Relational turbulence and social network engagement during the summer of COVID-19: A repeated measures, dyadic analysis

Kellie S. Brisini1 and Denise H. Solomon2

Abstract
Background/Purpose: Relational turbulence theory suggests that changes in and around relationships create the potential for relational turbulence when everyday routines and scripts are upended and communication becomes polarized. In turn, perceptions of a romantic relationship as chaotic or tumultuous can influence a person’s engagement with their social network. Alternately, previous research also suggests that engagement with friends and family has the potential to influence married partner’s relationship quality.

Research Design: This study examined these propositions among a sample of married couples (N = 64, 128 individuals) whose daily experiences and relationship dynamics changed during the COVID-19 lockdown period.

Results/Conclusions: Based on a 10-week, weekly diary repeated measures design, results suggest that relational turbulence and the valence of social network engagement may be mutually influential, such that (a) relational turbulence may influence the way in which married partners interpret communication with social network members and (b) the valence of communication with social network members may influence experiences of relational turbulence.

Keywords
COVID-19, marriage, relational turbulence, social network engagement, social support

1Department of Communication Studies, Louisiana State University, Baton Rouge, LA, USA
2Department of Communication Arts and Sciences, The Pennsylvania State University, University Park, PA, USA

Corresponding author:
Kellie S. Brisini, Department of Communication Studies, Louisiana State University, 136 Coates Hall, Baton Rouge, LA 70803-2804, USA.
Email: kbrisini1@lsu.edu
The 2019 novel coronavirus (COVID-19) was declared a pandemic by the World Health Organization in March of 2020. In response, many state governments issued shelter-in-place orders to try to stop the spread of what would become one of recent history’s most deadly diseases. As a result, families in the United States and around the world were faced with new routines, shared spaces, and few opportunities for recreation outside of the home. The social consequences of efforts to minimize the damage of COVID-19 to individual’s physical health had rippling effects on psychological and relational well-being (Gunther-Bell et al., 2020). Indeed, the drastic changes to everyday routines and spaces associated with the COVID-19 pandemic set the stage for relationship disruptions as families negotiated a new normal that isolated them from their social networks and blurred boundaries between work, school, and family life (Lebow, 2020; Schmid et al., 2020). Because these disruptions were especially pronounced for couples in which one or both partners stopped working outside the home, either due to job loss or a change to remote work (Gunther-Bell et al., 2020), this paper examines the marital and social network experiences of couples who experienced work-related disruptions as a result of the COVID-19 pandemic.1

Relational turbulence theory (Solomon et al., 2016) suggests that changes in circumstances surrounding romantic relationships may lead partners to evaluate their relationship as turbulent when repeated experiences of polarized, often negative, communication episodes coalesce into a general feeling of chaos or fragility, known as relational turbulence. In turn, the theory claims that relational turbulence influences partners’ ability to think positively and holistically about their relationship and negatively impacts conversational synchrony. As a result, relational turbulence challenges several aspects of social and relationship functioning. Although largely untested (but see Brisini et al., 2021; Brisini & Solomon, 2020), relational turbulence theory highlights disruptions in social network engagement as one potential consequence of relational turbulence (Solomon et al., 2016). In particular, the theory suggests that partners experiencing relational turbulence decrease social network engagement, though this proposition has yet to be tested longitudinally.

Social network engagement consists of both the extent to which individuals interact with network members and evaluations of that engagement as helpful or disruptive. In previous research, frequent contact with one’s social network has been shown to support marital satisfaction and success, particularly when network members are seen as helpful. Engagement with shared social networks provides opportunities for support and reaffirms relationship identities. Relationship support from a couple’s social network is associated with increased marital quality (Bryant & Conger, 1999) and marital success (Widmer et al., 2009). By this logic, experiences with social network members may reduce relational turbulence by promoting relationship maintenance and decreasing the amplitude of polarized episodes. Thus, this study clarifies associations between experiences of relational turbulence and social network engagement proposed by RTT using both cross-sectional and longitudinal analyses.

Whereas RTT positions relational turbulence as a relational quality that undermines social network engagement, research on social network engagement suggests that qualities of social network experiences may influence relational turbulence. The COVID-19
pandemic constituted an external factor that both dramatically affected the circumstances within and around married relationships and complicated engagement with social network members (Philpot et al., 2021). Thus, we focus on married partners during the early stages of the COVID-19 pandemic as a context for examining the associations between relational turbulence and qualities of social network engagement, and we use a repeated measures design that allows us to tease out the causal direction of these associations. In particular, we examined associations between relational turbulence and the frequency and valence of participants’ interactions with social network members from week-to-week in a sample of married couples ($N = 64, 128$ individuals) during the summer of 2020, when the COVID-19 pandemic was on the rise in the United States (i.e., the summer of COVID-19). In the following section, we elaborate on theory and research linking relational turbulence and social network engagement and present the hypotheses that are the focus of our study.

**Relational turbulence and social network engagement**

Relational turbulence refers to “a global and persistent evaluation of the relationship as tumultuous, unsteady, fragile, and chaotic that arises from the accumulation of specific episodes” (Solomon et al., 2016, p. 18). For many couples, “specific episodes” were made more fraught by the COVID-19 pandemic. Indeed, during the summer of COVID-19, married partners experienced heightened stress (Kowal et al., 2020) and anxiety (Gunther-Bell et al., 2020) associated with state mandated lockdowns, as well as increased childcare burden that stemmed from school closures and the move to remote learning (Adams & Todd., 2020). In addition, the switch to virtual work and school environments caused some parents to struggle with work-family balance, and those families reported higher levels of marital conflict and stress (Chung et al., 2020). Furthermore, the sudden change in the family’s daily routine provided ample opportunity for married partners to interfere with each other’s daily goals, which corresponded with increases in reports of relational turbulence for married partners (Knoster et al., 2020). Because relational turbulence theory says that relational turbulence arises as the result of repeated polarized interactions, relational turbulence is a relevant index of relationship functioning during the pandemic. In advancing relational turbulence theory, Solomon et al. (2016) proposed that relational turbulence affects married partners’ relational and social outcomes in two ways. First, according to the theory, relational turbulence negatively affects partners’ ability to uphold topic coherence, exchange speaking turns fluidly, and regulate conversational behaviors (Harrist & Waugh, 2002). In doing so, the global feeling of chaos in one’s marriage undercuts conversational synchrony and generates more inept and uncomfortable exchanges. Second, Solomon et al. (2016) suggested that when married partners experience relational turbulence, they are pre-occupied with the variable conditions in their daily life, and so lack the ability to generalize about their relationship’s history and future trajectory. This mode of thinking can lead to less creative and more pessimistic reasoning (Henderson et al., 2011). As a result of dyadic asynchrony and decreased psychological distance from relationship issues, partners may lack coherent relational schema (Harrist & Waugh, 2002; Henderson et al., 2011; Solomon et al., 2016). In turn, they may find it difficult to create a coherent narrative about their relationship for friends.
and family and, thus, be less likely to engage with social network members (Harrist & Waugh, 2002; Henderson et al., 2011; Solomon et al., 2016).

Few studies have examined the association between relational turbulence and individual’s willingness to engage with social network members. Those that have examined these associations provide mixed support. For example, Steuber & Solomon (2012) found that for couples facing issues with infertility, discomfort associated with fertility-related disclosure to social networks was linked to experiences of uncertainty about the relationship. In contrast, a cross-sectional study by Brisini et al. (2021) found that for married partners, relational turbulence did not significantly predict individual’s willingness to seek support from or engage with network members.

Relational turbulence may also cause partners to find network engagement less helpful or positive, if the chaos from their relationship hinders their ability to communicate effectively with social network members (Harrist & Waugh, 2002; Henderson et al., 2011; Solomon et al., 2016). For example, in a study of hypothetical support messages from social network members, Brisini et al. (2021) found that reports of relational turbulence were associated with increased defensive processing. In turn, defensive processing was associated with decreases in perceived support quality. Similarly, among dating partners, relational uncertainty and interference from a partner, relationship parameters that are theorized to lead to the experience of turbulence, are negatively associated with perceptions of a social network as helping their relationship (Knobloch & Donovan-Kicken, 2006). Finally, a dyadic study of married couples raising a child with autism spectrum disorder demonstrated negative associations between experiences of relational turbulence during the child’s transition to school and general perceptions of support for their marriage and their child from social network members, especially for husbands Brisini et al. (2021). Thus, theoretical and empirical logic suggest that relational turbulence is negatively associated with social network engagement and valence.

An alternative explanation for the association between social network engagement and relational turbulence is grounded in research on social support. A wealth of research suggests that members of romantic partners’ social networks have the potential to influence their relationship quality (for review, see Parks, 2013). In fact, couples’ social networks have demonstrated the ability to influence new and established dating relationships (Felmlee, 2001; Knobloch & Donovan-Kicken, 2006) and married partners (Widmer et al., 2009). Research on dating couples emphasized the influence of social network approval and liking on relationship satisfaction and success (Felmlee, 2001). Research on married partners has demonstrated the importance of social network support. For example, a longitudinal study by Bryant and Conger (1999) showed that positive relationship support from social network members was associated with increased marital success over the course of 3 years. In a study of over 1500 couples, Widmer et al. (2009) found that the size of people’s social network and the frequency of their contact with its members were negatively associated with marriage quality when network members were perceived to interfere in marital issues, particularly when one or both partners had inadequate conflict management skills. In contrast, if social networks were seen as supportive, density and frequency of contact with social network members were positively associated with marriage quality.
Although existing research has not focused on the influence of social network engagement on experiences of relational turbulence in married couples specifically, extant research sheds light on their association in two ways. First, previous research demonstrates linkages between social network experiences and relationship quality more generally and between social network involvement and aspects of relational turbulence in dating couples. In general, engagement with one’s social network is associated with improved marital adjustment (Parks, 2013). Among dating partners, Stein et al. (2020) demonstrated that uncertainty about one’s social network was positively associated with reports of relational uncertainty and negatively associated with relationship satisfaction and intimacy. Second, as described previously, prior studies have demonstrated associations between experiences of relational turbulence and perceptions of social network support as less helpful and, instead, a greater hindrance (e.g., Brisini & Solomon, 2020; Knobloch & Donovan-Kicken, 2006;).

To examine the relationship between network engagement and relational turbulence among married partners during the COVID-19 pandemic, we propose the following hypotheses (see Figure 1):
H1: For husbands and wives, weekly experiences of relational turbulence are negatively associated with the (a) frequency and (b) valence of social network engagement on average.

H2: For husbands and wives, weekly experiences of relational turbulence are negatively associated with the (a) frequency and (b) valence of social network engagement during the same week.

As discussed previously, relational turbulence theory suggests that relational turbulence negatively influences social network engagement, whereas research on social networks emphasizes how social network engagement positively influences relationship quality. Because analyses directed by the cross-sectional predictions of H1 and H2 do not shed light on the direction of influence between these variables, we present two distinct, but not mutually exclusive, longitudinal hypotheses.

H3: For husbands and wives, weekly experiences of relational turbulence are negatively associated with the (a) frequency and (b) valence of social network engagement 1 week later.

H4: For husbands and wives, the weekly (a) frequency and (b) valence of social network engagement are negatively associated with experiences of relational turbulence 1 week later.

Method

We recruited participants for our study in two steps. First, we used a Qualtrics nation-wide sample to recruit married, heterosexual couples across the United States for whom at least one partner had changed their working environment (either laid off or working from home) as a result of the COVID-19 pandemic to complete a pre-test survey (200 couples in total). Second, participants in that sample were given the opportunity to participate in a longitudinal portion of the project that consisted of 10 diary surveys and a post-test. We tested each of our hypotheses longitudinally, using the 64 couples (128 individuals) that completed the pre-test, at least three diary surveys, and a post-test. Although participants were only required to complete three diary surveys to be included in our analyses, most completed at least eight diary surveys (mode = 10; mean = 9.16, n = 1173 diaries). Thus, the data set contained relatively little missing data (<10%).

Participants in our sample identified as primarily European American (77%), with 7% identifying as Latinx, 10% identifying as Asian/Pacific Islander, and 2% identifying as African American. Ages ranged from 24 to 84 (mean = 44.14, SD = 13.79), and participants were married for an average of 15.53 years (SD = 12.30) at the time of the study. Most participants reported having at least one child (86%) and most had children under the age of 18 (62%).

To participate in the study, at least one spouse had to have lost a job or switched to a virtual work environment as a result of the COVID-19 pandemic. In our sample, 58% of couples reported that only one spouse had changed working arrangements (19% indicated that one spouse lost a job, 39% reported that one spouse moved to a telecommuting arrangement). The remaining couples (42%) reported that both partners were home during the workweek because of the pandemic (29% indicated that both partners were working
from home, 4% reported that both spouses had lost their jobs, 10% reported that one partner started telecommuting and the other lost a job).

**Procedures**

Data for this study were collected over the course of 12 weeks and included a pre-test, 10 weekly diary surveys, and a post-test. Participants in the pre-test received compensation through Qualtrics. Those who agreed to participate in the diary and post-test surveys could earn up to $50 ($100 per couple) on an Amazon gift card for completing all waves of the study. Participants completed separate informed consent documents for the pre-test survey and the diary and post-test surveys.

*Pre-test:* In the first week, participants were sent an invitation to participate in the study via an email with a link to an internet-based Qualtrics survey. After providing informed consent, participants completed measures of marital satisfaction and demographic characteristics. We assessed participants’ marital satisfaction at pre-test using five items from Norton’s (1983) Marriage Quality Index (MQI; e.g., “My marriage with my spouse makes me happy”). This measure evaluates the overall goodness of and contentment in the romantic relationship on 6-point Likert scales (1 = strongly disagree; 6 = strongly agree). We included the measure as a potential covariate because marital satisfaction, and the MQI in particular, has been highly correlated with relational turbulence in previous research (Solomon & Brisini, 2017).

*Diary surveys:* One week after completing the pre-test, participants received a diary survey via text message at 8 p.m. on Friday and were instructed to complete the survey immediately before going to bed that night. Weekly text messages included a link to a cell-phone specific version of the diary survey via Qualtrics online survey software. If the survey was not completed, the participant received a reminder text at 9 o’clock the following morning. Diary surveys were then administered every Friday night for the remaining 9 weeks. The surveys consisted of measures of relational turbulence and the frequency and valence of social network engagement.

As recommended by Solomon and Brisini (2017), we assessed participants’ perceptions of relational turbulence each week using four, 6-point, semantic differential scales. Participants responded to the stem “Indicate where your current relationship with your spouse falls along these dimensions,” and selected evaluations ranging from calm to turbulent, chaotic to stable (reverse coded), tumultuous to running smoothly (reverse coded), and peaceful to stressful (McLaren et al., 2011). Higher mean scores indicated higher levels of relational turbulence. The frequency with which participants engaged their social network was measured using a single item. Participants were asked, “Approximately how many times did you talk with family and friends that live outside of your home this week?” and could input any number value. To assess the perceived valence of social network engagement, participants evaluated six, 6-point semantic differential scales with the following stem, “Overall, this week, conversations with my family and friends were …” (Brisini & Solomon, 2020). Responses ranged from unhelpful to helpful, unsupportive to supportive, critical to approving, judgmental to accepting, annoying to
pleasing, and discouraging to encouraging. Higher scores indicated more positive perceptions of social network engagement that week.

**Post-test:** One week following the 10th diary survey, participants received the post-test via email link. Post-test measures replicated those of the pre-test.

**Analyses**

Before testing our hypotheses, we conducted measurement analyses and tests to identify demographic variables relevant to our hypotheses. We first conducted confirmatory factor analyses to assess the measurement properties of each of our operationalizations of substantive variables. We modeled husbands’ and wives’ scores on separate latent variables and conducted multi-level confirmatory factor analyses in Mplus for measures of weekly relational turbulence and weekly social network engagement, with diary scores nested in couples. We specified the following fit criteria: CFI >.95, RMSEA <.06, SRMR (between) < .08, and SRMR (within) < .08. To assess the measurement properties of our cross-sectional variables, we conducted confirmatory factor analyses using maximum likelihood estimation with robust standard errors and specified the following criteria for adequate fit: CFI >.95, RMSEA <.06, and SRMR <.08. Next, we examined the associations between demographic characteristics of our sample and variables of interest by conducting analysis of variance, computing correlations, and using t-tests to identify potential covariates.

To test H1–H4, we constructed actor–partner interdependence models (APIMs) using path analysis in Mplus with husbands’ and wives’ scores on the independent variable predicting their own and their partner’s scores on the dependent variables (see Figure 1). H1 and H2 predicted cross-sectional associations between husbands and wives scores for relational turbulence and frequency and valence of social network engagement. For both analyses, we examined an APIM with relational turbulence predicting husbands’ and wives’ own and their spouse’s reports of (a) frequency of social network engagement and (b) valence of the engagement. H1 examined associations between scores on the variables averaged across the 10 diary surveys. For H2, we assessed the association between husbands’ and wives’ reports of relational turbulence at time \( t \) and their own and their spouses’ frequency and valence of social network at time \( t \). The data were stacked such that each diary entry was considered a case (with 10 cases per dyad). Diaries for husbands and wives were treated as separate variables within the same case with covariances between husbands’ and wives’ scores on each variable (Kenny et al., 2006). A dummy-coded variable representing parental status was included in the models as a covariate with paths to the endogenous variables. Husbands’ and wives’ scores on each of the variables of interest were allowed to covary. We specified the following goodness of fit criteria: CFI >.90, RMSEA <.08, and SRMR <.08 (Kline, 1998).

To test H3, we conducted an analysis examining the between diary (cross-lagged) associations between relational turbulence and the frequency and valence of social network engagement. We used APIMs with husbands’ and wives’ scores for relational turbulence predicting their own and their partner’s scores for frequency and valence of social network engagement. We created a lagged variable of weekly relational turbulence...
to assess the associations between relational turbulence at time $t-1$ and the frequency and valence of social network engagement at time $t$ (1 week later). We also created lagged variables for social network engagement variables and included them in the model to account for scores on previous diaries.

To test H4, we conducted an analysis that mirrored H3, but this time, with frequency and valence of social network engagement at time $t-1$ as the independent variable and relational turbulence at time $t$ as the dependent variable, while controlling for relational turbulence at time $t-1$. As detailed previously, the data were stacked (i.e., weeks nested within dyads), parental status was covaried, and partners’ scores were allowed to covary. Again, we specified the following goodness of fit criteria: CFI >.90, RMSEA <.08, and SRMR <.08 (Kline, 1998).

### Results

As a first step, we examined the measurement properties of our scales using confirmatory factor analysis. Each of the models met the minimum fit criteria (see Table 1; contact the author for details). As a second step, we conducted preliminary analyses to identify potential covariates. Analyses of variance indicated that neither participant ethnicity nor type of work change was significantly related to any of our variables of interest for husbands or wives. Similarly, bivariate correlations suggested that age, years married, and marital satisfaction were not significantly related to husbands’ or wives’ weekly relational turbulence, frequency, and valence of social network engagement over the course of the study. Husbands’ and wives’ scores were significantly correlated on each of the variables of interest (see Table 2) and paired samples t-tests identified significant differences in husbands’ and wives’ average scores on the frequency, $t(64) = -1.74$, $p = .03$, and valence of social network engagement, $t(64) = 1.91$, $p = .02$, and marital satisfaction at pre-test, $t(64) = 2.10$, $p = .04$. Wives reported more frequent and more positively valenced social network engagement, but lower levels of marital satisfaction at pre-test (see Table 2).

| Table 1. Descriptive statistics for scales. |
|-------------------------------------------|
|                                          |
|                                          |
| Wives                                    |
|                                          |
| Husbands                                 |
|                                          |
| M  | SD  | α   | M  | SD  | α   | CFI | RMSEA | SRMR |
|------------------------------------------|
| Relational turbulence                    |
| 2.23 | 1.04 | .93  | 2.23 | 0.85 | .92  | .99 | .03   | .04/.03 |
| Frequency of SNE                         |
| 7.19 | 8.22 | —    | 8.45 | 7.44 | —    | —   | —     | —     |
| Valence of SNE                           |
| 4.98 | 0.96 | .96  | 5.24 | 0.69 | .94  | .97 | .04   | .03/.02 |
| Marital satisfaction (Pre-test)          |
| 5.13 | 1.08 | .95  | 5.33 | 0.77 | .92  | .99 | .09   | .03    |

Abbreviation: SNE, social network engagement.
Table 2. Correlations between mean scores across the weekly diaries on the variables of interest.

|                        | Relational turbulence | Frequency of SNE | Valence of SNE | Marital satisfaction |
|------------------------|-----------------------|------------------|----------------|---------------------|
| Relational turbulence  | .55***                | .00              | -.51***        | .15                 |
| Frequency of SNE       | -.02                  | .46***           | .18            | .02                 |
| Valence of SNE         | -.44***               | -.06             | .31***         | .17                 |
| Marital satisfaction   | .15                   | -.04             | .07            | .58***              |

Note. Correlations between wives’ scores on the variables of interest are listed above the diagonal; correlations between husbands’ scores on the variables of interest are listed below the diagonal. Correlations between husbands’ and wives’ scores on each of the variable are listed on the diagonal. Scores for marital satisfaction were measured at pre-test.

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

Given the added challenge of having children in the home during the COVID-19 pandemic (Günther-Bel et al., 2020; Kowal et al., 2020), we examined associations between our variables of interest and participants’ parental status using independent samples $t$-tests. For husbands, having children was associated with lower levels of marital satisfaction at pre-test ($M = 5.19$, $SD = 0.83$, $t (63) = 1.71$, $p = .04$) than participants who reported having no children ($M = 5.53$, $SD = 0.62$). Husbands with children also reported decreased frequency of social network engagement ($M = 4.82$, $SD = 1.18$, $t (64) = 2.60$, $p = .01$) and more negative social engagement ($M = 4.79$, $SD = 1.09$, $t (64) = 2.34$, $p < .02$), compared to husbands without children (frequency: $M = 5.45$, $SD = 0.55$, valence: $M = 5.34$, $SD = 0.61$). Like husbands, wives with children reported lower levels of marital satisfaction at pre-test ($M = 4.91$, $SD = 1.28$, $t (63) = 2.20$, $p = .02$) compared to participants who did not report having children ($M = 5.51$, $SD = 0.55$). Although most demographic differences represented in this study did not demonstrate significant associations with our variables, parental status was associated with significant differences for participants on multiple variables of interest. Thus, parental status was considered a covariate in substantive analyses.

H1 predicted that individuals’ average experiences of relational turbulence and the frequency and valence of their network engagement would be negatively related. To test this hypothesis, we calculated participants’ mean scores for each of the variables of interest across the 10 diary surveys. We then conducted a cross-sectional APIM with husbands’ and wives’ relational turbulence predicting their own and their partner’s frequency and valence of social network engagement (see Figure 2). The model met our fit criteria: CFI = 1.00, RMSEA = .01, SRMR = .04, $\chi^2 = 6.24$, $df = 6$, $p = .39$ (see Table 3 for results). Neither actor nor partner effects for relational turbulence were significantly associated with frequency of network engagement for husbands or wives (H1a). Path coefficients representing actor effects for valence of social network engagement were negative and significant (H1b). In other words, husbands’ and wives’ average relational turbulence were negatively associated with their own reports of the valence of their social network engagement. Associations between relational turbulence and valence of social
network engagement were not significant. Covariates were also not significant in the model. Thus, H1a was not supported, and H1b received partial support.

To test H2, we conducted analyses examining within-diary associations between relational turbulence and the frequency and valence of social network engagement using path analysis in Mplus (see Figure 2). The model demonstrated adequate fit: CFI = .97, RMSEA = .04, SRMR = .05, $\chi^2 = 48.60, df = 26, p < .001$. Results are reported in Table 3. For actor effects, examination of the path coefficients indicated negative and significant associations between husbands’ and wives’ reports of relational turbulence 1 week and the
valence of engagement with their social networks during the same week throughout the pandemic (H2b). In other words, when participants experienced higher levels of relational turbulence throughout the week, they also perceived their interactions with social network members to be less positive. In contrast to our hypothesis, husbands’ and wives’ relational turbulence was not significantly associated with the frequency of their social network engagement that week (H2b). Partner effects were not significant in the model. Therefore, H2a was not supported, and H2b was partially supported.

H3 predicted that relational turbulence 1 week would negatively influence the (a) frequency and (b) valence of social network engagement the following week (see Figure 2). The model met our criteria for adequate fit: CFI = 1.00, RMSEA = .00, SRMR = .03, $\chi^2 = 8.87$, df = 10, $p = .54$. Path coefficients are reported in Table 3. Results of the APIM analysis indicated no significant effects for parenting status or the frequency of social network engagement. With regard to actor effects, husbands’ relational turbulence 1 week was significantly and negatively associated with the valence of their social network engagement the following week (H3b). Wives’ relational turbulence was not significantly related to any of the variables of interest and no partner effects reached statistical significance. Again, frequency of social network engagement was not significantly associated with our independent variables (H3a). Thus, H3a was not supported, and H3b was supported only for husbands.

### Table 3. Tests of associations between relational turbulence and social network engagement.

|                      | Social network engagement | Wife intercept | Husband intercept | Wife actor effects | Husband actor effects | IVs | DVs |
|----------------------|---------------------------|----------------|-------------------|-------------------|----------------------|-----|-----|
| Average diary effects (H1) | Frequency                | 8.55*          | 11.16***          | .32               | -.32                 | .49*** | 30.09*** |
|                      | Valence                   | 6.06***        | 6.19***           | -.49***           | -.33***              | .49*** | .13*** |
| Within diary effects (H2) | Frequency                | 1.13**         | 1.21***           | .04               | -.01                 | .30**  | .54*** |
|                      | Valence                   | 1.75***        | 2.98***           | -.16*             | -.20***              | .30*** | .06  |
| RT predicting SNE (H3) | Frequency                | 7.34***        | 8.84***           | -.01              | -.02                 | .37*** | .34** |
|                      | Valence                   | 1.56***        | 2.32***           | -.05              | -.10**               | .37*** | .19  |
| SNE predicting RT (H4) | Frequency                | 1.04*          | 2.25***           | .01               | .13*                 | .55**  | .29*** |
|                      | Valence                   | 1.72**         | 2.25***           | -.13*             | -.14*                | .18*   | .29*** |

Note. Actor effects represent associations between husbands’ or wives’ own reports of frequency or valence of social network engagement and relational turbulence. Partner effects were omitted from the table because all were non-significant, with the exception of one path from wives’ frequency of SNE to husbands’ relational turbulence in tests of H4 ($\beta = .13$, $p < .05$). Covariances between husbands’ and wives’ scores on the independent and dependent variables are represented in the seventh and eighth columns.

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

valence of engagement with their social networks during the same week throughout the pandemic (H2b). In other words, when participants experienced higher levels of relational turbulence throughout the week, they also perceived their interactions with social network members to be less positive. In contrast to our hypothesis, husbands’ and wives’ relational turbulence was not significantly associated with the frequency of their social network engagement that week (H2b). Partner effects were not significant in the model. Therefore, H2a was not supported, and H2b was partially supported.

H3 predicted that relational turbulence 1 week would negatively influence the (a) frequency and (b) valence of social network engagement the following week (see Figure 2). The model met our criteria for adequate fit: CFI = 1.00, RMSEA = .00, SRMR = .03, $\chi^2 = 8.87$, df = 10, $p = .54$. Path coefficients are reported in Table 3. Results of the APIM analysis indicated no significant effects for parenting status or the frequency of social network engagement. With regard to actor effects, husbands’ relational turbulence 1 week was significantly and negatively associated with the valence of their social network engagement the following week (H3b). Wives’ relational turbulence was not significantly related to any of the variables of interest and no partner effects reached statistical significance. Again, frequency of social network engagement was not significantly associated with our independent variables (H3a). Thus, H3a was not supported, and H3b was supported only for husbands.
H4 predicted that the (a) frequency and (b) valence of husbands’ and wives’ social network engagement 1 week is negatively associated with relational turbulence the following week (see Figure 3). The proposed model fit the data: CFI = 1.00, RMSEA = .01, SRMR = .04, $\chi^2 = 6.24$, $df = 6$, $p = .39$. For actor effects, the valence of wives’ social network engagement 1 week was negatively associated with relational turbulence the following week (H4b). Results for husbands followed the same pattern. In other words, when husbands and wives reported more positively valenced social interactions 1 week, they reported lower levels of relational turbulence the following week. Frequency of social network engagement was not significantly related to relational turbulence (H4a), with one exception. In contrast to our hypothesis, we found one significant partner effect: when wives reported greater frequency of social network engagement 1 week, this was associated with higher levels of relational turbulence for their husband the following. Partner effects were not significant for valence of social network engagement. Therefore, H4a was not supported, and H4b was partially supported.

**Discussion**

Relational turbulence theory (Solomon et al., 2016) suggests that changes in and around relationships create the potential for relational turbulence when everyday routines and scripts are upended and communication becomes polarized. In turn, perceptions of a romantic relationship as chaotic or tumultuous can influence a person’s engagement with their social network. Alternately, previous research also suggests that engagement with friends and family has the potential to influence married partner’s relationship quality (Parks, 2013). This study examined these propositions among a sample of married individuals whose daily experiences and relationship dynamics changed when one or more partners shifted from working out of the house to being home full time during the
COVID-19 lockdown period. Because the disruption of living conditions imposed by COVID-19 was an external factor that had the potential to spark relationship turbulence and affect social network engagement, these historic conditions afforded an opportunity to examine how relational turbulence and features of social network engagement are associated within marriages.

To test our hypotheses, we used weekly diaries to collect reports of relational turbulence and social network engagement, which produced a repeated measures data set spanning 10 weeks in the summer of 2020. This research design allowed us to evaluate the associations between relational turbulence and social network engagement by aggregating the weekly data, examining associations within each week (nested within dyads), and evaluating alternative models in which relational turbulence predicted social network engagement, and vice versa, from 1 week to the next. By spanning a 10-week period, we mitigated the possibility that our investigation would capture an idiosyncratic moment in a highly dynamic period of time. Collecting diaries weekly during this time period afforded us the increased power of a repeated measures design, while also allowing us to test overtime associations that provide insight into the direction of causal effects.

Across the tests of our four hypotheses, results suggest that relational turbulence and the valence of social network engagement may be mutually influential, such that (a) relational turbulence may influence the way in which married partners interpret communication with social network members and (b) the valence of communication with social network members may influence experiences of relational turbulence. In the cross-sectional analyses, analyses of the data aggregated across the 10-weekly diaries (H1) and also within-weeks (H2) showed negative associations between relational turbulence and the valence of social network interactions. Likewise, the week-to-week analyses revealed a negative association between relational turbulence in 1 week and the valence of social network experiences the next week for husbands (H3), and a negative association between the valence of social network experiences and relational turbulence the next week (for both husbands and wives; H4). Because the cross-lagged analyses control for the level of the dependent variable in the preceding week, they offer strong evidence that incremental changes in relational turbulence or the valence of social network engagement are mutually influential.

In contrast, associations between relational turbulence and the frequency with which participants communicated with their social networks were not significant, with the exception of a positive association between frequency of wives’ social network interaction in 1 week and husbands’ relational turbulence the following week. These findings add to a growing body of work suggesting that the frequency of social network interaction is not as consequential as the quality of those interactions. For example, Brisini et al., 2021 found that married partners who reported higher levels of relational turbulence were no less likely to disclose to their social networks about relationship issues, but they were more likely to demonstrate reactance in response to support messages, and in turn evaluate support messages as lower in quality. Similarly, among a sample of married parents of children with autism spectrum disorder, Brisini and Solomon (2020) found that increased relational turbulence was associated with perceptions of social network members as less helpful for their marriage and their parenting. Whereas relational turbulence theory
(Solomon et al., 2016) emphasizes the potential for relational turbulence to decrease the frequency of disclosures about the marriage to social network members, evidence to date suggests otherwise. Rather than decrease the frequency with which romantic partners engage with social network members, relational turbulence seems to negatively impact perceptions of those interactions. Whether communication with social network members is less positive, or simply perceived more negatively, is a question the merits further study.

The only significant association between relational turbulence and the frequency of communication with social network members that was revealed by our analyses indicated that more frequent network engagement among wives in 1 week corresponded with more relational turbulence for their husband the following week. We are reluctant to over-interpret this potentially idiosyncratic finding, but it is noteworthy that it ran counter to our prediction. Whereas we anticipated interacting with social network members to alleviate some of the conditions that contribute to relational turbulence in marriages, our results suggested that husbands subsequently experienced more turbulence after their wives communicated with people outside their marriage. One possibility is that this pattern reflects the conditions of the COVID-19 lockdown, in which people were discouraged from engaging others outside their immediate family. Although speculative, we wonder if women who spent time with friends and extended family were doing so because of stressful exigent circumstances, which contributed to subsequent relational turbulence, or if their engagement with people outside the family sparked disagreements within the marriage. More generally, this finding reminds us that frequency of engagement, per se, is a poor proxy for details on the quality of social network interactions.

Notably, results of the study identified few partner effects. Among this sample, husbands’ and wives’ relational turbulence affected how they experienced social network engagement, but they were not influenced by their partner’s turbulence. In addition, a spouse’s social network engagement neither helped nor hindered participants’ experiences of relational turbulence (with one exception). Brisini and Solomon (2020) found similar results in a cross-sectional study of perceived support for parents of children with autism spectrum disorder. In that study, husbands’ and wives’ reports of relational turbulence were negatively associated with their own evaluations of the helpfulness of their social network members, but not their spouse’s evaluations. A wealth of research suggests that support from one’s social network contributes to relationship quality (e.g., Bryant & Conger, 1999; Felmlee, 2001; Sprecher & Felmlee, 2000; Widmer et al., 2009); however, much of the work in this area does not include partner effects. Although an individual could seemingly be happy that their spouse is spending time with friends or frustrated that a spouse is taking time away from the family or other obligations, data from this study suggest that husbands and wives may not be directly influenced by their partner’s social network engagement. Although speculative, we wonder if associations between social network experiences and couple well-being are mediated through their effects on individuals. Future research might examine more closely the outcomes of social network involvements for individuals that may ultimately contribute to marital health.

Results of this study have practical implications for married partners and their social networks. The study suggests that married partners’ relationship experiences both influence and are influenced by the valence of their engagement with members of their
social networks. Thus, married partners’ friends and family might help the couple navigate difficult transitions, such as a pandemic, more successfully by engaging in positive and supportive interactions. On the other hand, married partners should be mindful that challenges within their own relationships might infuse or color their experiences with friends and extended family members. At a more general level, the results of this study underscore how the relationships of married partners are embedded within—both affecting and affected by—the social relationships that partners have with others.

The results of the study are qualified by the strengths and limitations of our methodology. We recruited our initial sample using a Qualtrics pre-paid panel and allowed participants to opt-in to the diary studies. This strategy gave us access to a nation-wide sample of married partners from across the United States; however, the sample is not random. In addition, the use of panels limited our sample to married, rather than dating/cohabiting couples. Given the lack of formal commitment between dating partners, results may vary across this population. Moreover, criteria for participation in the study required that one or both married partners had moved from working outside the home to being inside the home (either working remotely or unemployed) during the lockdown stages of the pandemic. While this criterion allowed us to focus on couples that had experienced significant shifts in their day-to-day experiences, it also contributed to a smaller sample size and left out segments of the population that were already unemployed. In particular, we note that our final sample was generally older and married longer than participants in our initial sample who did not volunteer for the diary study, and our sample was not culturally diverse. In addition, due to the restrictive sample size, we were unable to include a large number of relationship covariates into our analytical models. We also did not account for the content of the participants’ discussions with their network members. Doing so may further reveal the complexity of married partners’ engagement with social networks. Finally, the repeated measures research design allowed us to increase the power of our analyses, controlling for week-to-week levels of the variables in our substantive analyses; however, repeated measure diary studies run the risk of measurement effects and fatigue. Alternative methods for assessing mutual influence in the association between relational turbulence and social network engagement, such as experimentally manipulating qualities of social network interactions, might provide an alternative, albeit more intrusive, means to test these associations.

We opened this paper by juxtaposing two lines of work: (a) the prediction advanced by Solomon et al. (2016) suggesting that relational turbulence would undermine social network engagement, and (b) research on social networks and romantic relationships indicating the potential benefits of social network engagement for dating and married couples. Using a repeated measures, 10-week diary research design, we were able to clarify that covariation between these constructs may be limited to social network valence, and not frequency, and that this relationship is mutually causal over time. Our findings take on added significance when located in the historic conditions that households faced in the summer of 2020. In a context in which social network engagement was constrained by remote work and education, as well as widespread community lockdowns, positive interactions with friends and family helped people mitigate feelings of chaos, instability,
and turmoil in their marriage. We see replicating these overtime effects when couples are not navigating pandemic living conditions as a valuable direction for future research.

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**Data availability**
The data used in the research are available upon request. The data can be obtained by emailing: kbrisini1@lsu.edu. The materials used in the research are available upon request. The materials can be obtained by emailing: kbrisini1@lsu.edu.

**ORCID iDs**
Kellie S. Brisini  
https://orcid.org/0000-0002-9682-2820
Denise H. Solomon  
https://orcid.org/0000-0001-5535-0137

**Notes**
1. This focus is in no way intended to suggest that other couples were not also dramatically influenced by the pandemic. Essential employees and front-line workers who did not experience job loss or remote work were certainly also taxed by the circumstances imposed by COVID-19. At the same time, individuals who continued working outside the home retained those social network engagement opportunities and employment routines to a greater extent than couples affected by job loss and/or a change to remote work.
2. Qualtrics recruits participants based on the researchers’ inclusion criteria and incentivizes participation using cash payments, gift cards, and vouchers. Incoming data are monitored for issues using completion trackers, completion timers, and manipulation checks (see Brandon, Long, Loraas, Mueller-Phillips, & Vansant, 2013).
3. Participants who completed the diary portion of the study were significantly older (M = 44.14, SD = 13.79) than those who did not participate (M = 37.64, SD = 9.27, t(314) = -5.01, p < .001) and had been married longer (participating: M = 15.53, SD = 12.30, non-participating: M = 12.31, SD = 7.58, t(314) = -2.85, p < .01).
4. This study was part of a larger project. As such, participants completed measures unrelated to the current study, including measures of relationship-focused communication with their spouse and other qualities of relationships not examined in this study.
5. Participants could request to receive diaries and reminders via email.
6. To test for empirical distinguishability, we compared our distinguishable models to models in which husbands’ and wives’ effect scores were constrained to be equal. In each model (H1–H4), unconstrained paths for husbands and wives provided a better fitting model.

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