Routledge
Taylor & Francis Group

Southern Communication Journal

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rsjc20

Relational Turbulence: A Latent Model Test of Theoretical Propositions

San Bolkan, Alan K. Goodboy, Matt Shin & Karly R. Quaack

To cite this article: San Bolkan, Alan K. Goodboy, Matt Shin & Karly R. Quaack (2023): Relational Turbulence: A Latent Model Test of Theoretical Propositions, Southern Communication Journal, DOI: 10.1080/1041794X.2023.2167108

To link to this article: https://doi.org/10.1080/1041794X.2023.2167108

SOUTHERN COMMUNICATION JOURNAL
https://doi.org/10.1080/1041794X.2023.2167108

Relational Turbulence: A Latent Model Test of Theoretical Propositions

San Bolkan[a], Alan K. Goodboy[b], Matt Shin[b], and Karly R. Quaack[c]

[a]Department of Communication Studies, California State University, Long Beach, California, USA; [b]Department of Communication Studies, West Virginia University, Morgantown, West Virginia, USA; [c]Department of Communication Studies, University of Texas, Austin, Texas, USA

ABSTRACT

In this study we simultaneously tested theoretically specified predictions from relational turbulence theory (RTT) using a fully latent structural regression model. A total of 807 college students in dating relationships responded to survey items measuring variables embedded in RTT, including relationship parameters (relational uncertainty and interdependence), biased cognitive appraisals, emotions, relational communication, and relational turbulence. Results from structural equation modeling revealed that RTT predictions were consistent with our data, but a respecified model with less restrictive constraints was a better fit. This less restrictive model allowed relational uncertainty to predict negative affect, and partner interference and facilitation to predict biased cognitive appraisals. Propositions of RTT were sustained.

KEYWORDS

Relational turbulence theory; relational turbulence model; relational uncertainty; interdependence

The study of interpersonal relationships has been the focus of much communication research over the course of several decades (Vangelisti, 2011). Of the many perspectives that scholars take, examining the impact of relational uncertainty and partner interdependence on downstream perceptions in romantic relationships has been particularly important for understanding stability and turmoil in relational unions (Goodboy et al., 2020; Solomon & Knobloch, 2004; Solomon et al., 2016). To this end, researchers have discovered a wealth of outcomes associated with uncertainty and interdependence ranging from cognitive, to emotional, to communicative consequences (Goodboy et al., 2020; Solomon et al., 2016). Scholars have incorporated these constructs into the relational turbulence model (RTM) to document their associations (Knobloch et al., 2007; McLaren et al., 2011, 2012; Solomon & Knobloch, 2004), and explicit theoretical predictions about the causal order of these variables have recently been informed by relational turbulence theory (RTT; Solomon & Brisini, 2019; Solomon et al., 2016). Specifically, RTT scholars have argued that relational uncertainty and partner interdependence impact biased cognitive appraisals and negative affect, respectively, and that biased cognitive appraisals and negative affect, in turn, influence communication outcomes, which together culminate in relational turbulence defined as "a global and persistent evaluation of the relationship as tumultuous, unsteady, fragile, and chaotic" (Solomon et al., 2016, p. 518).

Despite advancements in the study of relational turbulence, empirical confirmations of RTT's predictions and processes remain warranted. Indeed, more comprehensive examinations of its predictions using fully latent structural regression models are needed to examine variables as they function in concert with one another while also removing measurement error from the structural relationships (which, consequently, makes parameter estimates less biased). Specifically, scholars might more fully test RTT's propositions in a structural regression model that simultaneously includes

CONTACT San Bolkan san.bolkan@csulb.edu California State University, 1250 Bellflower Boulevard MS2009, AS-350, Long Beach, California 90840-2009, USA

relationship parameters (i.e., relational uncertainty and interdependence), reactions to experiences within the relationship (i.e., biased cognitive appraisals, intensified emotions, and communicative engagement), and their cumulative effects on relational turbulence (see, Solomon et al., 2016). Thus, the purpose of our study was to test propositions 1–5 from RTT in one structural model to examine the tenability of its theoretical predictions in a more comprehensive test of the multivariate, intertwined specifications.

Relational uncertainty, partner interdependence, and experiences of turbulence

RTT seeks to explain why individuals in romantic relationships perceive these as unstable (Knobloch & Carpenter-Theune, 2004). To this end, RTT proposes that experiences of relational turbulence begin to arise from the accumulation of specific episodes originating from two relationship parameters: relational uncertainty and partner interdependence. Relational uncertainty refers to the "degree of confidence people have in their perceptions of involvement within close relationships" (Knobloch & Solomon, 1999, p. 264), and is a function of self, partner, and relationship uncertainty. According to Knobloch and Solomon (1999), self uncertainty is reflected in a person's doubts regarding their attitudes about a relationship. Similarly, partner uncertainty references uncertainty that a person might have about their partner's attitudes toward the relationship. The experience of relationship uncertainty refers to doubts surrounding a relationship from a dyadic standpoint and is a function of ambiguity with respect to the status of a relationship (Knobloch & Solomon, 1999, 2005).

Interdependence refers to the mutual influence partners exert on one another (Knobloch & Solomon, 2004). Researchers argue that interdependence occurs when people interweave their daily activities as they develop intimacy in their relationships (Solomon & Knobloch, 2001; Solomon & Theiss, 2008). With increases in intimacy, people have more opportunity to assert themselves into their partners' routines, for better or worse (Solomon et al., 2016). Scholars define interference as occurring when individuals disturb or hinder their partner's everyday activities or routines (Knobloch & Solomon, 2004). Facilitation, on the other hand, occurs when individuals help their partners engage in, or accomplish, their daily activities or routines.

RTT Propositions

RTT scholars postulate that experiences of relational uncertainty and partner interdependence influence romantic partners to react in varying ways to specific interaction episodes (Solomon et al., 2016). That said, similar to previous investigations of individuals' global experiences within a relationship (e.g., Knobloch et al., 2007; Knobloch & Theiss, 2010; Solomon & Brisini, 2019), our aim was to study individuals' reactions more broadly as relational episodes coalesce into general cognitive appraisals, intensified emotions, and communication behaviors. Thus, we investigated individuals' general perceptions of their experiences arising from relational episodes instead of reactions to specific episodes.

Proposition 1

RTT scholars have argued that "relational uncertainty is uniquely relevant to cognitive appraisals" (p. 513) and should therefore exhibit a distinctive positive association with "distorted assessments of a situation" (p. 512). This prediction forms the basis for proposition 1 of RTT which states: "Through its effect on comprehension, relational uncertainty causes people to form more biased cognitive appraisals of specific episodes" (Solomon et al., 2016, p. 513). In this study, we operationalized biased cognitive appraisals as individuals' threat appraisals of relationship talk which measures the degree of threat people perceive to accompany conversations about the status of a relationship (Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss, 2011).

H1: Relational uncertainty will positively predict threat appraisals of relationship talk.

Proposition 2

Solomon et al. (2016) argued that interference and facilitation are uniquely situated to impact intensified emotional experiences in the context of RTT. This conclusion forms the basis for proposition 2 which states: "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" (Solomon et al., 2016, p. 515). In this study, we operationalized heightened emotional arousal as individuals' general experiences of negative affect resulting from interactions with their partners. The basis for our prediction stemmed from the work of Solomon and Brisini (2017) who found a positive association between interference and negative affect, and a negative association between facilitation and negative affect.

H2: Partner interference will positively predict negative affect whereas partner facilitation will negatively predict negative affect.

Propositions 3 & 4

In modeling the causal processes of RTT, the subsequent step involves specifying the effects of biased cognitive appraisals and intensified emotions on relational communication outcomes (Solomon et al., 2016). Specifically, proposition 3 states: "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" (Solomon et al., 2016, p. 517). Similarly, proposition 4 states: "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" (Solomon et al., 2016, p. 517). In this study, we operationalized communication outcomes as these relate to engagement in enacted relationship talk (Knobloch & Theiss, 2011; Theiss & Nagy, 2013) and individuals' engagement in direct communication about relational irritations (Solomon & Brisini, 2017; Solomon et al., 2019; Theiss & Solomon, 2006).

We predicted that biased cognitive appraisals (i.e., threat appraisals of relationship talk) would be negatively associated with enacted relationship talk and directness of communication. In support of this prediction, Knobloch and Solomon (2002) argued that relational partners are less likely to seek information directly when they anticipate encountering undesirable or unpleasant information. Similarly, Baxter and Wilmot (1985) noted that in cases where relationship talk may be seen as disruptive to the current situation or would make individuals feel vulnerable, people tend to view these conversations as difficult. Conversely, we predicted that negative affect would be positively associated with enacted relationship talk and directness of communication. Research indicates that individuals are likely to bring up issues with partners when the irritations they experience are considered severe and threatening (Theiss & Solomon, 2006). Additionally, scholars have found that directness of communication is positively associated with the intensity of negative feelings and perceptions of relational damage associated with hurtful episodes (Theiss et al., 2009).

H3: Threat appraisals of relationship talk will negatively predict enacted relationship talk and directness of communication about irritations.

H4: Negative affect will positively predict enacted relationship talk and directness of communication about irritations.

Proposition 5

RTT asserts that relational turbulence is the consequence of the cumulative effects from individuals' experiences of relational episodes characterized by biased cognitive appraisals, intensified emotions, and polarized communication (see, Solomon et al., 2016). Specifically, proposition 5 of RTT states:

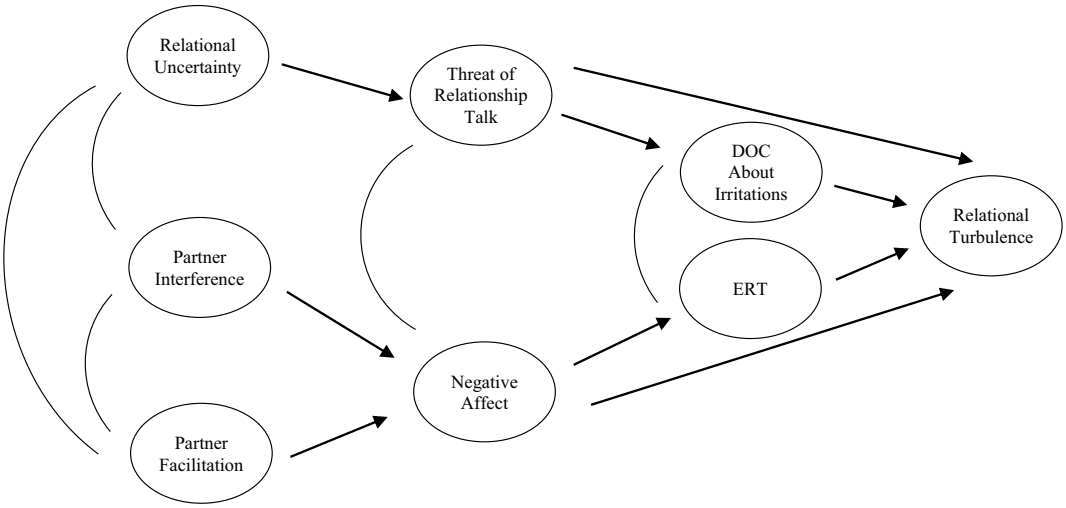

Figure 1. Relational turbulence theory. Note. Self, partner, and relationship uncertainty are subsumed under the relational uncertainty variable. ERT = Enacted relationship talk, DOC = Directness of communication.

"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" (Solomon et al., 2016, p. 519). In accordance with RTT, we hypothesized that experiences of relational turbulence would accumulate from biased cognitive appraisals and intensified negative affect We also predicted that relational turbulence would be increased by directness of communication about irritations (Solomon & Brisini, 2017) and diminished by enacted relationship talk. According to Knobloch and Theiss (2011), this latter type of communication has the potential to help people negotiate their experiences within relationships which may promote relational wellbeing.

H5: Relational turbulence will be negatively predicted by enacted relationship talk, and positively predicted by threat appraisals of relationship talk, negative affect, and directness of communication about irritations.

Considering the relationships predicted in hypotheses 1–5, we offered a theoretical latent variable path model (see Figure 1) as a more comprehensive replication test of the specifications of RTT (Solomon et al., 2016).

Method

Participants and procedure

As part of a larger project, participants were recruited from classrooms in universities on the West Coast, East Coast, and in the South (after gaining approval from the appropriate institutional review boards). A total of 807 college students in romantic relationships participated in return for minimal extra credit. Individuals in this study were 273 men (33.8%) and 527 women (65.3%). Four individuals chose a nonbinary response (0.5%), and three individuals did not answer the question (0.4%). Participants had ages ranging from 18 to 43 (M = 20.53, SD = 2.46) and reported being in relationships for an average of 1.69 years (SD = 1.53). Regarding race, 516 individuals were White (63.9%), 116 were Latinx (14.4%), 72 were Asian (8.9%), 45 were Black (5.6%), 23 were Middle Eastern (2.9%) 16 reported as mixed-race (2.0%), 10 were "other" (1.2%), six were Pacific Islander (0.7%), one

respondent reported as Native American (0.1%), and two individuals did not provide responses to this question (0.2%). Seven hundred and fifty-seven participants reported being in an opposite-sex relationship (93.8%), 40 respondents reported being in a same-sex relationship (5.0%), two respondents reported being in a relationship where one individual was nonbinary (0.2%), two participants reported being in a relationship where both individuals were nonbinary (0.2%), and six participants chose not to provide information about their sex, their partner's sex, or both (0.7%). Individuals who took part in this study were directed to an online survey where they reported perceptions of their romantic relationships as they experienced these over the course of a month using the measures reported below.

Instrumentation

Reliability for most of the measures was calculated using McDonald's omega (ω) with 95% confidence intervals generated from 5000 bootstrap samples (Goodboy & Martin, 2020). Directness of communication was measured with two items, and reliability was calculated using the Spearman-Brown statistic.

Relational uncertainty

Relational uncertainty was measured using the relational uncertainty scale (Solomon & Brisini, 2017). This scale consists of 18 items and measures three dimensions of relational uncertainty including self, partner, and relationship uncertainty (six items each). Responses ranged from (1) *strongly disagree* to (6) *strongly agree*. Items were adapted to fit the context of a general relationship (instead of marriage). An example item from the self uncertainty portion of the scale includes "I sometimes wonder whether or not I want the relationship to work out in the long run" (ω = .91, CI: .90, .92; M = 2.77, SD = 1.24). An example item from the partner uncertainty portion of the scale includes "I sometimes wonder whether or not my partner is strongly committed to me" (ω = .93, CI: .92, .94; M = 2.94, SD = 1.31). An example item from the relationship uncertainty portion of the scale includes "I sometimes question whether or not my relationship is a romantic one" (ω = .87, CI: .85, .88; M = 2.91, SD = 1.15).

Relational uncertainty is global construct that covers the totality of these three sources of uncertainty in romantic relationships (Knobloch & Carpenter-Theune, 2004) which makes it appropriate to model as a bifactor measurement model specifying a general factor of relational uncertainty (Goodboy et al., 2021). A bifactor exploratory structural equation model (bifactor-ESEM) allows the sources of relational uncertainty (self, partner, relationship) to be evaluated as a multidimensional latent variable with an essentially unidimensional general factor of relational uncertainty captured at the theoretical level (Berger & Bradac, 1982).

Interdependence

Interdependence was measured using instruments to assess participants' perceptions of partner interference and facilitation of daily routines (Knobloch & Solomon, 2004; Solomon & Brisini, 2017). Each scale consists of five items with response options ranging from (1) *strongly disagree* to (6) *strongly agree*. Items were adapted to include general partner statements instead of referring to a spouse. An example item from the interference scale includes "My partner disrupts my daily routine" (ω = .91, CI: .90, .93; M = 2.39, SD = 1.14). An example item from the facilitation scale includes "My partner helps me to use my time well" (ω = .90, CI: .88, .91; M = 4.26, SD = 1.10).

Biased cognitive appraisals

Biased cognitive appraisals were operationalized as threat appraisals of relationship talk using items from the relationship threat scale (Knobloch & Carpenter-Theune, 2004). Similar to previous operationalizations (e.g., Knobloch & Theiss, 2011), the stem for these statements was "Having a conversation about the nature of the relationship would," with the following declarations: (a) "threaten the relationship," (b) "have a negative effect on the relationship," and (c) "damage the

Table 1. Correlations between latent variables.

Latent Variable	1	2	3	4	5	6	7
1. Relational uncertainty							
2. Interference	.51						
3. Facilitation	−.40	−.52					
4. Negative affect	.57	.48	−.30				
5. Threat of relationship talk	.55	.49	−.44	.68			
6. DOC about irritations	^{n} −.08	^{n} < −.02	.13	.08	^{n} −.03		
7. Enacted relationship talk	−.40	−.26	.45	−.16	−.33	.54	
8. Relational turbulence	.49	.40	−.38	.54	.54	.09	−.19

Note. The superscript *n* indicates a nonsignificant correlation ($p > .05$, two-tailed). DOC = Directness of Communication.

relationship." Responses could range from (1) *strongly disagree* to (6) *strongly agree* ($\omega = .96$, CI: .95, .97; $M = 2.25$, $SD = 1.36$).

Intensified emotions

We measured intensified emotions by assessing participants' experiences of negative affect in their relationships using items from the positive and negative affect schedule (Watson et al., 1988). Our assessment included 10 negatively valenced emotions, participants were asked to disclose the extent to which they experienced these in their relationships with response options ranging from (1) *strongly disagree* to (6) *strongly agree*. Examples of the negative emotions used in this scale include "distressed," "irritable," and "afraid" ($\omega = .90$, CI: .89, .92; $M = 2.16$, $SD = 1.02$).

Communication engagement

Communication engagement was operationalized as enacted relationship talk and directness of communication about relational irritations measured with responses ranging from (1) *strongly disagree* to (6) *strongly agree*. Enacted relationship talk was measured with items from Knobloch and Theiss's (2011) three-item scale. An example includes "We have actively discussed the future of the relationship" ($\omega = .86$, CI: .83, .88; $M = 4.33$, $SD = 1.28$). Directness of communication was measured with items from Theiss and Solomon (2006) including "I have explicitly told my partner about behaviors that irritate me" and "I have had a direct conversation with my partner about my irritations" (Spearman–Brown = .93, $M = 4.03$, $SD = 1.49$).

Relational turbulence

Relational turbulence was measured using items from McLaren et al. (2012). Specifically, participants responded to four, six-point semantic differentials regarding their perceptions of their relationships anchored with "chaotic/stable" (reverse coded), "calm/turbulent," "tumultuous/running smoothly" (reverse coded), and "peaceful/stressful" ($\omega = .89$, CI: .87, .90; $M = 2.65$, $SD = 1.20$). Correlations between latent variables are in Table 1.

Results

Measurement models

Before examining structural path models, we evaluated the global fit of our proposed measurement model. First, we estimated contrasting measurement models to determine the global fit of a bifactor-ESEM specification for relational uncertainty. To retain the measurement model portion for relational uncertainty, we evaluated the global fit of a 3-factor independent clusters CFA, a 3-factor ESEM, a bifactor CFA, and the expected bifactor-ESEM using robust maximum likelihood estimation. Results indicated that the bifactor-ESEM should be retained (Y-B χ^2 (87) = 249.689, $p < .001$; CFI = .978; SRMR = .018; RMSEA = .048 [.041, .055]; BIC = 42659.351) over the 3-factor CFA (Y-B χ^2 (132) = 892.111, $p < .001$; CFI = .899; SRMR = .053; RMSEA = .084 [.079, .090]; BIC = 43276.603),

Table 2. Standardized parameter estimates for the bifactor-ESEM solution.

Items	GF-Relational	Self	Partner	Relationship
Self Uncertainty				
Item 1 (SU_1)	**.567**	**.571**	.015	−.345
Item 2 (SU_2)	**.602**	**.652**	−.007	−.273
Item 3 (SU_3)	**.618**	**.493**	.043	.063
Item 4 (SU_4)	**.549**	**.604**	−.049	.165
Item 5 (SU_5)	**.564**	**.497**	−.037	.301
Item 6 (SU_6)	**.556**	**.551**	−.045	.191
Partner Uncertainty				
Item 1 (PU_1)	**.721**	.012	**.558**	−.034
Item 2 (PU_2)	**.723**	.024	**.604**	−.039
Item 3 (PU_3)	**.733**	−.048	**.297**	.033
Item 4 (PU_4)	**.789**	−.077	**.349**	−.040
Item 5 (PU_5)	**.745**	−.133	**.101**	.065
Item 6 (PU_6)	**.796**	−.070	**.200**	−.042
Relationship Uncertainty				
Item 1 (RU_1)	**.840**	.076	.026	**−.046**
Item 2 (RU_2)	**.750**	.174	.020	**−.186**
Item 3 (RU_3)	**.685**	.148	−.062	**.143**
Item 4 (RU_4)	**.632**	.097	−.103	**.173**
Item 5 (RU_5)	**.766**	−.195	.218	**−.026**
Item 6 (RU_6)	**.652**	.028	−.083	**.135**

Note: All factor loadings are standardized. Items in bold reflect general factor loadings and target residualized factor loadings. GF-Relational = General factor of Relational Uncertainty.
Self = Residualized factor of Self Uncertainty. Partner = Residualized factor of Partner Uncertainty. Relationship = Residualized factor of Relationship Uncertainty.

the 3 factor ESEM (Y-B χ^2 (102) = 490.798, $p < .001$; CFI = .949; SRMR = .025; RMSEA = .069 [.063, .075]; BIC = 42856.095), and the bifactor CFA (Y-B χ^2 (117) = 680.111, $p < .001$; CFI = .926; SRMR = .051; RMSEA = .077 [.072, .083]; BIC = 43029.075). Along with strong factor loadings (see Table 2), bifactor indices (ω_H = .871, H = .948, FD = .963, ECV = .743) indicated that relational uncertainty should be modeled as an essentially unidimensional general factor controlling for its three residualized factors of self, partner, and relationship uncertainty. To integrate the remaining latent variables alongside the bifactor representation of relational uncertainty as an endogenous variable, we conducted ESEM-within-CFA. Using robust maximum likelihood estimation, the full bifactor measurement model fit the data relatively well: Y-B χ^2 (1102) = 2907.287, $p < .001$; SRMR = .051; CFI = .926; RMSEA = .045 [.043, .047]; BIC = 115226.559.

Structural regression models

Next, we examined a structural regression model by adding paths between the latent variables in line with predictions from RTT. Relational uncertainty was modeled to predict biased cognitive appraisals (threat of relationship talk), and partner facilitation and partner interference were modeled to predict negative emotions. Biased cognitive appraisals and negative emotions were modeled to influence enacted relationship talk, directness of communication about irritations, and relational turbulence. Enacted relationship talk and directness of communication about irritations were also modeled to influence relational turbulence. Results indicated that model fit could be improved: Y-B χ^2 (1114) = 3292.579, $p < .001$; SRMR = .115; CFI = .911; RMSEA = .049 [.047, .051]; BIC = 115595.733.

Subsequently, we examined a modified version of RTT with fewer constrained parameters. Inspection of the modification indices and residuals indicated that model fit could be improved with added paths between relational uncertainty and negative affect, and interference/facilitation and threat of relationship talk. Consistent with these empirical respecifications, recent studies support conclusions with similar "departures from RTT" (Solomon & Brisini, 2019, p. 2430). In defense of a modified RTT model, Solomon and Brisini (2019) found warrant for paths between uncertainty and both emotional jealousy and negative affect. Moreover, their results suggested the tenability of

associations between interference and facilitation and biased cognitive appraisals. Thus, it may be appropriate to model RTT without constraining the relationships between relational uncertainty and negative affect, and interference/facilitation and biased cognitive appraisals, to zero (i.e., omitting the paths). In fact, the work of early RTM scholars supports the presence of these relationships (e.g., Knobloch et al., 2007; Solomon & Knobloch, 2004). Consequently, we tested a model with relational uncertainty and partner interference/facilitation predicting both biased cognitive appraisals and negative affect. Results from our structural regression analysis indicated the modified RTT model fit the data relatively well: Y-B χ^2 (1111) = 3047.638, $p < .001$; SRMR = .067; CFI = .921; RMSEA = .046 [.045, .048]; BIC = 115335.436, and was a better fit than the previous iteration (χ_D^2 = 244.941, df = 3, $p < .01$; see Figure 2).

Results from this model provide support for our hypotheses and for propositions 1–5 of RTT. Specifically, we found support for proposition 1 which posits a positive relationship between relational uncertainty and biased cognitive appraisals (H1). Proposition 2 purports that interference and facilitation, but particularly interference, should cause individuals to experience heightened emotional arousal (H2). Our results generally provide support for this proposition as well: interference (but not facilitation) was positively associated with subjects' reports of negative affect. Propositions 3 and 4 state that biased cognitive appraisals and heightened emotional arousal should cause people to respond with communication that is either more or less engaged. In this study we predicted that the perceived threat of relationship talk would predict less communication with regard to conversations about the relationship and experienced irritations (H3). On the other hand, we predicted that negative affect would predict more communication engagement in these realms (H4). These predictions were supported with the exception of a nonsignificant path from negative affect to enacted relationship talk (though the relationship was in the correct direction). Finally, proposition 5 predicts that biased cognitive appraisals, emotions, and communication about the relationship will ultimately influence people's experience of relational turbulence (H5). Results from our model support this conclusion. Perceived threat due to relationship talk, negative affect, and directness of communication about

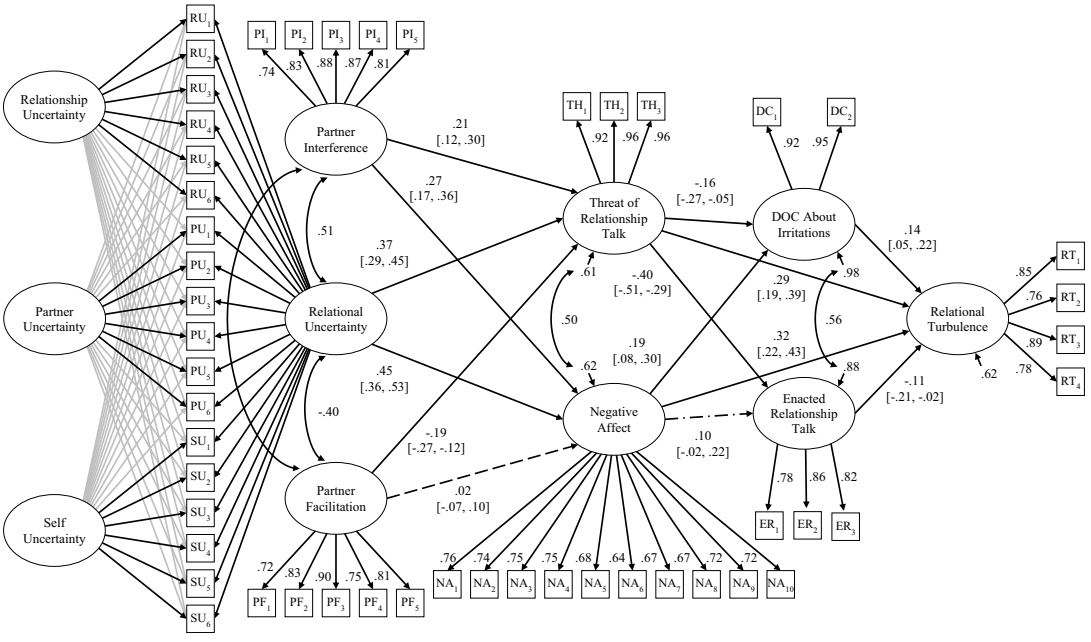

Figure 2. Relational turbulence theory with added cross specifications. Note. Coefficients are standardized. The dashed line indicates a nonsignificant path ($p > .05$). Correlation between Interference and Facilitation = −.52. DOC = Directness of Communication.

irritations were each positively and significantly linked to turbulence. Enacted relationship talk was negatively and significantly associated with this outcome.

Discussion

This project tested propositions from RTT in a more comprehensive latent variable model examining global evaluations from college students in romantic relationships. Generally, our results support the tenets of RTT when its propositions were tested simultaneously and operationalized via measures pertaining to general perceptions of relational parameters, relational experiences, and relational turbulence. At this level of measurement, our results provide evidence for potential modifications that allow relational uncertainty to impact negative affect, and partner interference and facilitation to impact biased cognitive appraisals, which are not specified explicitly in RTT (Solomon et al., 2016).

Propositions 1 and 2 of RTT purport that relational uncertainty and partner interference/facilitation have unique effects on biased cognitive appraisals and heightened emotional arousal. In this way, RTT scholars argue that relationship parameters distinctively impact experiences of specific episodes within relational interactions (Solomon et al., 2016). However, results from our data point to the tenability of including paths from partner interference and facilitation to biased appraisals. In particular, we found that partner interference enhanced appraisals of relationship threat whereas facilitation decreased these. Our results are in line with recent work where the inclusion of paths from interference and facilitation to general experiences of biased cognitive appraisals, in the form of cognitive jealousy, provided a better model correspondence of RTT to the data (Solomon & Brisini, 2019). Likewise, relational uncertainty had a positive association with negative emotions. Results similar to these have been reported previously (e.g., Solomon & Brisini, 2019), and point to the conclusion that uncertainty in romantic relationships may lead to general experiences of intensified negative affect. This association is supported by research on uncertainty where, with typical exceptions, scholars generally view the experience as aversive (e.g., Anderson et al., 2019), and where scholars have linked uncertainty to negative affect measured as a global experience (Knobloch et al., 2007; Knobloch & Theiss, 2010).

Considering the above, our results point to the conclusion that strict adherence to RTT processes may not be necessary – at least when studied via general evaluations of experiences within a relationship. That is, we found evidence for potentially relaxing the specification that relational uncertainty and interference/facilitation impact downstream variables through "distinctive" relational processes (Solomon et al., 2016, p. 508). Stated differently, findings from our project support the use of models that are consistent with RTT stipulations but that allow for crossing paths that predict biased appraisals and negative affect from relationship parameters. In fact, Solomon and Brisini (2019) argued for the same respecification when they found that cognitive jealousy was impacted by interdependence variables while emotional jealousy was linked to relationship uncertainty. Other researchers support this position as well. For instance, RTM scholarship promotes the presence of these relationships (e.g., Knobloch et al., 2007; Solomon & Knobloch, 2004). And, in particular, Worley and Shelton (2020) acknowledged that relational uncertainty and interdependence may arouse polarized cognitions and emotions together as a more general process, rather than the "sharply bifurcated processes originally proposed by RTT" (p. 265). Thus, considering the totality of evidence accumulating toward this supposition, our study may help scholars have more confidence in the conclusion that relational uncertainty and interdependence might impact biased cognitive appraisals and heightened affect simultaneously as opposed to separately and distinctively. Of course, a single study such as ours does not confirm a theoretical model, and future studies should replicate these findings and test models with these paths omitted versus freely estimated.

Other findings from this study are worth mentioning as well. As predicted, enacted relationship talk had a negative association with relational turbulence. This finding indicates the more that people spoke with their relational partners about the nature of the relationship, the less turbulence they experienced. This prediction was based on the work of Knobloch and Theiss (2011) who argued that

relationship talk is essential to partnerships because it helps people orient appropriately to the status of the relationship. As they argued, relationship talk is a key process in developing personal wellbeing and relational satisfaction within partnerships. At least when the result of the conversation is reassuring, it makes sense that people who talk to their partners about their relationship feel more secure after confirming its standing. This result points to the notion that, in addition to behaviors that might promote turbulence, scholars may find warrant in studying behaviors that temper against this outcome. In addition to relationship talk, for example, scholars have found that facilitation can diminish experiences of relational turbulence (Goodboy et al., 2020). As such, researchers who use RTT to study relationships would be wise to consider the push and pull of behaviors that offset one another as people interact and form their perceptions of stability.

An unexpected finding from this study includes the nonsignificant path between facilitation and negative affect. That said, our model may be limited because we did not study RTT in relation to specific episodes as articulated in its propositions. Despite this, our data are supportive of proposition 2 which concludes that interference from a partner should have a larger impact on negative emotions compared with facilitation. Partner interference may be especially likely to impact emotional reactivity (Solomon et al., 2016), and this might be particularly true when operationalizing emotions from the standpoint of general negative affect rather than affect stemming from specific relational episodes. However, it might also be the case that facilitation may be more likely to associate with positive emotions compared with those that are negative (Quaack et al., 2022; Solomon et al., 2019).

Finally, there are practical implications from our findings that coincide with RTT's predictions. To minimize relational turbulence, partners might consider ways in which they reduce uncertainty about the future of the relationship and help (but not hinder) each other's accomplishments of daily routines, as each are linked to downstream cognitive appraisals, negative affect, and communicative engagement that culminate in relational turbulence. RTT provides the mechanisms responsible for relational turbulence, so partners might consider ways to influence these processes in their dating relationships.

Limitations and future directions

One limitation of this project includes the sample we used. Most of the individuals who responded to our survey were relatively young. Thus, results from this investigation should be corroborated in samples of older adults before generalizations are made beyond the current data. Relatedly, we did not measure relationship status in this study. Considering differences in casually dating versus seriously committed relationships may lead to different outcomes, results from this study should be validated with samples linked to specific relational categories. In addition, the majority of individuals in our sample reported being in heterosexual relationships. As such, our findings are not generalizable to all populations.

The nature of our data suggests other limitations as well. Because we gathered data from a cross section in time, it is impossible to demonstrate causality. Future studies of relational turbulence may consider testing the full model of RTT predictions, including predictions arising from propositions 6 and 7 (i.e., the effect of relational turbulence on relational and social outcomes due to relational construals and dyadic synchrony), using longitudinal analyses. Another limitation of this study includes our failure to measure a complete collection of variables stemming from propositions 1–5 including facilitation, positive emotions, and communication valence. As such, more comprehensive tests of RTT can be made.

Additionally, this study could be improved if we added more complex specifications to our data analyses. We examined simple paths between antecedent and outcome variables without examining moderators that might change the nature of these relationships. Moving forward, researchers may find it fruitful to examine boundary conditions that explicate the conditions under which the relationships postulated in RTT hold. Additionally, dyadic data collection is needed to model both partners' perceptions of the causes and consequences of relational turbulence. Finally, more longitudinal studies that demonstrate dynamic processes of RTT are needed. Intensive longitudinal analyses using daily

repeated measurements of RTT constructs might be especially illuminating for testing RTT in daily life.

Conclusion

In summary, we tested a latent variable model of RTT and found overall support for its propositions with minor modifications. Ultimately, results from this study support RTT while highlighting the potential for modeling paths between relational uncertainty and heightened emotional arousal, and partner interdependence and biased cognitive appraisals. We are encouraged by the valid psychometrics and measurement of RTT's core variables as these are elevated to a latent, rather than observed, level of analysis. As RTT continues to be advanced by interpersonal communication scholars, it appears to be set on a solid theoretical foundation.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

Anderson, E. C., Carleton, R. N., Diefenbach, M., & Han, P. K. J. (2019). The relationship between uncertainty and affect. *Frontiers in Psychology*, *10*, 2504. https://doi.org/10.3389/fpsyg.2019.02504

Baxter, L. A., & Wilmot, W. W. (1985). Taboo topics in close relationships. *Journal of Social and Personal Relationships*, *2* (3), 253–269. https://doi.org/10.1177/0265407585023002

Berger, C. R., & Bradac, J. J. (1982). *Language and social knowledge: Uncertainty in interpersonal relationships*. Edward Arnold.

Goodboy, A. K., Bolkan, S., Brisini, K., & Solomon, D. H. (2021). Relational uncertainty within relational turbulence theory: The bifactor exploratory structural equation model. *Journal of Communication*, *71*(3), 403–430. https://doi.org/10.1093/joc/jqab009

Goodboy, A. K., Bolkan, S., Sharabi, L. L., Myers, S. A., & Baker, J. P. (2020). The relational turbulence model: A meta-analytic review. *Human Communication Research*, *46*(2–3), 222–249. https://doi.org/10.1093/hcr/hqaa002

Goodboy, A. K., & Martin, M. M. (2020). Omega over alpha for reliability estimation of unidimensional communication measures. *Annals of the International Communication Association*, *44*(4), 422–439. https://doi.org/10.1080/23808985.2020.1846135

Knobloch, L. K., & Carpenter-Theune, K. E. (2004). Topic avoidance in developing romantic relationships: Associations with intimacy and relational uncertainty. *Communication Research*, *31*(2), 173–205. https://doi.org/10.1177/0093650203261516

Knobloch, L. K., Miller, L. E., & Carpenter, K. E. (2007). Using the relational turbulence model to understand negative emotion within courtship. *Personal Relationships*, *14*(1), 91–112. https://doi.org/10.1111/j.1475-6811.2006.00143.x

Knobloch, L. K., & Solomon, D. H. (1999). Measuring the sources and content of relational uncertainty. *Communication Studies*, *50*(4), 261–278. https://doi.org/10.1080/10510979909388499

Knobloch, L. K., & Solomon, D. H. (2002). Information seeking beyond initial interaction: Negotiating relational uncertainty within close relationships. *Human Communication Research*, *28*(2), 243–257. https://doi.org/10.1111/j.1468-2958.2002.tb00806.x

Knobloch, L. K., & Solomon, D. H. (2004). Interference and facilitation from partners in the development of interdependence within romantic relationships. *Personal Relationships*, *11*(1), 115–130. https://doi.org/10.1111/j.1475-6811.2004.00074.x

Knobloch, L. K., & Solomon, D. H. (2005). Relational uncertainty and relational information processing: Questions without answers? *Communication Research*, *32*(3), 349–388. https://doi.org/10.1177/0093650205275384

Knobloch, L. K., & Theiss, J. A. (2010). An actor-partner interdependence model of relational turbulence: Cognitions and emotions. *Journal of Social and Personal Relationships*, *27*(5), 595–619. https://doi.org/10.1177/0265407510368967

Knobloch, L. K., & Theiss, J. A. (2011). Relational uncertainty and relationship talk within courtship: A longitudinal actor-partner Independence model. *Communication Monographs*, *78*(1), 3–26. https://doi.org/10.1080/03637751.2010.542471

McLaren, R. M., Solomon, D. H., & Priem, J. S. (2011). Explaining variation in contemporaneous responses to hurt in premarital romantic relationships: A relational turbulence model perspective. *Communication Research*, *38*(4), 543–564. https://doi.org/10.1177/0093650210377896

McLaren, R. M., Solomon, D. H., & Priem, J. S. (2012). The effect of relationship characteristics and relational communication on experiences of hurt from romantic partners. *Journal of Communication*, *62*(6), 950–971. https://doi.org/10.1111/j.1460-2466.2012.01678.x

Quaack, K. R., Bolkan, S., & Goodboy, A. K. (2022). Interdependence and affective processes in relational turbulence theory. *Communication Reports 35*(3), 160–172. https://doi.org/10.1080/08934215.2022.2080843

Solomon, D. H., & Brisini, K. S. C. (2017). Operationalizing relational turbulence theory: Measurement and construct validation. *Personal Relationships*, *24*(4), 768–789. https://doi.org/10.1111/pere.12212

Solomon, D. H., & Brisini, K. S. C. (2019). Relational uncertainty and interdependence processes in marriage: A test of relational turbulence theory. *Journal of Social and Personal Relationships*, *36*(8), 2416–2436. https://doi.org/10.1177/0265407518788700

Solomon, D. H., & Knobloch, L. K. (2001). Relationship uncertainty, partner interference, and intimacy within dating relationships. *Journal of Social and Personal Relationships*, *18*(6), 804–820. https://doi.org/10.1177/0265407501186004

Solomon, D. H., & Knobloch, L. K. (2004). A model of relational turbulence: The role of intimacy, relational uncertainty, and interference from partners in appraisals of irritations. *Journal of Social and Personal Relationships*, *21*(6), 795–816. https://doi.org/10.1177/0265407504047838

Solomon, D. H., Knobloch, L. K., Theiss, J. A., & McLaren, R. M. (2016). Relational turbulence theory: Explaining variation in subjective experienced and communication within romantic relationships. *Human Communication Research*, *42*(4), 507–532. https://doi.org/10.1111/hcre.12091

Solomon, D. H., & Theiss, J. A. (2008). A longitudinal test of the relational turbulence model of romantic relationship development. *Personal Relationships*, *15*(3), 339–357. https://doi.org/10.1111/j.1475-6811.2008.00202.x

Solomon, D. H., Theiss, J. A., Knobloch, L. K., & McLaren, R. M. (2019). Reflections on the development of relational turbulence theory. In S. R. Wilson & S. W. Smith (Eds.), *Reflections on interpersonal communication research* (pp. 315–335). Cognella.

Theiss, J. A., Knobloch, L. K., Checton, M. G., & Magsamen-Conrad, K. (2009). Relationship characteristics associated with the experience of hurt in romantic relationships: A test of the relational turbulence model. *Human Communication Research*, *35*(4), 588–615. https://doi.org/10.1111/j.1468-2958.2009.01364.x

Theiss, J. A., & Nagy, M. E. (2013). A relational turbulence model of partner responsiveness and relationship talk across cultures. *Western Journal of Communication*, *77*(2), 186–209. https://doi.org/10.1080/10570314.2012.720746

Theiss, J. A., & Solomon, D. H. (2006). A relational turbulence model of communication about irritations in romantic relationships. *Communication Research*, *33*(5), 391–418. https://doi.org/10.1177/0093650206291482

Vangelisti, A. L. (2011). Interpersonal processes in romantic relationships. In M. L. Knapp & J. A. Daly (Eds.), *The SAGE handbook of interpersonal communication* (pp. 597–632). Sage.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. https://doi.org/10.1037/0022–3514.54.6.1063

Worley, T. R., & Shelton, M. R. (2020). Work-family conflict, relational turbulence mechanisms, conflict tactics and marital satisfaction. *Journal of Applied Communication Research*, *48*(2), 248–269. https://doi.org/10.1080/00909882.2020.1735647