with the well-being of military children opens the door for additional theory building and testing.

More generally, our study offers pioneering evidence that the relational turbulence model is relevant to family adjustment. Whereas the model was designed to account for the upheaval that romantic couples encounter during times of transition (Solomon et al., 2010), our study hints that the turmoil experienced by romantic couples may extend beyond their own outcomes to the outcomes of their children. Perhaps relational uncertainty and interference from a partner reverberate through the romantic dyad to generate upheaval for the whole family. We see potential for the model to expand its reach by considering proximal outcomes for romantic couples alongside distal outcomes for other family members. For example, does the relational turbulence of romantic couples spill over to how grandparents welcome a child's arrival (e.g., Dun, 2010), how family members grapple with a parent's medical condition (e.g., Lieberman & Fisher, 1999), or how adult children cope with a late-life parental divorce (e.g., Mikucki-Enyart, Wilder, & Barber, 2016)? If so, then the relational turbulence model may generalize beyond romantic couples to the larger family system.

Our results also suggest guidelines for clinicians working to preserve the well-being of military families during the postdeployment transition. Namely, when and to whom should support services be offered? Our findings for RQ1 imply that military family life professionals should not delay offering assistance because military children do not appear to experience the honeymoon period thought to exist for adults (e.g., Milliken et al., 2007; Pincus et al., 2001), but instead may experience stable levels of reintegration difficulty. Our covariate findings hint that older children

Table 4
Standardized Coefficients of Conditional Dyadic Growth Curve Models for Military Children's Reintegration Difficulty

Model	Children's reintegration difficulty		
	Father intercept	Father slope	Mother intercept
Self uncertainty model			
Deployment length	.12	.03	.16
Days since reunion at Wave 1	.02	.03	.09
Child's sex	.08	−.19	.04
Child's age	.19*	.06	.15
Depressive symptoms at Wave 1	.22*	−.16	.36***
Self uncertainty at Wave 1	.22*	.12	.08
R^2	.18	.07	.22
Partner uncertainty model			
Deployment length	.13	.04	.16
Days since reunion at Wave 1	.04	.03	.09
Child's sex	.07	−.20	.03
Child's age	.19	.06	.14
Depressive symptoms at Wave 1	.24**	−.19	.37***
Partner uncertainty at Wave 1	.10	.20	.07
R^2	.14	.10	.22
Relationship uncertainty model			
Deployment length	.14	.03	.16
Days since reunion at Wave 1	.04	.04	.07
Child's sex	.08	−.19	.06
Child's age	.20*	.06	.16
Depressive symptoms at Wave 1	.21*	−.17	.33***
Relationship uncertainty at Wave 1	.24**	.07	.18†
R^2	.19	.07	.25
Interference from a partner model			
Deployment length	.10	.01	.13
Days since reunion at Wave 1	.02	.03	.04
Child's sex	.08	−.17	.04
Child's age	.18*	.06	.14
Depressive symptoms at Wave 1	.22**	−.15	.32***
Interference from a partner at Wave 1	.22*	.06	.31***
R^2	.18	.05	.31

Note. $N = 118$ couples. The models excluded the predictor paths and correlations with the slope for mothers.
† $p = .068$. * $p < .05$. ** $p < .01$. *** $p < .001$.

may be particularly vulnerable to reintegration difficulty, commensurate with age as a marker of risk highlighted by prior research (Chandra et al., 2010; Lipari et al., 2011). Our substantive analyses demonstrate that when parents grapple with depressive symptoms (H1), relationship uncertainty (H2), and interference from a partner (H3), they report that their children adjust to reunion less effectively. Perhaps military couples who get help addressing their questions about the relationship and averting goal hindrance could draw benefits that extend beyond their romantic relationship to the well-being of their children. More longitudinal data are needed to tease apart the direction of the effect given evidence of bidirectional pathways between marital dynamics and children's maladjustment (Cui, Donnellan, & Conger, 2007), but it is plausible that the relationship between military parents could serve as a nexus for intervention efforts to bolster the welfare of military children.

Strengths, Limitations, and Directions for Future Research

The conclusions drawn from our data are contingent upon the strengths and limitations of our investigation. One strength is that our study was driven by theory. Research on how military children experience the cycle of deployment and reunion tends to be descriptive, prompting calls by MacDermid Wadsworth (2010) and Park (2011) for scholars to advance theory to explain military children's outcomes. Indeed, our findings suggest the relational turbulence model has promise for illuminating spillover from parental experiences to their reports of military children's reintegration difficulty. A second strength is that we collected data from both parents. Because most studies focus on at-home caregivers (typically mothers), the literature has less to say about the perspectives of returning service members (typically fathers; Davis et al., 2015), and still less to say about the convergence between parents' reports of military children's reintegration difficulty. Our dyadic data showed, for example, that self uncertainty predicted fathers' reports (but not mothers' reports) of military children's reintegration difficulty. A third strength is our longitudinal research design. Collecting observations once per month for 3 consecutive months permitted us to map the trajectory of parents' reports of military children's reintegration difficulty over time.

Limitations are important to consider as well. First, reporter bias in our dependent variable is a possibility because we relied on the observations of military parents to gauge their children's reintegration difficulty. Although the reports of military parents and children share moderate overlap (Wilson et al., 2011), the potential for reporter bias is a particular concern because individuals with depression are susceptible to negativity in their appraisals of interpersonal circumstances (e.g., Gotlib & Krasnoperova, 1998). Accordingly, our findings are constrained by the extent to which military children's perceptions of their own reintegration difficulty diverge from their parents' reports (e.g., Card et al., 2011; Chandra et al., 2010). Second, our study began at reunion and spanned 3 months. Our inability to identify predictors of change over time may stem from the short observation period coupled with a lack of comparison data before and during deployment (e.g., Pincus et al., 2001). We encourage scholars to evaluate the veracity of our findings by soliciting responses from military children directly and by tracking military families across the full trajectory of deployment.

Other limitations involve our sample. The military couples in our study were predominately Caucasian, affiliated with the Army or the Army National Guard, and contained a male returning service member and a female civilian spouse. Additional research is necessary to examine whether our findings translate to more heterogeneous military families. Our participants also appeared to be functioning well given the low levels of upheaval they reported. Accordingly, our data do not speak to whether the relational turbulence model accounts for the reintegration difficulty of military children within families experiencing more severe mental health and/or relationship problems. Finally, our sample included parents reporting on the reintegration difficulty of military children who ranged in age from infants to emerging adults, but the measure of children's reintegration difficulty we employed may be best suited to adolescents (e.g., Chandra et al., 2011). We look forward to additional work that attends to developmentally specific aspects of military children's reintegration difficulty.

Beyond research that addresses the limitations of our investigation, we encourage future work that advances in new directions. Evidence that the cycle of deployment and reunion has implications for military children's health (Cederbaum et al., 2014; Hisle-Gorman et al., 2015) and academic progress (Engel et al., 2010) points to the need for scholars to conceptualize reintegration difficulty using more comprehensive markers. Moreover, our study highlighted features of romantic relationships as predictors of parents' reports of military children's reintegration difficulty, but other factors are likely to play a role. At the top of the list are parental posttraumatic stress and anxiety, which are prominent among military couples during the postdeployment transition (Bonanno et al., 2012; Gorman et al., 2011; Kim et al., 2010). The combat-related trauma experienced by the deployed parent has important implications for children's adjustment as well (Herzog & Everson, 2007). Other candidates include the quality and frequency of communication between the service member and the child during deployment (Houston, Pfefferbaum, Sherman, Melson, & Brand, 2013). Scholarship that attends to the interpersonal dynamics of military couples, alongside other relevant family and military experiences, is important for supporting the well-being of military children during the transition from deployment to reunion.

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Topic Avoidance about Deployment upon Reunion: Applying the Relational Turbulence Model

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ABSTRACT
This study uses the logic of the relational turbulence model to examine the reluctance of military couples to talk about their deployment experiences during reunion. A total of 235 individuals (118 returning service members, 117 at-home partners) completed an online survey within 6 months of homecoming. People experiencing more relational uncertainty and interference from a partner upon reunion reported more topic avoidance about deployment. Relational uncertainty and interference from a partner were especially strong predictors of topic avoidance about deployment for individuals who were highly satisfied with their relationship. The findings have implications for both theory and practice.

KEYWORDS
Communication; deployment; interference from a partner; military couples; postdeployment transition; reintegration; relational uncertainty; relationship satisfaction; reunion; topic avoidance

Staying connected during deployment can be a source of stress for both military personnel and at-home partners (Cigrang et al., 2014; Maguire, Heinemann-LaFave, & Sahlstein, 2013; Merolla, 2010). The ability of military couples to keep in touch across the miles can be plagued by logistical difficulties such as technology failures, time zone differences, connectivity outages, operational security regulations, expeditions to remote locations, and mission requirements to go dark (Carter & Renshaw, 2016; Greene, Buckman, Dandeker, & Greenberg, 2010). Even when the logistics fall into place, service members and at-home partners may make strategic decisions to withhold information from each other to prevent quarrels, maintain peace, stave off worry, protect the service member from distraction, and preserve privacy (Joseph & Afifi, 2010; McNulty, 2005; Rossetto, 2013). All of these logistic and strategic factors make communication more challenging during deployment, but they also make getting reacquainted more difficult during reunion.

Topic avoidance about deployment occurs when military couples purposefully refrain from talking about their deployment experiences (Knobloch, Ebata, McGlaughlin, & Theiss, 2013; Knobloch, Theiss, & Wehrman, 2015). For example, service members report avoiding talking with their romantic partner during deployment about sensitive issues such as restricted military information, mission-related danger, their feelings and mental health, the status of romantic and family relationships, deaths and injuries in theatre, sex and fidelity, money, and reunion concerns (Knobloch et al., 2015). Although disclosing information and expressing emotion can foster closeness, returning service members and at-home partners may decide to conceal information about deployment upon reunion to protect themselves, their partner, and/or their relationship (e.g., Knobloch, Ebata, McGlaughlin, & Theiss, 2013; Rossetto, 2013; Sahlstein, Maguire, & Timmerman, 2009).

Distinguishing the interpersonal factors that discourage recently reunited military couples from discussing their deployment experiences is imperative for helping them transition smoothly. Indeed, research shows that topic avoidance can be stressful for military couples (Frisby, Byrnes, Mansson, Booth-Butterfield, & Birmingham, 2011) and can correspond with less physical and mental well-being (Joseph & Afifi, 2010). Although withholding information can be functional in certain circumstances (Afifi & Guerrero, 2000; Roloff & Ifert, 2000), topic avoidance tends to be dissatisfying within romantic relationships (Caughlin & Afifi, 2004; Caughlin & Golish, 2002; Donovan-Kicken & Caughlin, 2010). The correspondence between topic avoidance and people's physical, mental, and relational health highlights the importance of understanding the relationship parameters that predict topic avoidance about deployment upon reunion. Moreover, scholars have called for research to inform evidence-based guidelines for helping military couples communicate effectively during the transition from deployment to reintegration

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(e.g., Bowling & Sherman, 2008; Carter & Renshaw, 2016).

The *relational turbulence model* is a theoretical framework that may supply an explanation for why returning service members and at-home partners avoid talking about deployment upon reunion. The model was formulated to account for why romantic partners experience upheaval during times of transition (Solomon, Weber, & Steuber, 2010), and it has illuminated people's experiences when relationships are in flux as a result of the arrival of a child (Theiss, Estlein, & Weber, 2013), the shift to an empty nest (Nagy & Theiss, 2013), and the challenges posed by health concerns such as breast cancer (Weber & Solomon, 2008), infertility (Steuber & Solomon, 2008), and depression (Knobloch & Delaney, 2012). Recently, the model has shed light on how military couples navigate the transition from deployment to reunion (Knobloch, Ebata, McGlaughlin, & Ogolsky, 2013; Knobloch, Ebata, McGlaughlin, & Theiss, 2013; Theiss & Knobloch, 2013). Our goal is to employ the model's logic to evaluate why returning service members and at-home partners may be unwilling to talk about their deployment experiences after homecoming.

A relational turbulence model of topic avoidance about deployment

The relational turbulence model proposes that times of transition pose unique challenges for sustaining interpersonal ties (Solomon & Theiss, 2011; Solomon et al., 2010). The model defines *transitions* as intervals of discontinuity punctuating otherwise stable periods that provide occasions for people to adjust their roles, recalibrate their feelings, and restructure their interactions (Knobloch, 2007; Solomon & Theiss, 2011). During the postdeployment transition, for example, returning service members and at-home partners need to reestablish their connection, acclimate to communicating in person, decide how to distribute decision-making power, and settle into a routine (Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; Karakurt, Christiansen, MacDermid Wadsworth, & Weiss, 2013). Returning National Guard and reserve service members face the added tasks of readjusting to their civilian community and civilian employment (Faber et al., 2008). The model identifies two explanations for turmoil during times of transition: relational uncertainty and interference from a partner (Solomon & Theiss, 2011; Solomon et al., 2010). We elaborate on both of these constructs in the subsections that follow.

Relational uncertainty as a predictor of topic avoidance about deployment

The relational turbulence model nominates relational uncertainty as an intrapersonal explanation for upheaval during times of transition (Knobloch, 2015; Solomon & Theiss, 2011). *Relational uncertainty* occurs when people are unsure about the nature of involvement in their relationship (Knobloch, 2010; Knobloch & Satterlee, 2009). It is an umbrella construct that emerges from three sources. *Self uncertainty* denotes the questions people have about their own participation in a relationship, *partner uncertainty* indexes the questions they have about their partner's engagement in the relationship, and *relationship uncertainty* references the questions they have about the status of the relationship itself (Knobloch & Solomon, 1999). Whereas self uncertainty ("How certain am I about how I feel about this relationship?") and partner uncertainty ("How certain am I about how my partner feels about this relationship?") pertain to individuals, relationship uncertainty exists at a higher order of abstraction because it focuses on the dyad as a unit ("How certain am I about the future of this relationship?"). The three sources of relational uncertainty share both conceptual and empirical overlap, but they are distinct rather than redundant constructs (Knobloch, 2010).

According to the relational turbulence model, people grappling with relational uncertainty during times of transition are susceptible to upheaval because they lack information to interpret the changes occurring around them (Knobloch & McAninch, 2014; Solomon & Theiss, 2011). Relational uncertainty, at its core, leaves individuals without adequate knowledge to draw definitive conclusions about their shifting circumstances (Knobloch, 2010) and to communicate effectively (Knobloch & Satterlee, 2009). The postdeployment transition is likely to spark relational uncertainty for military couples (Knobloch, Ebata, McGlaughlin, & Theiss, 2013). Both returning service members and at-home partners may be unsure how to get reacquainted, adjust to personality changes, express their emotions, and renew intimacy (Bowling & Sherman, 2008; Knobloch, Ebata, McGlaughlin, & Ogolsky, 2013; Sahlstein et al., 2009). Consequently, an extension of the relational turbulence model to reintegration following deployment implies that relational uncertainty may emerge during the transition and give rise to turmoil for military couples.

Extensive research documents a link between relational uncertainty and communication difficulties for both civilian couples and military couples. For example, civilian couples experiencing relational uncertainty do less to maintain their relationship (Malachowski &

Dillow 2011), produce less fluent messages (Knobloch, 2006), judge conversations to be more threatening (Knobloch, Miller, Bond, & Mannone, 2007), and are less willing to discuss irritations (Theiss & Solomon, 2006). They also engage in more topic avoidance (Knobloch & Carpenter-Theune, 2004; Knobloch, Sharabi, Delaney, & Suranne, 2016; Theiss & Nagy, 2012). Similarly, recently reunited military couples grappling with questions about reintegration report more topic avoidance about deployment, reunion, and their relationship (Knobloch, Ebata, McGlaughlin, & Theiss, 2013). Thus, we propose a first hypothesis that is based on the reasoning of the relational turbulence model and extant empirical evidence:

> Hypothesis 1: Relational uncertainty is positively associated with people's reports of topic avoidance about deployment upon reunion.

Interference from a partner as a predictor of topic avoidance about deployment

The relational turbulence model designates interference from a partner as an interpersonal source of turmoil during transitions (Knobloch, 2015; Solomon & Theiss, 2011). *Interference from a partner* arises when a person's everyday goals are hindered by a partner (Berscheid, 1983; Knobloch & Solomon, 2004). Romantic relationships progress as people give each other influence over their daily lives, but missteps can arise as partners integrate and re-integrate their routines over time (Solomon et al., 2010). Interference from a partner can be intentional ("You got rid of my favorite sweatshirt?") or unintentional ("Your tossing and turning kept me up last night!"), but it blocks an individual from accomplishing personal goals, routines, and objectives (Knobloch, 2008b; Solomon & Theiss, 2011).

The model argues that individuals grow accustomed to habitual sequences of behavior in relationships over time, but an abrupt change in circumstances can unsettle routines that had been straightforward (Berscheid, 1983; Solomon et al., 2010). More simply, times of transition carry substantial opportunities for interference from a partner (Knobloch & Solomon, 2004; Solomon & Theiss, 2011). The shift from deployment to reunion is a prime example. Returning service members have to move from a mission-centric routine to a domestic-centric routine, at-home partners have to adapt their schedule to incorporate the returnee, and all family members have to recalibrate their division of labor, control, information, and responsibility (Bowling & Sherman, 2008; Faber et al., 2008; Karakurt et al., 2013). Accordingly, military couples may be susceptible to interfering with each other's everyday goals as they work to intertwine their lives upon reunion following deployment.

A growing body of research suggests that interference from a partner makes communication challenging during times of transition. Within civilian relationships, individuals experiencing interference from a partner communicate less fluently (Knobloch, 2008b), display less affiliation in conversation (Knobloch & Schmelzer, 2008), and perceive less affiliation in their partner's messages (Knobloch, 2008b). Military personnel experiencing interference from a partner during the postdeployment transition report communicating in less open and more aggressive ways (Theiss & Knobloch, 2013). Notably, the literature has less to say about the link between interference from a partner and topic avoidance. Although one study found that interference from a partner did not predict topic avoidance within courtship (Theiss & Nagy, 2012), another investigation observed that interference from a partner corresponded with topic avoidance about weight loss goals among dating and married civilian couples (Theiss, Carpenter, & Cox, 2015). We are not aware of any work that has examined interference from a partner as a predictor of topic avoidance among military couples, but the logic of the relational turbulence model suggests that interference from a partner can make talking about sensitive topics more threatening (Theiss & Estlein, 2014; Theiss & Nagy, 2013), which can motivate people to avoid potentially uncomfortable conversations (Theiss & Estlein, 2014). A second hypothesis evaluates our reasoning:

> Hypothesis 2: Interference from a partner is positively associated with people's reports of topic avoidance about deployment upon reunion.

Relationship satisfaction as a moderator

To this point, our hypotheses formalize the logic of the relational turbulence model that military couples may be reluctant to talk about their deployment experiences upon reunion because they are experiencing relational uncertainty (Hypothesis 1) and interference from a partner (Hypothesis 2). A remaining question involves the role of people's satisfaction with their relationship. *Relationship satisfaction* refers to how much enjoyment, happiness, and pleasure individuals derive from a relationship (e.g., Fincham & Beach, 2006). Not surprisingly, relationship satisfaction corresponds with the three core constructs in this study: individuals tend to be less satisfied with their relationship when they are grappling with relational uncertainty (Dainton, 2003; Knobloch, 2008a), encountering interference from a partner (Theiss et al.,

2013), and engaging in topic avoidance (Caughlin & Afifi, 2004; Donovan-Kicken & Caughlin, 2010). Given these conceptual and empirical ties, a potential critique of the relational turbulence model is that relationship satisfaction could subsume the associations that relational uncertainty and interference from a partner share with topic avoidance about deployment. If so, then practitioners seeking to help military couples could maximize resources by targeting people's satisfaction with their relationship and ignoring relational uncertainty and interference from a partner.

A more plausible possibility is that relationship satisfaction could moderate the associations implied by the relational turbulence model (i.e., the predictive power of relational uncertainty and interference from a partner could vary by people's degree of relationship satisfaction). Stated differently, relational uncertainty and interference from a partner could share stronger associations with topic avoidance about deployment for subgroups of military couples who are highly satisfied or highly dissatisfied. On one hand, relational uncertainty and interference from a partner may prompt more evasiveness among highly satisfied military couples because they are not accustomed to entertaining questions and encountering hindrance (e.g., Faber et al., 2008; Sahlstein et al., 2009). On the other hand, relational uncertainty and interference from a partner may spark more evasiveness among highly dissatisfied couples because they are not willing to risk further tension, conflict, and discord (e.g., Knobloch & Satterlee, 2009). Either way, evidence of moderation would mean that practitioners could tailor interventions with the relational turbulence model to people's degree of relationship satisfaction. We submit a research question to examine relationship satisfaction as a moderator:

> Research Question 1: Does relationship satisfaction moderate the associations that relational uncertainty (Research Question 1a) and interference from a partner (Research Question 1b) share with people's reports of topic avoidance about deployment upon reunion?

Method

Our research method was an online survey. U.S. service members and at-home partners were recruited by (a) sending emails to military family life professionals in all 50 states, (b) circulating flyers at reintegration workshops, and (c) posting information on social media and online forums oriented toward military families. To be eligible to participate, individuals had to be involved in an ongoing romantic relationship in which they and/or their romantic partner had returned home from deployment during the past six months. Eligibility was restricted to one person per couple. Upon completion of the online survey, we mailed individuals a US$15 gift card from a national retailer to thank them for their participation.

The recruitment procedures solicited data from 235 people (100 men, 135 women) residing in 30 U.S. states. Of these, 128 individuals (54%) were service members (98 men, 30 women), and 107 individuals (46%) were civilian partners (2 men, 105 women). The group of service members included 25 participants who were part of a dual-career military couple. In terms of deployment, 117 service members had returned home from deployment during the past six months (98 men, 19 women), and 118 participants were at-home partners (2 men, 116 women). The group of service members returning home from deployment included seven people who were part of a dual-deployed couple.

Participants were Caucasian (85%), African American (6%), Hispanic (6%), Asian (1%), Native American (1%), and other (1%). They ranged in age from 19 to 55 years old ($M = 32.95$ years, $SD = 8.53$ years). Their romantic relationship status was married (82%), engaged to be married (6%), seriously dating (9%), or casually dating (3%). The length of their romantic relationship averaged 9.59 years ($SD = 7.25$ years). Most participants lived in the same residence as their romantic partner (89%) and were parents (59%).

The military branch for the service members included the U.S. National Guard (59%), Army (32%), Navy (2%), Air Force (3%), and Marines (4%). Their military status was active duty (51%), reserves (38%), inactive ready reserves (4%), discharged (1%), retired (1%), or other (5%). On average, returning service members had been deployed for 11.40 months ($SD = 2.57$ months) and had been home for 3.16 months ($SD = 2.12$ months).

Data collection procedures

Participants completed an online survey containing measures for this study and for a larger project (Knobloch & Theiss, 2012; Theiss & Knobloch, 2014). The online survey contained three modules taking approximately 30 min to complete. The first module provided informed consent text, the second module solicited demographic information, and the third module contained a series of open-ended and closed-ended items.

Measures

All of the multi-item scales were evaluated by confirmatory factor analysis to verify their unidimensional structure (Brown, 2015; Kline, 2011). The criteria for model fit were set at $\chi^2/df < 3.00$, comparative fit index [CFI] $> .95$, and root mean square error of approximation

(RMSEA) <.08 (Brown, 2015; Browne & Cudeck, 1993; Kline, 2011). Then, the variables were calculated by averaging the scores for the unidimensional items.

Relationship satisfaction

Individuals reported their relationship satisfaction using a scale by Fletcher, Simpson, and Thomas (2000). Participants responded to three items on a scale ranging from 1 (*not at all*) to 7 (*extremely*): (a) How satisfied are you with your relationship?, (b) How content are you with your relationship?, and (c) How happy are you with your relationship? ($M = 5.46$, $SD = 1.52$; $\alpha = .96$; $\chi^2/df = 1.98$, CFI = .99, RMSEA < .07.

Relational uncertainty

Participants completed a brief version of Knobloch and Solomon's (1999) scale with four items measuring each of the three sources of relational uncertainty. Confirmatory factor analytic results indicated that self, partner, and relationship uncertainty did not form a unidimensional 12-item factor ($\chi^2/df = 5.65$, CFI = .88, RMSEA = .14), which is consistent with conceptual explications of the three sources as distinct constructs (Knobloch & Solomon, 1999) and findings from previous measurement analyses (Knobloch, 2010). Accordingly, we followed prior work in treating self, partner, and relationship uncertainty as separate variables (Knobloch, 2006; Theiss & Knobloch, 2013; Theiss & Nagy, 2012).

Participants indicated their response to items completing the stem, "How certain are you about …?" The scale anchors ranged from 1 (*completely or almost completely uncertain*) to 6 (*completely or almost completely certain*). The responses were reverse-scored so that larger values denoted more relational uncertainty. *Self uncertainty* included the items (a) how you feel about your relationship, (b) your goals for the future of your relationship, (c) your view of your relationship, and (d) how important your relationship is to you ($M = 2.00$, $SD = 1.22$, $\alpha = .93$; $\chi^2/df = 1.81$, CFI = .99, RMSEA = .06). *Partner uncertainty* contained the items (a) how your partner feels about your relationship, (b) your partner's goals for the future of your relationship, (c) your partner's view of your relationship, and (d) how important your relationship is to your partner ($M = 2.05$, $SD = 1.40$, $\alpha = .96$; $\chi^2/df = 1.66$, CFI = .99, RMSEA = .05). *Relationship uncertainty* encompassed the items (a) the current status of your relationship, (b) how you can or cannot behave around your partner, (c) the definition of your relationship, and (d) the future of your relationship ($M = 2.07$, $SD = 1.34$, $\alpha = .94$; $\chi^2/df = 1.98$, CFI = .99, RMSEA < .07).

Interference from a partner

Individuals responded to a brief version of Knobloch and Solomon's (2004) measure to report their perceptions of interference from a partner. Participants indicated their agreement with six items using a scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*): (a) my partner interferes with the plans I make, (b) my partner causes me to waste time, (c) my partner interferes with my career goals, (d) my partner interferes with the things I need to do each day, (e) my partner interferes with whether I achieve the everyday goals I set for myself (e.g., goals for exercise, diet, entertainment), and (f) my partner makes it harder for me to schedule my activities ($M = 2.22$, $SD = 1.14$, $\alpha = .90$; $\chi^2/df = 2.36$, CFI = .97, RMSEA < .08).

Topic avoidance about deployment

Following the format of the topic avoidance scale by Afifi and Burgoon (1998), we wrote a brief measure of topic avoidance about deployment for this study. Participants completed items asking them to rate "how much you avoided discussing the following topics with your partner during the past week" (1 = *never avoided discussing*, 7 = *always avoided discussing*). Three items formed a unidimensional scale: (a) deployment, (b) what happened while you/your partner were deployed, and (c) your experiences during deployment ($M = 2.58$, $SD = 1.76$, $\alpha = .86$; $\chi^2/df = 0.94$, CFI > .99, RMSEA < .01).

Results

Preliminary analyses

In a first preliminary analysis, we conducted independent-samples *t* tests to evaluate group differences. Results indicated no differences between men ($n = 100$) versus women ($n = 135$) for any of the covariates, the independent variables, or the dependent variable. Returning service members ($n = 117$, $M = 2.90$, $SD = 1.91$) reported more topic avoidance about deployment than at-home partners ($n = 118$, $M = 2.26$, $SD = 1.54$), $t(233) = 2.82$, $p = .005$.

We computed zero-order correlations in a second preliminary analysis. Findings indicated that relationship satisfaction was negatively correlated with relational uncertainty, interference from a partner, and topic avoidance about deployment (see Table 1). Relational uncertainty and interference from a partner were positively correlated with each other and with topic avoidance about deployment.

We also examined the bivariate correlations between the substantive variables and the number of months the service member had been home as a potential covariate

Table 1. Bivariate correlations ($N = 235$).

	V1	V2	V3	V4	V5	V6	V7	V8	V9
V1: Sex	—								
V2: Deployment status	−.85***	—							
V3: Months home	−.08	.11	—						
V4: Relationship satisfaction	−.09	.03	−.28***	—					
V5: Self uncertainty	−.04	.11	.19**	.80***	—				
V6: Partner uncertainty	.03	−.01	.13	−.69***	.73***	—			
V7: Relationship uncertainty	−.01	.09	.18**	−.81***	.93***	.79***	—		
V8: Interference from a partner	.04	−.01	.21**	−.61***	.59***	.51***	.59***	—	
V9: Topic avoidance about deployment	−.12	.18**	.16*	−.40***	.46***	.38***	.46***	.43***	—

Note. Sex was coded such that women = 0, men = 1. Deployment status was coded such that at-home partners = 0, returning service members = 1.
*$p < .05$. **$< .01$. ***$p < .001$.

(see Table 1). Results revealed that the number of months the service member had been home was negatively associated with relationship satisfaction, and it was positively associated with self uncertainty, relationship uncertainty, interference from a partner, and topic avoidance about deployment.

Substantive analyses

We tested our hypotheses and research questions using hierarchical regression procedures. We computed four models to examine self uncertainty, partner uncertainty, relationship uncertainty, and interference from a partner in separate analyses to avoid multicollinearity. Each model included three covariates: (a) respondent's sex given evidence of differences between men and women in patterns of topic avoidance (e.g., Caughlin & Golish, 2002), (b) deployment status as a returning service member versus an at-home partner given the results of the independent-samples *t* tests, and (c) the number of months the service member had been home given the findings from the bivariate correlations. We centered all of the covariates and independent variables around their means (following Aiken & West, 1991).

On the first step of the models, we regressed topic avoidance about deployment onto the covariates of respondent's sex (women = 0, men = 1), deployment status (at-home partners = 0, returning service members = 1), and the number of months the service member had been home. On the second step, we added relationship satisfaction, and on the third step, we included one source of relational uncertainty or interference from a partner. On the fourth step, we entered an interaction term computed as relationship satisfaction multiplied by one source of relational uncertainty or interference from a partner.

Results for the first step were consistent with the preliminary analyses in demonstrating more topic avoidance about deployment reported by returning service members and individuals who had been reunited for more months (see Table 2). Findings for the second step revealed that relationship satisfaction was negatively associated with topic avoidance about deployment. As predicted, results for the third step showed that all three sources of relational uncertainty (Hypothesis 1) and interference from a partner (Hypothesis 2) were positively associated with topic avoidance about deployment. Relationship satisfaction continued to predict topic avoidance about deployment in the models containing partner uncertainty ($\beta = -.24$, $p = .007$) and interference from a partner ($\beta = -.19$, $p = .013$), but not in the models containing self uncertainty ($\beta = -.12$, *ns*) and relationship uncertainty ($\beta = -.09$, *ns*).

On the fourth step, relationship satisfaction interacted with relational uncertainty and interference from a partner in all models (see Table 2). We probed the interactions by (a) calculating the slopes for relational uncertainty and interference from a partner at one standard deviation below the mean, at the mean, and at one standard deviation above the mean of relationship satisfaction; and (b) reporting the raw coefficients (per Aiken & West, 1991; see Table 3). Findings showed ordinal

Table 2. Four regression models predicting topic avoidance about deployment ($N = 235$).

	R^2 Δ	β
Step 1	.06**	
Sex		−.12
Deployment status		.29*
Months home		.14*
Step 2	.13***	
Relationship satisfaction		−.37***
Step 3		
Self uncertainty	.03**	.31**
Partner uncertainty	.02*	.19*
Relationship uncertainty	.04***	.35***
Interference from a partner	.06***	.32***
Step 4		
Relationship Satisfaction × Self Uncertainty	.02*	.21*
Relationship Satisfaction × Partner Uncertainty	.03**	.22**
Relationship Satisfaction × Relationship Uncertainty	.02**	.21**
Relationship Satisfaction × Interference From a Partner	.02*	.17*

Note. Cell entries are R^2 Δ statistics and standardized coefficients. All of the predictors were centered around their means. Each model contained one source of relational uncertainty or interference from a partner.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Test of moderation at three levels of relationship satisfaction ($N = 235$).

	Level of relationship satisfaction		
	Low	Medium	High
Self uncertainty	.44**	.65***	.87***
Partner uncertainty	.19	.39**	.59***
Relationship uncertainty	.42**	.61***	.80***
Interference from a partner	.38**	.59***	.79***

Note. Cell entries are unstandardized coefficients.
**$p < .01$. ***$p < .001$.

interactions such that relational uncertainty and interference from a partner were more positively correlated with topic avoidance about deployment at high levels of relationship satisfaction (see Table 3 and Figures 1, 2, 3, and 4). In other words, relationship satisfaction had a modest moderating effect on the positive associations that relational uncertainty (Research Question 1a) and interference from a partner (Research Question 1b) shared with topic avoidance about deployment. None of the covariates moderated the substantive findings.

Discussion

The postdeployment transition is a critical juncture in the well-being of military couples (Bowling & Sherman, 2008; Karakurt et al., 2013; Sayers, 2011). To help returning service members and at-home partners communicate effectively during the postdeployment transition, we sought to understand the relationship dynamics predicting people's reluctance to discuss their deployment experiences upon reunion. We turned to the relational turbulence model to inform hypotheses about relational uncertainty and interference from a partner as predictors

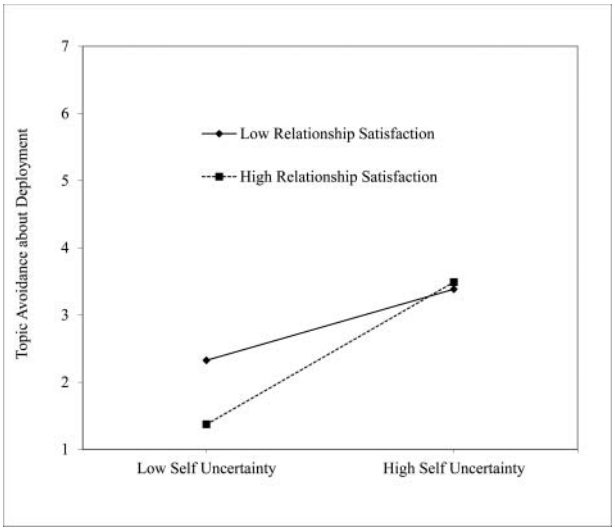

Figure 1. Interaction between relationship satisfaction and self uncertainty predicting topic avoidance about deployment.

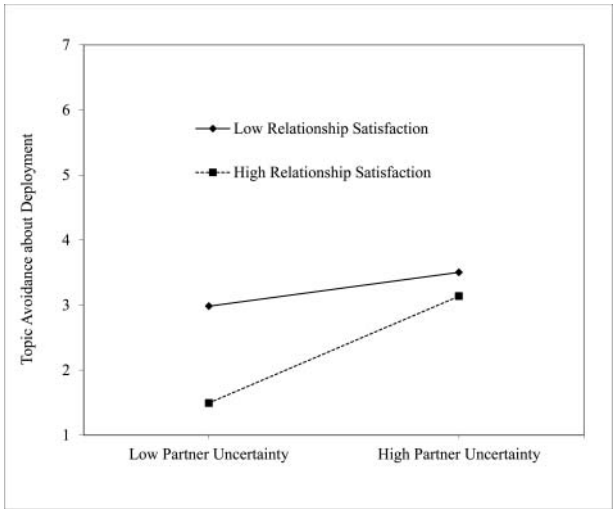

Figure 2. Interaction between relationship satisfaction and partner uncertainty predicting topic avoidance about deployment.

of people's topic avoidance about deployment, and we considered relationship satisfaction as a possible moderator. We devote the following subsections to considering the ramifications of our results along with limitations and directions for future research.

Implications for the relational turbulence model

Our results suggest that the logic of the relational turbulence model is compatible with people's reluctance to talk about deployment issues upon reunion. As expected, both relational uncertainty and interference from a partner predicted topic avoidance about deployment. Returning service members and at-home partners facing

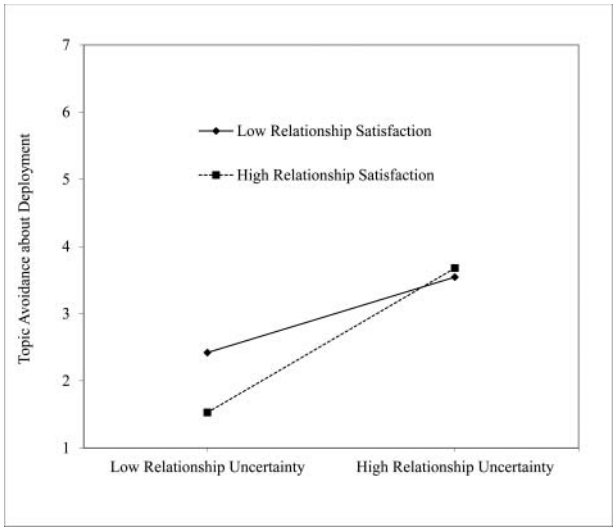

Figure 3. Interaction between relationship satisfaction and relationship uncertainty predicting topic avoidance about deployment.

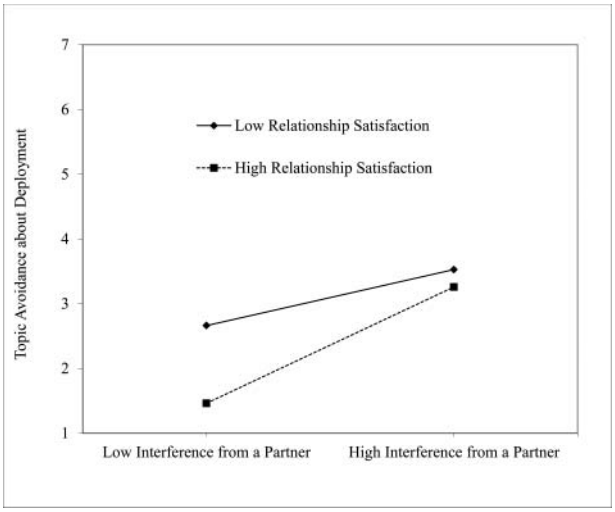

Figure 4. Interaction between relationship satisfaction and interference from a partner predicting topic avoidance about deployment.

questions about involvement and hindrance in their everyday goals reported less willingness to discuss their deployment experiences upon reunion. In addition, relational uncertainty and interference from a partner were stronger predictors of topic avoidance about deployment for individuals who were highly satisfied with their relationship.

These findings contribute to the relational turbulence model in a trio of ways. On a basic level, they add to a program of research suggesting the utility of the model for understanding communication within military couples, particularly how returning service members and at-home partners negotiate the postdeployment transition (Knobloch, Ebata, McGlaughlin, & Ogolsky, 2013; Knobloch & Theiss, 2011a; Theiss & Knobloch, 2013). More broadly, they fill a gap in the model by documenting a connection between interference from a partner and topic avoidance. During the 15 years since the inception of the relational turbulence model (Solomon & Knobloch, 2001), scholars have tended to focus on cognitive and emotional markers of upheaval more than communicative markers of upheaval, and research on communication has privileged relational uncertainty over interference from a partner (for review, see Solomon, Knobloch, Theiss, & McLaren, 2016). Stated differently, the link between relational uncertainty and topic avoidance has been documented among civilian couples (Knobloch & Carpenter-Theune, 2004; Knobloch et al., 2016; Theiss & Nagy, 2012) and military couples (Knobloch, Ebata, McGlaughlin, & Theiss, 2013), but establishing an association between interference from a partner and topic avoidance among military couples is a novel finding of this investigation. A third contribution lies in evaluating whether the parameters identified by the model are redundant with relationship satisfaction. Our data provide a counterpoint to the potential criticism that the model offers an unnecessarily complex explanation for relational turbulence that could reduce to relationship satisfaction. Rather, our results reveal that relational uncertainty and interference from a partner add explanatory value beyond people's satisfaction with their relationship.

Implications for practice

What do our findings suggest as best practices for clinicians who wish to help returning service members and at-home partners navigate the postdeployment transition? We propose two guidelines implied by our data. A first recommendation echoes the advice of Bowling and Sherman (2008) that practitioners should help military couples manage their expectations about the reintegration process. This recommendation is based on our findings that relational uncertainty and interference from a partner predicted topic avoidance about deployment upon reunion. To the extent that returning service members and at-home partners are prepared to experience questions about involvement and disruptions to their everyday goals during the postdeployment transition (e.g., Faber et al., 2008; Karakurt et al., 2013), they may be better equipped to communicate effectively as they adjust to living in close proximity again. A second recommendation that practitioners should attend to people's satisfaction with their relationship coalesces with Sahlstein Parcell and Maguire's (2014) results that military couples can be distinguished by the trajectory of relationship satisfaction they experience across the deployment cycle. Our findings hint that highly satisfied returning service members and at-home partners may be more perturbed by relational uncertainty and interference from a partner, perhaps because they are unfamiliar with upheaval in their relationship compared to individuals who are less satisfied and better acquainted with turmoil. Consequently, clinicians may have more success intervening with relational turbulence model principles among groups of highly satisfied military couples.

Best practices for helping military couples make decisions about open communication versus topic avoidance during reintegration are more complicated. On the one hand, individuals tend to value open communication (e.g., Caughlin, 2003) and view topic avoidance as dissatisfying. This latter claim is bolstered by previous work (Caughlin & Golish, 2002) and borne out in our data (see Table 2). On the other hand, topic avoidance can have benefits for circumventing tension and preserving harmony (e.g., Afifi & Guerrero, 2000; Roloff & Ifert, 2000). Motivations play an important role here. For example,

topic avoidance can be less dissatisfying when people are motivated to protect their relationship (Caughlin & Afifi, 2004) versus protect themselves (Donovan-Kicken & Caughlin, 2010). Ironically, military wives who conceal information to protect their spouse from worry during deployment have more problems with both their physical health and their mental health (Joseph & Afifi, 2010). Perhaps the complex intersections of opportunities, threats, and motivations explain why individuals endorse open communication but do not always practice it (Caughlin, Mikucki-Enyart, Middleton, Stone, & Brown, 2011; Goldsmith & Domann-Scholz, 2013). Therefore, we encourage practitioners to discard conventional wisdom for military couples to "be open," "talk about it," and "share everything" in favor of more sophisticated advice for military couples to consider their motivations when making choices about revealing versus concealing information (e.g., "safeguarding the relationship is altruistic" versus "protecting personal interests is selfish"). As Donovan-Kicken and Caughlin (2010) noted, "If [individuals] believe that their partners are pursuing the goal of self protection, then they may interpret the avoidance as a sign that their partners do not trust them or do not feel comfortable with them" (p. 251).

Limitations and directions for future research

Key limitations of our study are tied to our sample. First and foremost, we used a convenience sampling strategy that generated volunteers with relatively strong romantic relationship ties (i.e., participants reported low levels of relational uncertainty and interference from a partner and high levels of relationship satisfaction). It is possible that floor effects and ceiling effects attenuated the size of the associations we observed between those predictors and people's topic avoidance about deployment. Moreover, many of the returning service members in our sample were National Guard personnel (59%). Unlike their active duty counterparts, National Guard service members deploy from and return to civilian lifestyles, which can present special challenges upon reintegration (e.g., Kim, Thomas, Wilk, Castro, & Hoge, 2010). Female returning service members and male at-home partners can face unique stressors during the postdeployment transition as well (e.g., Southwell & MacDermid Wadsworth, 2016), but our study was not able to address that issue because the majority of returning service members in our sample were men (84%) and at-home partners were women (98%). Stratified random sampling procedures are needed to evaluate whether our findings generalize to individuals experiencing substantial distress, active-duty personnel of all service branches, returning service members who are women, and at-home partners who are men.

Another limitation involves our research design. Our cross-sectional data do not speak to processes occurring over time. We endorsed the logic of the relational turbulence model in positioning relational uncertainty, interference from a partner, and relationship satisfaction as predictors of topic avoidance about deployment (e.g., Knobloch, Ebata, McGlaughlin, & Theiss, 2013), but other orderings are conceptually reasonable. For example, people who are reluctant to communicate with their partner about sensitive issues may be more unsure about their relationship (Knobloch & Theiss, 2011b) and less satisfied with their partnership (Donovan-Kicken, & Caughlin, 2010). Only longitudinal data can disentangle whether reverse and/or reciprocal pathways are at work (e.g., Knobloch & Theiss, 2011b).

Other directions for future research stem from variables not considered here. Perhaps most obviously, our findings set the stage for examining the content of topics about deployment that military couples are disinclined to discuss upon reunion. Prior qualitative work has laid a foundation for those efforts by identifying the issues that are challenging for service members to discuss with their romantic partner during deployment and reunion. Avoided topics include confidential operational information, dangers during deployment, emotions and mental health, faithfulness and fidelity, household stressors, financial concerns, and the potential for a future deployment (Knobloch, Ebata, McGlaughlin, & Theiss, 2013; Knobloch et al., 2015). Future research that paired our quantitative approach with these qualitative findings would be useful for pinpointing the specific subjects that military couples hesitate to talk about under conditions of relational uncertainty and interference from a partner. Similarly, our study did not attend to the nature of people's experiences during deployment (e.g., the mission of the service member, the stressors faced by the at-home partner). Evidence suggests that at-home partners interpret a service member's behavior differently, for example, based on their perceptions of how dangerous the service member's mission was during deployment (Renshaw, Rodrigues, & Jones, 2008). Accordingly, an important direction for future work is to examine how the daily hassles and major hardships that military couples experience during deployment shape both the dynamics of their relationship and their willingness to talk openly upon reunion.

Conclusion

The goal of our investigation was to shed light on relationship parameters that correspond with people's willingness to discuss their deployment experiences during reintegration. Consistent with the reasoning of the relational turbulence model (Knobloch, 2015; Solomon & Theiss, 2011),

we found that returning service members and at-home partners were more likely to engage in topic avoidance about deployment when they were experiencing relational uncertainty and interference from a partner upon reunion, particularly when their relationship satisfaction was high. Our results fill a gap in the literature on military couples by illuminating how interpersonal dynamics predict the openness of returning service members and at-home partners about deployment when they are reunited. They also provide insight into how clinicians, practitioners, and military family life administrators can assist those who are making the transition from deployment to reintegration.

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HUMAN COMMUNICATION RESEARCH

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ORIGINAL ARTICLE

Relational Turbulence Theory: Explaining Variation in Subjective Experiences and Communication Within Romantic Relationships

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This essay extends the relational turbulence model as a framework for understanding communication in romantic relationships. Following the relational turbulence model, relational turbulence theory identifies relational uncertainty and interdependence as parameters that shape subjective experiences, but the theory clarifies the theoretical processes underlying their distinctive effects. In addition, relational turbulence theory articulates causal processes linking cognitive appraisals and emotions to communication. Relational turbulence theory also describes how episodes characterized by biased appraisals, intense emotions, and volatile communication coalesce into global evaluations of relationships as turbulent. In turn, the theory addresses the effect of relational turbulence on personal, relational, and social outcomes. Finally, the theory explains how communication can contribute to the development of both turbulence and resilience in romantic relationships.

Keywords: Interdependence, Interpersonal Communication, Relationship Development, Relational Turbulence, Relational Uncertainty, Romantic Relationships.

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Fifteen years have elapsed since Solomon and Knobloch (2001) proposed the relational turbulence model to explain turmoil at moderate levels of intimacy within courtship (see Solomon, Weber, & Steuber, 2010). Solomon and Knobloch (2001, 2004) argued that the transition from casual dating to serious involvement corresponds with relational uncertainty and goal interference from a partner, which polarize people's cognitive, emotional, and communicative reactions to relationship experiences. Over time, the model shifted from an emphasis on intimacy as the

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antecedent condition to a focus on relational uncertainty and interference from a partner as phenomena that increase during relationship transitions and shape subjective experiences. In turn, the relational turbulence model has been used to understand a variety of experiences in romantic relationships (e.g., hurtful messages—McLaren, Solomon, & Priem, 2011; negative emotions—Knobloch, Miller, & Carpenter, 2007; relational irritations—Theiss & Solomon, 2006b) and an array of relationship transitions (e.g., infertility—Steuber & Solomon, 2008; parenthood—Theiss, Estlein, & Weber, 2013; reintegration after military deployment—Knobloch & Theiss, 2011a; empty nest—Nagy & Theiss, 2013).

Empirical studies employing diverse methodologies have supported the relational turbulence model. Tests of the model have used cross-sectional self-report methods (e.g., Solomon & Knobloch, 2004), longitudinal self-report methods (e.g., Theiss & Solomon, 2006a), laboratory observations of dyadic interactions (e.g., McLaren, Solomon, & Priem, 2012), and theme analyses of discourse (e.g., Knobloch & Delaney, 2012). Research populations include both college-aged dating couples (e.g., Theiss, Knobloch, Checton, & Magsamen-Conrad, 2009) and married couples (e.g., Knobloch & Theiss, 2011a). Across a range of phenomena, results indicate that relational uncertainty and interference from a partner are associated with more extreme cognitive appraisals, emotions, and communication behaviors. Thus, findings are consistent with the model's claim that relational uncertainty and interference from a partner correspond with subjective experiences of relationship phenomena.

This essay builds upon the relational turbulence model to advance relational turbulence theory. In general, a *model* depicts associations between phenomena without necessarily identifying the processes that give rise to them; a *theory* explains relationships in terms of generative mechanisms (Shoemaker, Tankard, & Lasorsa, 2004). Although research guided by the relational turbulence model has yielded important insights, this work is open to several of the criticisms of so-called theoretically grounded research voiced by Roloff (2015). Thus, we answer Roloff's call for communication theory offering precise logic from which scholars can deduce hypotheses testable across the landscape of research on interpersonal communication.

Our transformation of the model focuses on three key theoretical advances. First, whereas the relational turbulence model treats relational uncertainty and interference from a partner as parallel forces shaping subjective experiences, relational turbulence theory highlights the distinctive processes through which these parameters shape cognitions and emotions. Second, the theory elaborates on the causal relationships among cognitions, emotions, and communication, which are unspecified in the relational turbulence model. Finally, relational turbulence theory clarifies how specific experiences coalesce into an overall perception of the relationship as chaotic, and how this characterization affects a variety of outcomes.

Reformulating the relational turbulence model not only addresses theoretical ambiguities within the perspective, but it also has heuristic value in three ways. First, advancing claims about underlying theoretical processes can inform more

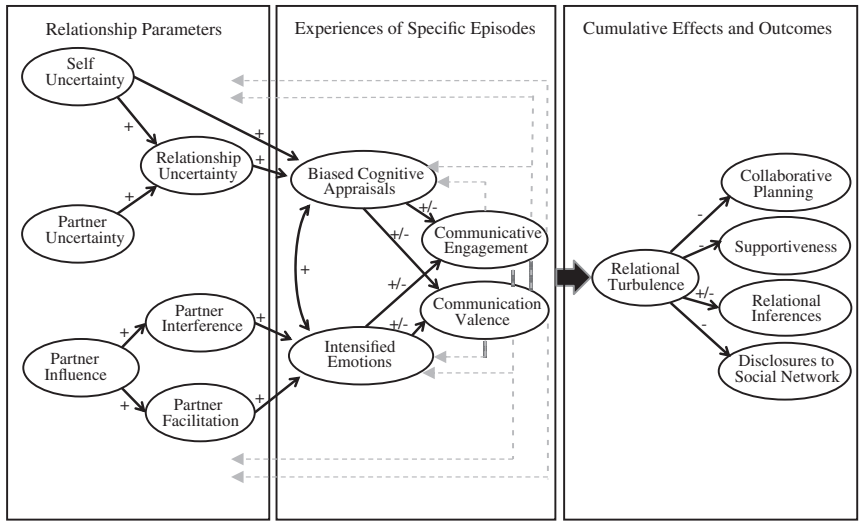

Figure 1 Relational turbulence theory (reciprocal effects are depicted in dashed gray lines). *Note*. Paths are designated with "+/−" when the direction of effects depends on factors outside the scope of this depiction.

specific tests of the theoretical logic. Although the relational turbulence model was inductively derived to describe patterns apparent in empirical studies (see Solomon & Knobloch, 2001, 2004), it referenced theoretical accounts of uncertainty (Berger, 1988) and interdependence processes (Berscheid, 1983) in relationships to justify particular linkages in the model. In addition, more recent work has offered alternative accounts of the role of relational turbulence within the model (e.g., McLaren et al., 2012; Theiss & Estlein, 2014). Integrating and adjudicating these viewpoints within relational turbulence theory provide a necessary touchstone for future research. Second, extensions to various communication episodes and relationship contexts also would benefit from more precise theoretical claims. Although the concepts in the relational turbulence model illuminate challenging aspects of relational transitions (e.g., Knobloch & Delaney, 2012; Nagy & Theiss, 2013; Steuber & Solomon, 2008), attention to theoretical mechanisms is needed to guide tests, rather than applications, of the framework. A third heuristic value of the theory lies in clarifying how relational turbulence constitutes a global quality of romantic associations that affects a variety of personal, relational, and social outcomes. Doing so provides a foundation for theoretically rich and socially significant research on the associations among qualities of personal relationships, communication, and well-being.

In the following sections, we discuss the assumptions that constitute relational turbulence theory (see Figure 1). These claims are formalized within seven pairs of axioms (i.e., claims assumed to be true) and propositions (i.e., associations implied by axioms; per Reynolds, 1971). We conclude by discussing implications, limitations, and directions for future research.

Changes in the relational environment

The relational turbulence model initially focused on relationship development; therefore, it emphasized intimacy as a central construct. Specifically, the model predicted that people experience more relational uncertainty, more interference from a partner, biased cognitive appraisals, stronger emotions, and distinctive communication at moderate levels of intimacy, which were assumed to correspond with the transition from casual to serious dating (Solomon & Knobloch, 2001, 2004). Some studies documented curvilinear patterns across levels of intimacy as predicted, but others did not (see Solomon & Theiss, 2011). One source of ambiguity was the interpretation of *moderate intimacy*. Studies operationalized intimacy as the average of *z*-scores for scales indexing commitment, love, closeness, and/or chance of marriage (e.g., Solomon & Theiss, 2008); therefore, what constituted the mean level of intimacy was tied to the distribution of the variable within each sample. Tests of the curvilinear association were also compromised because nonintimate relationships were underrepresented in these studies. Finally, intimacy proved a less consistent predictor of outcomes than relational uncertainty and characteristics of interdependence (e.g., Theiss & Solomon, 2006a). Thus, the focus of research shifted from intimacy to how relationship transitions set the stage for relational turbulence.

A *transition* in an interpersonal relationship is a period of discontinuity between times of relative stability, during which individuals adapt to changing roles, identities, and circumstances. Importantly, transitions can involve primarily positive or primarily negative developments; they are not isomorphic with problematic events, expectation violations, conflict, or turbulence, but rather they encompass changes that create a mismatch between previously established relationship beliefs or routines and new relationship circumstances (Solomon & Theiss, 2011). A transition can be sparked by changes within a dyad's internal environment (e.g., pregnancy) or external environment (e.g., military deployment), which can range from seemingly minor (e.g., a new hobby) to life altering (e.g., a cancer diagnosis), and can develop gradually (e.g., declining health) or emerge suddenly (e.g., termination of employment). A relational transition ends not when the emergent conditions subside, but when partners establish patterns of relating that are adapted to their new circumstances (see Solomon & Theiss, 2011). Because transitions call into question assumptions about involvement and alter patterns of interdependence, people become vigilant about their relationship, react intensely to events that would ordinarily be mundane, and experience volatility relating to each other (Solomon et al., 2010). Thus, transitions are pivotal junctures that bring the potential for relationship reorganization, growth, or decay.

Changes in the relationship environment include both qualitative transformations and quantitative fluctuations, which manifest as transitions when they alter patterns of relating. Notably, we do not include transitions as a core construct within the theory, because they defy straightforward demarcation and falsifiability. We also do not specify transitions as a scope condition for determining the theory's applicability, because relational uncertainty and interdependence processes can be salient in the absence of a

specific transition (McLaren et al., 2011). Rather, we consider changes in the relational environment to be a relevant, but not necessary, condition that affects relational uncertainty and interdependence between partners.

Relational uncertainty

The relational turbulence model positioned *relational uncertainty*, or questions about the nature of involvement in a relationship, as a polarizing phenomenon. Relational uncertainty is an umbrella term indexing three sources of ambiguity: (a) *self uncertainty* refers to questions people have about their own involvement in the relationship, (b) *partner uncertainty* encompasses questions about a partner's participation in the relationship, and (c) *relationship uncertainty* includes questions about the status of the relationship itself (Knobloch & Solomon, 1999). The three sources of relational uncertainty emerge on a global level as people's sense of ambiguity about a relationship and on an episodic level as questions individuals experience in response to a discrete event (Knobloch, 2010). The relational turbulence model identified global relational uncertainty as biasing people's subjective experiences of specific episodes. Throughout this essay, we use the phrase *specific episode* to refer to any discrete communication event between partners (cf. Baxter, 1992), but especially those in which relational information is particularly salient (e.g., exchanges involving hurt, support, conflict, sexual communication, etc.).

Both theory and research identify self, partner, and relationship sources of relational uncertainty as distinct constructs despite substantial covariation (e.g., Knobloch & Solomon, 1999; Knobloch et al., 2007; Solomon & Theiss, 2008), with self and partner uncertainty as antecedents of relationship uncertainty (e.g., Berger & Bradac, 1982; McLaren et al., 2011; Solomon & Knobloch, 2004). Conceptually, self and partner uncertainty index questions about individuals, whereas relationship uncertainty encompasses questions about the dyad as a unit (Berger & Bradac, 1982). Empirically, measurement analyses demonstrate that self, partner, and relationship uncertainty do not form a unidimensional second-order factor (for review, see Knobloch, 2010), and substantive analyses reveal divergent effects of self uncertainty when partner and relationship uncertainty are covaried (McLaren et al., 2011; Priem & Solomon, 2011; Theiss & Solomon, 2006b). Accordingly, best practices for coping with the statistical overlap among the three sources of relational uncertainty include (a) examining the trio separately using regression or multilevel modeling techniques (e.g., Knobloch & Theiss, 2010; Solomon & Theiss, 2008), (b) modeling them as distinct but linked factors using structural equation techniques (e.g., McLaren et al., 2012; Solomon & Knobloch, 2004), or (c) reporting and comparing the results of both analytical strategies (Priem & Solomon, 2011).

A central assumption of the relational turbulence model is that global relational uncertainty evokes biased cognitions, intensified emotions, and polarized communication in reaction to specific episodes, and empirical evidence is compatible with this claim (see Solomon & Theiss, 2011). Although research findings align with

predictions, the model does not specify mechanisms to explain the effects of relational uncertainty. Indeed, studies have neither distinguished between manifestations of relational uncertainty processes (e.g., message processing deficits) and outcomes (e.g., characterizing a partner as intentionally hurtful), nor explained why self uncertainty sometimes functions differently than partner and relationship uncertainty. To address these issues, relational turbulence theory describes the theoretical processes through which sources of relational uncertainty affect people's subjective experiences.

Our theorizing draws upon Knobloch and Satterlee's (2009) analysis of how relational uncertainty complicates message production and processing. Knobloch and Satterlee argued that people experiencing relational uncertainty are operating under an information deficit because they lack insight into the nature of their relationship. With respect to message production, individuals experiencing relational uncertainty encounter more severe face threats, have difficulty planning messages, and are reluctant to communicate directly about sensitive topics. With respect to message processing, people experiencing relational uncertainty have trouble interpreting their partner's messages, are less confident in their communication skills, and view their partner and their relationship pessimistically. Knobloch and Satterlee's thinking points to the fundamental challenge posed by relational uncertainty: Individuals who are uncertain about their relationship lack a clear conceptual framework through which to make sense of events.

Relational turbulence theory uses Berger and Calabrese's (1975) application of Shannon and Weaver's (1949) portrayal of communication systems to clarify the theoretical processes at work. Those perspectives assumed that uncertainty corrupts communication because a lack of contextual information creates ambiguity about the meanings, intentions, and consequences of symbolic exchange. Specifically, comprehension suffers because people lack knowledge that would help them select among a variety of possible inferences. In the absence of information, particularly concerning the actions of others, individuals are more likely to rely on heuristic cues to inform appraisals of the situation (Pronin, Gilovich, & Ross, 2004). One consequence is an increase in attribution biases when explaining other people's actions and motivations (Kruger & Gilovich, 2004).

Building on these ideas, we propose that relational uncertainty undermines comprehension of specific episodes. In particular, we suggest that ambiguity concerning relational involvement forces individuals to use incomplete information to make sense of situations, which promotes biased cognitive appraisals. Used in this sense, *cognitive bias* refers to systematic deviations introduced by deficient or flawed information processing, and *biased cognitive appraisals* are the distorted assessments of a situation that result. Importantly, biased cognitive appraisals can reflect positive distortions (e.g., the tendency for people to appear more attractive in a group setting; Walker & Vul, 2013) or negative distortions (e.g., the tendency for actors to appear more culpable when events have negative consequences, Jones & Davis, 1965).

Elucidating the theoretical processes through which relational uncertainty affects subjective experiences provides insight into differences among sources of relational

uncertainty. As people seek to make sense of episodes, knowledge of their partner's involvement and the relationship serve as touchstones for comprehension. Access to another person's psychological functioning is inherently limited and, at best, informed conjecture (McGuire & McGuire, 1986; Pronin et al., 2004); therefore, partner and relationship uncertainty may be more likely than self uncertainty to impede inferences about the meaning of a partner's actions and lead to biased interpretations. Consistent with this reasoning, empirical studies have found that self uncertainty has distinctive associations with cognitive and physiological responses to a partner's hurtful behavior (McLaren et al., 2011; Priem & Solomon, 2011), feelings of sadness and jealousy (Knobloch et al., 2007), and the directness of communication about irritations (Theiss & Solomon, 2006b), compared to partner and relationship uncertainty. In sum, relational uncertainty may correspond with biased cognitive appraisals, in general, but the effects of self uncertainty may diverge when partner and relationship uncertainty are taken into account. This reasoning is represented in our first axiom and the proposition that follows from it:

A1: Relational uncertainty undermines comprehension of specific episodes.
P1: Through its effect on comprehension, relational uncertainty causes people to form more biased cognitive appraisals of specific episodes.

The hypotheses deduced from our conception of relational uncertainty and first proposition are depicted in Figure 1. We position the sources of relational uncertainty as distinct but related, with self and partner uncertainty as antecedents of relationship uncertainty. The theory proposes that relational uncertainty is uniquely relevant to cognitive appraisals, because of its deleterious effect on comprehension. For example, manifestations of biased appraisals can include self-reported perceptions of severity or threat and attributions of blame and resolvability associated with difficult situations, as well as indicators of those appraisals in dialogue (e.g., accusations of responsibility for problems).

Within Figure 1, we show that the effects of self and partner uncertainty are mediated, at least partially, by relationship uncertainty (per Knobloch et al., 2007). We anticipate that partner uncertainty is positively associated with biased cognitive appraisals when examined independently, but work published to date suggests that partner uncertainty does not have a direct effect on outcomes when relationship uncertainty is covaried. Conversely, and as reviewed previously, prior research has found that self uncertainty has a unique direct effect on some outcomes when controlling for relationship uncertainty (e.g., Priem & Solomon, 2011). Thus, Figure 1 depicts the effects of partner uncertainty on outcomes as wholly mediated by relationship uncertainty, and shows that self uncertainty exerts both mediated and direct effects.

Interdependence

Figure 1 identifies interdependence as a second relationship parameter that shapes reactions to specific episodes. Following Berscheid (1983); Solomon and Knobloch

(2001, 2004) argued that transitions in relationships modify how much *influence from a partner* people allow as they perform everyday activities. With increases in influence, partners are more likely to interrupt each other's routines, and those interruptions can be experienced as either disruptive or facilitative. *Interference from a partner* is the extent to which a partner prevents desired outcomes or makes activities more difficult, and *facilitation from a partner* indexes how much a partner makes achieving goals or performing activities easier (Knobloch & Solomon, 2004).

Studies have documented positive associations between influence from a partner and both interference and facilitation from a partner, as expected (Knobloch & Solomon, 2004; Solomon & Knobloch, 2001; Solomon & Theiss, 2008). In addition, the body of work testing the relational turbulence model has demonstrated that interference from a partner corresponds with negatively biased cognitive appraisals, more intense emotions, and polarized communication (see Solomon & Theiss, 2011). Although fewer studies have measured facilitation from a partner, those investigations show that interference and facilitation diverge in their associations with measures of cognitive, emotional, and communicative experiences (e.g., Knobloch et al., 2007; McLaren et al., 2011). As was the case with relational uncertainty, however, the theoretical process that explains these associations merits elaboration.

Relational turbulence theory refines the role of interdependence by connecting interruptions specifically to the intensity of emotional responses. Knobloch and Solomon (2004) drew upon Berscheid's (1983) emotion-in-relationships model (ERM) to explicate influence, interference, and facilitation, and the logic of Berscheid's perspective is particularly relevant to emotional outcomes. ERM argues that relating involves people granting, escalating, or limiting a partner's influence over their daily activities and, as a result, individuals become vulnerable to interruptions to their behavioral routines. A core tenet of ERM is that any interruption in a person's sequence of goal-directed action sparks emotion. Individuals direct their attention to the source of the violation, and people's appraisals of the incongruities created by the interruption determine the valence of their affective response. In particular, interference from a partner usually prompts negative emotion ("You forgot my birthday?") and facilitation from a partner typically incites positive emotion ("You cooked my favorite dinner!"). Thus, ERM locates appraisals of the effects of interrupted routines as antecedent to experiences of interference or facilitation, which in turn drive emotional outcomes.

Whereas ERM focuses on immediate emotional reactions to incidents of interference or facilitation from a partner, relational turbulence theory considers the cumulative impact of periods marked by heightened interference or facilitation. Diverse theoretical perspectives suggest that recent and frequent emotional activation amplifies people's affective reactions to subsequent but unrelated stimuli (Berkowitz, 2000; Cunningham, Shamblen, Barbee, & Ault, 2005; Zillmann, 1996). For example, Zillman's excitation transfer theory suggests that the emotional arousal associated with previous experiences elevates the baseline for subsequent emotional reactions when there is insufficient time between episodes for the initial arousal to dissipate.

Relational turbulence theory utilizes this reasoning to suggest that the prevalence of emotional experiences caused by interruptions, either disruptive or helpful, creates a climate of heightened emotional reactivity that infuses people's emotional reactions to other relationship events. In other words, heightened affective arousal sparked by interruptions from a partner prompts stronger emotional reactions to subsequent episodes. Conceptually this effect encompasses interruptions that are both interfering and facilitating, but Berscheid (1983) argued that people habituate to facilitation and positive interruptions recede from their awareness. Thus, although experiences of facilitation can promote positive emotions and thereby offset the arousal of negative emotions, the theoretical logic suggests that patterns of interference from a partner may be especially likely to amplify emotional reactions to specific episodes. The following axiom reflects this reasoning and provides a foundation for our second proposition:

A2: Interruptions from a partner, particularly those that interfere with everyday routines, heighten affective arousal.

P2: Through their effect on affective arousal, interruptions from a partner, particularly those that interfere with everyday routines, cause people to experience more intense emotions in response to specific episodes.

Figure 1 represents the hypotheses that follow from our second axiom. We predict that interference and facilitation from a partner occur when a partner's influence interrupts goal-directed activity, and interference and facilitation amplify the emotions experienced in response to specific episodes. Example operationalizations of this outcome include self-report indices of emotions, behavioral coding of facial affect, and physiological measures. In addition, Figure 1 shows that the effects of a partner's influence are mediated by experiences of interference or facilitation. We also anticipate that interference from a partner exerts a stronger effect on the intensity of emotional responses than experiences of facilitation from a partner.

Cognitive appraisals, emotions, and communication

The second panel in Figure 1 summarizes experiences within specific episodes. The relational turbulence model treats cognitions, emotions, and communication as equivalent outcomes of relational uncertainty and qualities of interdependence. Within relational turbulence theory, we specify the relationships that exist among cognitive appraisals, emotional intensity, and communication behavior. In particular, we position communication behavior as an outcome resulting from cognitive and emotional reactions to relationship events.

Two features of interpersonal communication are especially relevant in this context: communicative engagement and communication valence. We focus on these two dimensions because they are central to characterizations of communication in a variety of interpersonal contexts (e.g., Dillard, Wilson, Tusing, & Kinney, 1997). *Communicative engagement* encompasses people's decisions to communicate with a

partner versus withdraw or avoid, and the extent to which they communicate using direct versus indirect responses. Some measures of communicative engagement include self-report scales indexing willingness to communicate (e.g., Knobloch & Theiss, 2011b), frequency counts of topics avoided (e.g., Knobloch, Theiss, & Wehrman, 2015), and manifestations of direct and indirect communication during dyadic interactions (King & Theiss, in press). *Communication valence*, which refers to the tenor of an interaction, ranges from integrative, constructive, or positive responses to distributive, destructive, or negative responses. Again, both self-report and observational measures are available to assess the valence of communication behavior (e.g., King & Theiss, in press).

Relational turbulence theory incorporates the widely accepted assumption that cognitive appraisals and emotions causally impact communication. With regard to cognitions, studies show that people who make negative appraisals about their relationship report using more indirect communication with a partner in response to specific events (e.g., Theiss & Estlein, 2014; Theiss & Nagy, 2013). In research on conflict, results indicate that the perceived severity of relational irritations corresponds positively with self-reported communicative directness (Theiss & Solomon, 2006b) and negatively with tendencies to withhold complaints (Solomon & Samp, 1998). Empirical evidence also documents associations between maladaptive attributions for a partner's actions and more negative interpersonal behavior, less effective approaches to problem solving, and less integrative communication (e.g., Miller & Bradbury, 1995). Thus, we link cognitive appraisals to both communicative engagement and communication valence.

With regard to emotions, we draw on a wealth of theory indicating that emotions encompass specific action tendencies that direct behavior, with more intense emotions generating stronger action tendencies (e.g., Frijda, 1987). Studies of hurt (Theiss et al., 2009) and irritation (Theiss & Solomon, 2006b) suggest that strong emotions in these contexts warrant more direct communication to address perceived transgressions. Conversely, more hurt and anger in response to privacy violations lead to greater distancing from a partner and also more distributive communication (McLaren & Steuber, 2013). Among breast cancer survivors, the intensity of women's anger and sadness in response to particular cancer-related stressors corresponds with more negative communication with their spouse about those stressors, whereas women's happiness is associated with more positive interactions (Weber & Solomon, 2007). Thus, the intensity of emotional reactions can shape how much people approach or avoid communication and whether their interaction is positive or negative.

The assumptions that link biased cognitive appraisals and emotional intensity to communicative outcomes are specified in two pairs of axioms and propositions. The first pair underscores how cognitive appraisals direct particular communication responses; the second pair links intense emotions to communication behavior. Notably, these propositions do not identify the direction of effects on communicative engagement and valence, because the precise nature of those effects depends on

the conceptions of specific episodes and the action tendencies that emerge within particular experiences. For example, biased cognitive appraisals might lead a person to hold a partner accountable for a problem and support the goal of extracting reparations; this conception of the episode is likely to lead to direct communication. Conversely, biased appraisals might involve overestimation of the relationship threat posed by a situation and promote protective goals; this conception of an episode is likely to foster less communicative engagement. In the same way, different emotions involve distinct action tendencies, some of which (e.g., anger) foment engaged, negatively valenced communication, some of which (e.g., sadness) encourage less communicative engagement, and others (e.g., joy) promote positivity in interaction with a partner.

A3: Biased cognitive appraisals inform conceptions of specific episodes.
P3: Through their effect on conceptions of specific episodes, biased cognitive appraisals cause people to respond with communication that is more or less engaged and positively or negatively valenced.
A4: Emotions elicited by specific episodes have action tendencies.
P4: Through their effect on action tendencies, intense emotions cause people to respond with communication that is more or less engaged and positively or negatively valenced.

The hypotheses represented in Figure 1 are necessarily informed by particular cognitive appraisals and emotions, as noted previously, and also the focus of a specific episode. For example, appraisals of relationship threat might lead to less engagement in an episode concerning sexual intimacy, but promote more engagement about relationship irritations. Likewise, feelings of sadness might lead to withdrawal in a hurtful episode, whereas feelings of anger over rejection might promote confrontation. In similar ways, the particular cognitive appraisals and emotions that emerge in response to an episode shape the valence of communication.

Thus, Figure 1 depicts the general expectation that biased cognitive appraisals and intensified emotions shape communicative engagement and valence. Figure 1 also reflects the covariation that exists between cognition and emotion. Following appraisal theories of emotion, we assume that cognitive appraisals of a situation or event inform the activation of an emotional response. In addition, intense emotional reactions to specific episodes are likely to shape cognitive perceptions of a situation over time (e.g., Yan, Dillard, & Shen, 2010). Accordingly, the theory accounts for bidirectional effects between cognition and emotion.

Relational turbulence

The final panel in Figure 1 portrays the theory's assumptions about how specific experiences coalesce into global evaluations of relationships. Earlier uses of the phrase *relational turbulence* referred to specific phenomena associated with relational uncertainty and interference from a partner (e.g., Theiss & Estlein, 2014) and the extent to which a romantic association is in flux (e.g., Knobloch, 2007). Some work suggested

that perceptions of turmoil are a cognitive bias heightened by relational uncertainty or interference from a partner (Knobloch & Theiss, 2010; Theiss & Nagy, 2012), but others positioned relational turbulence as a quality of relationships that renders people sensitive to relationship-relevant information (McLaren et al., 2012; Solomon et al., 2010). Importantly, these positions are not incompatible. Evaluations of turmoil in the relationship may be an assessment of recent experiences or constitute a more general quality of the association. Indeed, Theiss and Nagy (2012) suggested that perceptions of turmoil as a cognitive appraisal may reflect underlying feelings of ongoing disarray in the relationship.

In relational turbulence theory, we define relational turbulence as a global and persistent evaluation of the relationship as tumultuous, unsteady, fragile, and chaotic that arises from the accumulation of specific episodes. As Solomon (2001, p. 85) argued, specific cognitions and emotions that occur within particular episodes "have the potential to transcend the boundaries of that exchange … [and] become unified and ultimately support a global judgment about the relationship." This general notion is reflected in a variety of research programs that have linked specific relationship experiences to evaluations of marital satisfaction (see Solomon, 2001, for review). Relational turbulence viewed in this way is broader than evaluations of any particular experience; it arises from the accumulation of specific experiences that coalesce to form a global relationship judgment.

The experiences that contribute to relational turbulence are episodes characterized by biased appraisals, strong emotions, and polarized communication. Theoretically, these episodes can involve amplified highs and lows; however, we suspect negative polarization is more common, because biased cognitive appraisals typically produce a negative view of events and interference from a partner is more salient than facilitation. In any case, the subjective intensity of these encounters has the cumulative effect of creating a sense of disarray in the relationship. Repeated exposure to these evocative experiences, and the communication challenges they present, can lead to exhaustion within the relationship system. In a sense, the amplification of subjective experiences during these encounters creates vibrations that ripple through the relationship, increasing the perceived fragility of its infrastructure. Just as fluctuations in relationship satisfaction predict relationship instability (Arriaga, 2001), oscillation in experiences of specific episodes can have a deleterious effect on global relationship judgments. In particular, people come to characterize the relationship itself as unsteady, tumultuous, or in flux.

Our conceptualization of relational turbulence places it on par with other global relational qualities, such as intimacy, satisfaction, and commitment. Importantly, relational turbulence is a distinct quality that emerges from unique interpersonal dynamics. Intimacy is the connection between partners that results from disclosure, responsiveness, and shared experience (Laurenceau & Kleinman, 2006). Satisfaction reflects the costs and benefits of a relationship, and commitment arises from satisfaction, a lack of alternatives, and investment in the union (e.g., Rusbult, 1980). Relational turbulence uniquely indexes the overall sense of chaos in the relationship.

Following empirical evidence that relational turbulence exerts a distinct influence on reactions to particular events, above and beyond the effect of relational satisfaction (McLaren & Solomon, 2014; Solomon & Priem, in press), we position it as a separate substantive global quality of romantic relationships. Our reasoning is reflected in a fifth axiom and proposition:

A5: Experiences of specific episodes characterized by biased cognitive appraisals, strong emotions, and polarized communication coalesce into a sense of chaos within the relationship.

P5: Through their effect on perceptions of chaos within the relationship, experiences of specific episodes characterized by biased cognitive appraisals, strong emotions, and polarized communication cause global evaluations of the relationship as turbulent.

As shown in Figure 1, we assume that relational turbulence is caused by exposure to subjectively intense episodes. Importantly, relational turbulence arises from the accumulation of these experiences. Because relational turbulence constitutes a global relationship quality, its operationalization relies on self-reported perceptions of chaos, turmoil, and instability (e.g., Knobloch, 2007; McLaren et al., 2012). Specific hypotheses linking evaluations of relational turbulence to biased cognitive appraisals, the intensity of emotions, communicative engagement, and communication valence are consistent with the theoretical logic.

The consequences of relational turbulence

As the final component of the theory depicted in Figure 1, we connect relational turbulence with personal, relational, and social outcomes. As noted previously, we conceptualize relational turbulence as a quality of relationships on par with intimacy, satisfaction, and commitment. Just as those global qualities of romantic associations affect cognitions, emotions, and behavior throughout relationships, relational turbulence exerts a pervasive impact on individual, relational, and social functioning. In the paragraphs that follow, we describe the theoretical processes underlying the effects of relational turbulence, and we offer several examples of how these processes are manifest in substantive and multifaceted outcomes.

A first theoretical process we identify to explain the effects of relational turbulence focuses on *construals*, which are conceptual units that index how individuals perceive phenomena. People's subjective thought processes can focus on concrete details or abstract categories, specific episodes or global trends, and constraints or opportunities (e.g., Trope & Liberman, 2003). Construal level theory (Trope, Liberman, & Wakslak, 2007) claims that psychological distance increases the tendency to conceptualize phenomena in abstract, schematic, and organized ways (e.g., Liberman, Sagristano, & Trope, 2002). Greater psychological distance is also linked to a focus on motives rather than means, more creativity, and less concern about negative circumstances that might develop in the future (Henderson, Wakslak, Fujita, & Rohrbach, 2011). We propose that individuals who perceive their relationship as turbulent are preoccupied with the

chaos, which leaves them unable to consider the horizon. This focus on the here and now decreases psychological distance and, therefore, affects cognitive construals. The result is less abstract, integrated, rational, creative, and idealistic construals, and more concrete, pragmatic, and instrumental thinking.

A second process through which relational turbulence affects individual, relational, and social outcomes is *dyadic synchrony*, which is the degree of coordination between individuals engaged in an interaction (Harrist & Waugh, 2002). Interactions are synchronous when partners exchange speaking turns fluidly, maintain topic coherence, and adjust conversational behaviors (e.g., speech rate, turn pause latency, volume, word choice) to become similar to each other (Bernieri & Rosenthal, 1991). Although these behavioral adjustments are largely nonconscious, they are influenced by subjective factors, such as perceptions of similarity between partners, liking for a partner, and a desire to identify with a partner's social group (see Giles, Coupland, & Coupland, 1991). Research has shown that women's attachment style predicts dyadic synchrony in interactions with their preschool-aged children (Crandell, Fitzgerald, & Whipple, 1997). In addition, Knobloch (2008) found that interference from a partner corresponds with less synchronous conversation as rated by third-party judges. We suggest that a global sense of chaos in a relationship undermines dyadic synchrony, thereby fracturing the very structure of interaction between partners.

We see the potential for relational turbulence to influence a variety of outcomes spanning intrapersonal processes, dyadic phenomena, and the interface with social networks. As one example, we propose that relational turbulence has a negative impact on collaborative planning, which generally refers to people's engagement in collective, future-oriented decision making. Collaborative planning in romantic associations can address mundane topics ("What should we do this weekend?"), major undertakings ("Are we ready to start a family?"), positive events ("Where should we vacation?"), and costly decisions ("Can we afford to replace our car?"). For people in turbulent relationships, both construal level and dyadic asynchrony can undermine collaborative planning. Through its effect on construal level, relational turbulence is likely to attenuate motivation to engage in planning with the partner; to focus people on pragmatic concerns, rather than aspirations; and to limit creative ideation by emphasizing constraints, rather than opportunities. Operationally, collaborative planning could be indexed by the frequency of talk focused on future plans, an analysis of linguistic choices (e.g., risk/prevention focus vs. reward focus; Pennebaker, Boyd, Jordan, & Blackburn, 2015), or the frequency of novel ideation during dialogue (cf. Samp & Solomon, 2005). Through its effect on dyadic synchrony, relational turbulence is likely to promote topically incoherent patterns of interaction that make it difficult for partners to develop and articulate shared goals and a plan that integrates their respective interests. Topic coherence, dyadic pronoun use, and turn-taking fluency are examples of possible indices of these processes (e.g., Knobloch, 2008; Knobloch & Solomon, 2003). In sum, we predict that relational turbulence undermines collaborative planning.

In a similar fashion, we anticipate that relational turbulence disrupts the performance of pragmatic relationship functions, such as supportive communication. For an interaction to be supportive, a person in distress must disclose to a partner, the partner must convey comforting messages, and the support recipient must respond to the support provision. For people in turbulent relationships, all aspects of the supportive communication process are threatened. Through its impact on construal level, relational turbulence can undermine people's ability to describe their distress to partners coherently, as well as their ability to infer explanations for a partner's distress. Construal level, in combination with dyadic asynchrony, may compromise people's ability to enact sensitive and responsive support, as well as their ability to draw comfort from enacted support. Research testing these ideas could draw upon widely used measures of support communication quality (e.g., Goldsmith, McDermott, & Alexander, 2000), as well as measures that index how support seekers disclose about their difficulties and the dyadic responsiveness manifest between support seekers and providers during interaction (see Cannava & Bodie, in press). Although these ideas remain speculative in the absence of direct empirical tests, they illustrate how relational turbulence can affect the communication of support, as well as other instrumental processes such as conflict management, interpersonal influence, and the negotiation of sexual intimacy.

As another example, we suggest that characterizations of a relationship as turbulent distort relational communication between partners. Relational framing theory claims that people make inferences about the level of dominance–submissiveness and affiliation–disaffiliation in interactions, and these judgments are influenced by contextual features, including characteristics of the relationship (Dillard, Solomon, & Samp, 1996). To the extent that relational turbulence, through its effect on construal level, directs cognition to constraints rather than opportunities, it may promote perceptions of relational messages as more dominating and disaffiliative. Likewise, through its tendency to disrupt dyadic synchrony, relational turbulence is likely to inform perceptions of less affiliation between partners (e.g., Giles et al., 1991). Although direct empirical tests of these predictions are limited, McLaren et al. (2012) found that relational turbulence was positively associated with perceptions of dominance expressed in a hurtful conversation which, in turn, were positively associated with perceptions of disaffiliation. Thus, we propose that relational turbulence shapes the relational inferences people draw from communication with a partner.

As a final example, we consider people's communication about their relationship with social network members. Individuals in romantic relationships experience a dialectical tension between keeping their association private and sharing their relationship with their social network (Baxter & Montgomery, 1996). When confronted with challenges internal to their relationship, partners may be especially reluctant to disclose details of the relationship with others (e.g., Steuber & Solomon, 2011). Through its effect on construal level, relational turbulence focuses individuals on the tumultuous here and now, which obscures a coherent view of the relationship that can be presented to outsiders. Through its effect on dyadic asynchrony, relational

turbulence may leave people feeling unable to communicate effectively about the relationship. As a result, we suggest that relational turbulence increases the rigidity of privacy boundaries between the couple and the social network. Possible operationalizations of this outcome include frequency estimates of disclosures to social network members, congruence or discrepancy in partners' versus network members' assessments of the relationship between partners, and people's self-reported comfort with extradyadic communication about the relationship.

Our final two axioms summarize the assumed effects of relational turbulence on construals and dyadic synchrony, and our final two propositions link relational turbulence to a variety of outcomes:

A6: Global evaluations of the relationship as turbulent decrease the psychological distance for construals.

P6: Through their effect on the psychological distance for construals, global evaluations of the relationship as turbulent affect a variety of personal, relational, and social outcomes.

A7: Global evaluations of the relationship as turbulent disrupt dyadic synchrony.

P7: Through their effect on dyadic synchrony, global evaluations of the relationship as turbulent affect a variety of personal, relational, and social outcomes.

Hypotheses that follow from our final propositions are shown in Figure 1: We anticipate that relational turbulence undermines the performance of collaborative planning, impedes supportive interactions, promotes perceptions of dominant and disaffiliative relational communication while inhibiting affiliation, and constrains disclosures to social network members. We offer these outcomes as illustrative, rather than exhaustive, examples of the effects of relational turbulence.

Reciprocal effects of communication

Thus far, we have described communication as a feature of episodes that contributes to relational turbulence, but we have neglected how communication between partners might influence the processes that precede the development of relational turbulence. Within relational turbulence theory, the reciprocal effects of interpersonal communication are pivotal in two ways. First, communication between partners can shape the cognitive appraisals and emotions that intensify reactivity to episodes. Second, communication can influence the relationship parameters that give rise to cognitive appraisals and emotional reactions. As discussed in the paragraphs that follow and depicted in Figure 1, these reciprocal influences can exacerbate the deleterious effects of relational uncertainty and interference from a partner or contribute to resilience within relationships.

The most immediate outcomes of communication are observed within experiences of specific episodes, where engagement and valence can have iterative effects on cognitive appraisals and emotional reactions. In general, interactions between partners influence cognitions and emotions as dialogue reinforces or modifies how people perceive their circumstances. The degree of communicative engagement and

the valence of messages may be especially consequential. Research has revealed that distributive communication strategies, which are confrontational and negatively valenced, can reinforce maladaptive cognitions, escalate negative emotions, and elicit more hostile communication in response (e.g., Keck & Samp, 2007). In addition, avoiding communication about relationship problems can increase rumination and promote more maladaptive cognitive appraisals (e.g., Cloven & Roloff, 1991). In fact, Courtright, Millar, Rogers, and Bagarozzi (1990) found that the incidence of behaviors indicating avoidance, withdrawal, and submission during interaction distinguished married couples who separated from those who remained together after marital counseling. Thus, communication can have a reciprocal influence on the very appraisals and emotions that motivate interaction in the first place.

Communication between partners also can shape the relationship parameters that catalyze experiences of specific episodes. Knobloch and Theiss (2011b) showed that individuals experience increased relational uncertainty following weeks where they avoided talking with their partner about the relationship, and decreased relational uncertainty in weeks after they had engaged in relationship talk. Another longitudinal study revealed that direct communication about jealousy is associated with decreased relational uncertainty in the following week (Theiss & Solomon, 2006a). These studies highlight the reciprocal influence that communication can have on relationship parameters, especially with regard to relational uncertainty. For example, individuals who are unsure about involvement can discover information that decreases *or* increases their questions (Knobloch & Satterlee, 2009), and communication during specific episodes may spark episodic relational uncertainty that informs their global relational uncertainty. More generally, we expect that communication that is engaged and positive attenuates relational uncertainty and facilitates interdependence, whereas communication that is avoidant, indirect, and negative amplifies relational uncertainty and undermines interdependence.

To the extent that partners use communication to promote cognitive reappraisal, regulate negative emotions, mitigate relational uncertainty, and enhance interdependence, communication can break the cycle that culminates in relational turbulence. Indeed, the intensified experiences that occur under conditions of relational uncertainty and interference create opportunities for partners to strengthen their relationship. When partners work through difficult experiences together, they can promote cohesion and intimacy; when partners use difficult experiences as a springboard for clarifying relational involvement or patterns of interdependence, they can improve the foundations of their relationship (see Solomon & Theiss, 2011). In this way, relational turbulence theory offers insight into the development of resilient relationships.

Discussion

Our aim of this paper was to propose a theory that refines and extends the claims of the relational turbulence model. Whereas the relational turbulence model positioned relational uncertainty and interference from partners as predictors of an array of

intensified cognitive, emotional, and communicative reactions to relationship events at moderate levels of intimacy, relational turbulence theory offers several extensions that clarify the underlying theoretical mechanisms in the model and broaden its explanatory power. As a starting point, relational turbulence theory confirms that transitions at any stage of relationship development have the potential to elicit the conditions that give rise to relational turbulence.

In addition, the theory formalizes the theoretical processes through which relational uncertainty and characteristics of interdependence shape the cognitive appraisals (A1) and emotional responses (A2) that emerge with regard to specific episodes. The theory also clarifies how cognitive appraisals (A3) and emotions (A4) predispose people to more or less communicative engagement and more positive or negative communication. In an extension of the relational turbulence model, relational turbulence theory suggests that the accumulation of intense relationship experiences coalesces into a global view of the relationship as chaotic and tumultuous (A5). A final advance offered by relational turbulence theory positions construal level (A6) and dyadic synchrony (A7) as theoretical mechanisms that mediate the effects of relational turbulence on a variety of personal, relational, and social outcomes. In this final section, we consider the implications, as well as the limitations and future directions, that follow from our articulation of relational turbulence theory.

Implications

We opened this essay by asserting that a theory of relational turbulence would not only address shortcomings in the relational turbulence model, but would also propel the accrual of knowledge about communication in personal relationships. Our theoretical reasoning offers a conceptual framework from which a variety of substantive hypotheses can be derived. The direct and indirect paths in Figure 1, which are deducible from the theoretical axioms and propositions, provide focal points for testing the theory. In addition, the theoretical architecture invites application to a variety of outcomes that may be affected by relational turbulence through construal level and dyadic synchrony. We also see opportunities to evaluate the role of relational turbulence in comparison to other global relationship qualities (i.e., intimacy, satisfaction, and commitment). This work would illuminate how the communication processes emphasized by the theory provide unique insight into individual, relational, and social functioning.

Advancing relational turbulence theory serves pragmatic ends as well. In our programs of research, we have studied the lives of women touched by breast cancer, military families coping with deployment, and couples managing depression, infertility, parenthood, and empty nesting. Although we hope our studies provide insight into these challenges, we remain unable to offer well-grounded advice for addressing them. Relational turbulence theory, however, can guide the development of interventions for couples navigating transitions. By identifying the theoretical processes underlying the consequences of relational uncertainty, disrupted interdependence, biased cognitive appraisals, and strong emotions, we have suggested points of

intersection where communication between partners might forestall the emergence of relational turbulence. Likewise, by identifying the cognitive and communicative processes that perpetuate and broaden the consequences of relational turbulence, we have identified sites where counseling interventions might attenuate these outcomes. Thus, we are especially encouraged by the potential for future interventions informed by this framework.

Relational turbulence theory primarily attends to the erosion of relational well-being, but it also has important implications for relational resilience. Transitions that occur in romantic relationships include relatively mundane changes in circumstances, hardships or challenges, and joyful new developments. In any case, transitions produce incongruities in partners' relational knowledge and patterns of interdependence. Left unchecked, those conditions can polarize particular experiences, contribute to an overall perception of the relationship as chaotic, and exert pervasive and negative effects on individual, relational, and social functioning. But when transitions prompt the realignment of relationship schemas and enhancements to interdependence, they catalyze relationship growth and promote cohesion. Thus, relational turbulence theory implies that partners who use communication to mitigate the volatility of specific episodes and/or to address relational uncertainty and interdependence can capitalize on relationship transitions to strengthen their bond.

As a final implication, we consider how relational turbulence and its outcomes affect people's physical and mental well-being. Individuals who are unable to plan for a bright future, participate in supportive interactions, enjoy affiliative relational messages, and call upon their social network have depleted resources for navigating everyday threats to well-being. More specifically, people experiencing relational turbulence may be hampered in their ability to procure and provide assistance in executing wellness behaviors such as eating nutritiously, sleeping adequately, exercising sufficiently, and managing stress effectively. Studies by our research teams have already linked parameters in the relational turbulence model to physiological stress (Priem & Solomon, 2011) and depression (Knobloch & Theiss, 2011a). Consequently, the effects of relational turbulence on well-being are an important implication for further consideration.

Limitations and directions for future research

Every theory omits important nuances, and our presentation of relational turbulence theory reflects inevitable choices. Some of the unresolved questions are quite specific. How might we improve measurement of relational uncertainty in light of the truncated variance observed in prior studies? When might relational uncertainty lead to positively biased cognitive appraisals, rather than the negative biases we emphasized? Do experiences of facilitation from a partner play a substantive role in emotional experiences, or should the focus be exclusively on interference? Are both construal level and dyadic synchrony needed to explain various outcomes, or might some outcomes be driven primarily by one or the other process? As we conclude this essay, we focus

on broader limitations that arise from our theoretical choices and directions for future research to address these issues.

First, we recognize that our reasoning privileges the individual, rather than the dyad, as the unit of analysis. Questions about relationship involvement and qualities of interdependence inherently arise from interactions between partners; however, relational turbulence theory emphasizes the individual's perceptions of these conditions. Likewise, our focus on cognitive appraisals, emotional reactions, and cognitive construals highlights processes that unfold within individuals as causes of outcomes that transpire between partners. Although dyadic synchrony captures the fluidity of interaction, our focus, like others before us (e.g., Giles et al., 1991), is on how perceptions and motivations that reside within people shape dyadic patterns. No doubt, the assumptions outlined in relational turbulence theory are complicated when they are stretched to accommodate the perspectives of both parties in a romantic relationship (e.g., McLaren & Solomon, 2014). We are eager to see future research take on those challenges, even while our theoretical perspective is primarily focused on individuals.

Second, our portrayal of the emergence of relational turbulence as a global relational quality is both a strongpoint and a shortcoming of relational turbulence theory. This aspect of the theory speaks to an age-old question concerning how discrete episodes of interpersonal communication, which are affected by proximal and temporary circumstances, amalgamate into more durable and pervasive relational sentiments. At the same time, our theory is silent on the algorithms that ultimately answer that question. How people aggregate specific observations into generalizations is a mystery at the heart of impression formation, attitude change, identity development, the onset of depression, and – of particular relevance to this essay – the growth and decay of romantic bonds. Relational turbulence theory emphasizes the accumulation of specific experiences as a force that can shift conceptions of a relationship, but it leaves the task of resolving the specifics of those transformations to future theorizing.

Finally, relational turbulence theory is decidedly postpositivistic, in that we deduce hypotheses by applying rules of logic to a system of axiomatic claims, and we assume that there are empirical regularities in the world that can be discovered through observation. As we embrace scientific realism, we neglect important questions about ethical conduct within relationships, the influence of cultural and economic diversity, and the pervasive effect of heteronormative and gendered assumptions about communication in romantic associations. Also, although our theoretical reasoning prioritizes cognitive and emotional processes within people, relational turbulence theory does not incorporate the phenomenological experience of partners in a meaningful way. Thus, relational turbulence theory offers a particular type of account for communication experiences, and leaves room for scholars to bring a variety of other epistemological frameworks to bear in future work.

Conclusion

Roloff (2015) cautioned that thinking theoretically does not mean referring generally to a theory that addresses a topic, it does not mean describing empirical findings that

align with hypotheses, it does not mean locating constructs within a path model, and it does not mean showing statistically significant patterns of mediation or moderation. Rather, thinking theoretically means using the logic of a theory to deduce hypotheses. Our goal in this essay was to elucidate our theoretical claims, offer them as a basis for deducing hypotheses, and ground our expectations within logic rather than empirical observations. Time and the accumulation of research will determine whether relational turbulence theory provides a fitting and useful account for the experience of turmoil, both episodically and as a global relationship quality, within romantic associations. More immediately, we offer relational turbulence theory as a foundation for theoretically grounded research on communication in romantic relationships.

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