

A cross-cultural test of the relational turbulence model: Relationship characteristics that predict turmoil and topic avoidance for Koreans and Americans

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Abstract

This study models associations among intimacy, relational uncertainty, partner interference, relational turmoil, and topic avoidance in Korean and American romantic relationships. We surveyed 294 individuals from the United States ($N = 156$) and South Korea ($N = 138$). The American model indicated that intimacy was negatively associated with relational uncertainty and curvilinearly associated with partner interference, relational uncertainty was positively associated with topic avoidance, and partner interference was positively associated with perceived turmoil. The South Korean model revealed that intimacy was negatively associated with relational uncertainty, while both relational uncertainty and partner interference were positively associated with perceived turmoil, which was positively associated with topic avoidance. Although the American and Korean models were statistically invariant, some notable cultural differences are discussed.

Keywords

Cross-cultural, dating relationships, partner interference, relational uncertainty, topic avoidance

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The relational turbulence model (Solomon & Knobloch, 2004; Solomon & Theiss, 2008) was developed to identify the mechanisms responsible for an array of negative interpersonal experiences at moderate levels of intimacy (Solomon & Knobloch, 2004). Research suggests that moderately intimate relationships are marked by intensified emotions (Aune, Aune, & Buller, 1994), increased jealousy (Knobloch, Solomon, & Cruz, 2001), and heightened conflict (Christopher & Cate, 1985; Theiss & Solomon, 2006b). Accordingly, the model defines *relational turbulence* as intensified emotional, cognitive, and behavioral reactivity to interpersonal events. The model argues that this reactivity can be explained by increases in relational uncertainty and interference from partners during the transition from casual dating to more serious involvement. Numerous studies have tested the model's logic in dating relationships (e.g., Knobloch & Theiss, 2010, 2011b; Solomon & Theiss, 2008; Theiss & Knobloch, 2009; Theiss & Solomon, 2006a, 2006b) and during transitions in more established relationships (e.g., Knobloch & Theiss, 2011a; Steuber & Solomon, 2008; Theiss, 2011; Theiss & Nagy, 2010; Weber & Solomon, 2008). One issue that remains unresolved is whether the tenets of the model are applicable to relationships in other cultures. Thus, the goal of this study is to test the tenets of the model across cultures.

We focus this investigation on romantic relationships in the United States and South Korea, because the constructs that are most prominent in the relational turbulence model have been found to vary in Asian cultures. Prior research has pointed to cultural differences in the experience of uncertainty in American and Asian cultures (e.g., Gudykunst, Ting-Toomey, & Nishida, 1996). Studies have shown that people in collectivist cultures possess a high degree of uncertainty avoidance, which is associated with less self-monitoring (Gudykunst, Yang, & Nishida, 1985) and more hostility (Merkin, 2006) in their communication strategies. In addition, the individualist versus collectivist nature of these societies may have implications for the way individuals perceive partner interference. For example, because people from individualist cultures privilege individual gains over group accomplishments, they might be particularly bothered by a partner's interference in their personal goals and routines. Conversely, since collectivist cultures privilege the well-being of the group over that of the individual, they may see partner interference as a necessary byproduct of group membership. For these reasons, we focus our investigation on romantic relationships in American and Korean samples.

Two variables are particularly germane for examining the manifestations of relational turbulence in dating relationships: perceptions of turmoil and topic avoidance. Several studies have documented the associations that relational uncertainty and interference from partners share with perceived turmoil (e.g., Knobloch, 2007; Knobloch & Theiss, 2010; Theiss & Knobloch, in press) and topic avoidance (e.g., Knobloch & Carpenter-Theune, 2004; Knobloch & Theiss, 2011b). We focus our investigation on these two variables, because understanding the cognitive and communicative symptoms of turmoil can help partners recognize when a relationship is troubled. Figure 1 models the predicted associations in the relational turbulence model. In the following sections, we outline the assumptions of the relational turbulence model that contribute to the predictions in the model, and we describe a study that compares the relationship experiences of dating partners in the United States and South Korea.

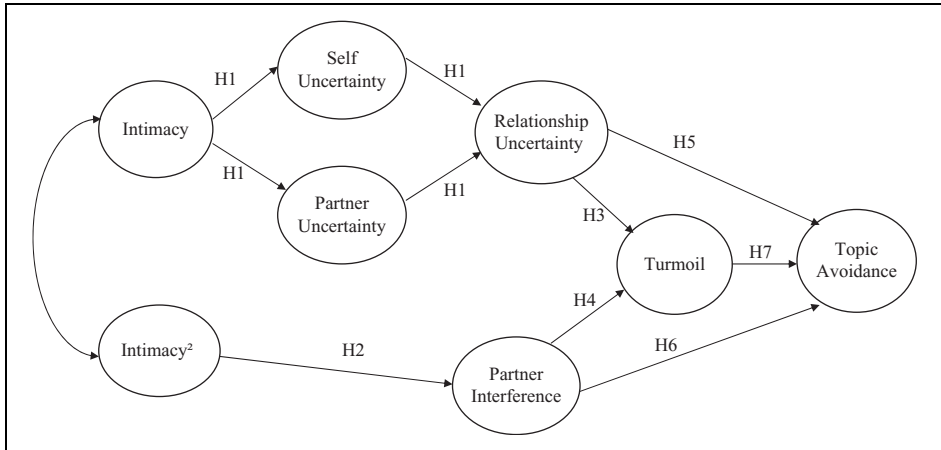


Figure 1. Predicted model.

Intimacy and the mechanisms of relational turbulence

The first goal of the relational turbulence model is to explain why people experience upheaval during the transition from casual involvement to more serious commitment in dating relationships (Solomon & Knobloch, 2004). The model suggests that certain relationship characteristics co-vary with the trajectory of intimacy and become more salient during this particular transition in dating relationships. Specifically, the model focuses on patterns of relational uncertainty and interference from partners at varying levels of intimacy.

Predicting relational uncertainty

Relational uncertainty refers to the degree of confidence people have in their perceptions of interpersonal involvement in their relationship and it stems from three interrelated sources of ambiguity (Knobloch & Solomon, 1999). *Self uncertainty* refers to the doubts individuals have about their own involvement in the relationship, *partner uncertainty* refers to the doubts people experience about a partner's involvement in the relationship, and *relationship uncertainty* is the ambiguity an individual experiences as he or she evaluates the status of the relationship more generally. Relationship uncertainty exists at a broader level of abstraction and encompasses elements of both self and partner uncertainty (Knobloch & Solomon, 1999).

The relational turbulence model argues that relational uncertainty is heightened during the early stages of dating relationships and declines as romantic partners establish intimacy and increased commitment to their relationship (Solomon & Knobloch, 2004). Relational uncertainty is heightened in relatively non-intimate relationships, because this period of relationship development generates the most questions about what people want out of the relationship, how a romantic partner might be feeling, and whether or not the relationship has a future (Knobloch & Solomon, 2002; Solomon & Knobloch, 2004). As

partners transition from a casual relationship to one that is more committed and intimate, their questions about the nature of their relationship subside (Solomon & Knobloch, 2004; Solomon & Theiss, 2008). Cross-sectional and longitudinal tests of the relational turbulence model have revealed that relational uncertainty decreases in highly intimate relationships (Solomon & Knobloch, 2004; Solomon & Theiss, 2008; Theiss & Solomon, 2006b). Thus, we predict that relational uncertainty shares a negative association with intimacy. Formally stated:

H1: Intimacy is negatively associated with relational uncertainty.

Predicting interference from partners

The relational turbulence model nominates interference from partners as a variable that peaks at moderate levels of intimacy and contributes to emotional, cognitive, and behavioral reactions to interpersonal events (Solomon & Knobloch, 2004; Solomon & Theiss, 2008). *Interference from partners* refers to the degree to which an individual perceives a partner as undermining personal actions. Partner interference emerges during the process of establishing interdependence in a romantic relationship and becomes manifest in situations where one person's routine is interrupted by efforts to coordinate actions with a relational partner (Berscheid, 1983). As partners strive to establish interdependence, they allow one another to have more influence in their daily activities, which can have both positive and negative implications. Positive influence occurs when a partner's influence facilitates personal goals (e.g., "Thank you for bringing home take-out for dinner, now I don't have to cook tonight."). Negative influence occurs when a partner's influence interferes with personal goals (e.g., "Why did you have to bring home Chinese food for dinner? You know I'm on a diet!").

The relational turbulence model argues that interference from partners peaks at moderate levels of intimacy and empirical tests of the model support this claim (Solomon & Knobloch, 2004; Solomon & Theiss, 2008). During the early stages of relationship development, opportunities for partner interference are rare because partners do not have much influence in one another's life. The transition from casual to serious involvement, however, is ripe for partner interference as partners attempt to establish interdependence, but lack the experience and practice necessary to coordinate their actions. At high levels of intimacy, partners learn how to enact coordinated patterns of behavior through experience and practice, so interference is supplanted by facilitation in more established relationships. Consistent with the model's logic, we predict a curvilinear association between intimacy and partner interference.

H2: Intimacy is curvilinearly associated with interference from partners, such that it peaks at moderate levels of intimacy.

Cultural differences in the relational turbulence model

The relational turbulence model has only been tested in American samples; thus, we wanted to investigate whether or not the core tenets of the model would be consistent in another culture. There are a number of reasons to believe that differences may exist

between Americans and South Koreans in terms of the mechanisms in the relational turbulence model. As a starting point, some research suggests that East Asians and Westerners tend to have different conceptualizations and expressions of intimacy (Marshall, 2008; Seki, Matsumoto, & Imahori, 2002). Similarly, compared to Chinese college students, American college students have more liberal attitudes about dating (Tang & Zuo, 2000) and may be less committed to relationship partners (Lin & Rusbult, 1995). Studies also show that people experience and deal with uncertainty differently across cultures (Cragan & Shields, 1999). For instance, Japanese students tend to report less uncertainty toward classmates than American students (Gudykunst & Nishida, 1986). Conceptualizations of face also tend to differ across cultures. For example, Holtgraves and Yang (1992) found that Koreans are more likely than Americans to view power and relational distance as influential in relationships, which may have implications for the ways people perceive partner interference. Thus, we pose the following research question:

RQ1: Do the associations between intimacy and the mechanisms of the relational turbulence model differ for Americans and South Koreans?

Manifestations of relational turbulence

Recall that the relational turbulence model argues relational uncertainty and interference from partners correspond with intensified emotional, cognitive, and communicative reactivity to interpersonal events. In this study, we identify perceptions of turmoil as a cognitive marker of turbulence and topic avoidance as a communicative marker of turbulence. *Perceptions of turmoil* refers to people's appraisals of the degree to which their relationship is tumultuous and stressful (Knobloch, 2007). *Topic avoidance* is purposely evading communication about an issue (Afifi & Burgoon, 1998; Afifi & Guerrero, 2000) to avoid conflict (Roloff & Ifert, 2000), manage boundaries (e.g., Vangelisti, Caughlin, & Timmerman, 2001), and promote or impede relationship progression (Afifi & Guerrero, 2000; Caughlin & Golish, 2002). Consistent with the relational turbulence model, we expect that relational uncertainty and interference from partners predict these cognitive and communicative markers of turbulence.

Predicting perceptions of turmoil

Relational uncertainty is associated with an array of cognitive outcomes in relationships. Prior studies have linked heightened relational uncertainty to perceptions of irritations as more severe and relationally threatening (Solomon & Knobloch, 2004; Theiss & Knobloch, 2009; Theiss & Solomon, 2006b). In addition, people with increased relational uncertainty report greater suspicion of third party rivals (Theiss & Solomon, 2006a) and they perceive hurtful messages as more severe, intentional, and relationally threatening (Theiss, Knobloch, Checton, & Magsaman-Conrad, 2009). Moreover, relational uncertainty is positively associated with perceptions of turmoil (e.g., Knobloch, 2007; Knobloch & Theiss, 2010). Thus, consistent with previous research, we advance the following hypothesis:

H3: Relational uncertainty is positively associated with perceptions of turmoil.

Previous tests of the relational turbulence model have shown that interference from partners also predicts heightened cognitive reactivity to relationship circumstances. Partner interference corresponds with appraisals of irritations as more severe and relationally threatening (Theiss & Solomon, 2006b). In addition, partner interference is associated with increased suspicion and jealousy over third party rivals (Theiss & Solomon, 2006a), and perceptions that social networks are unsupportive of the relationship (Knobloch & Donovan-Kicken, 2006). Previous research has also documented positive associations between interference from partners and appraisals of turmoil in the relationship (Knobloch, 2007; Knobloch & Theiss, 2010). Thus, we predict a positive association between partner interference and perceptions of turmoil.

H4: Interference from partners is positively associated with perceptions of turmoil.

Predicting topic avoidance

Research indicates that relational uncertainty is associated with polarized communication behaviors. For example, studies show that people who are relationally uncertain tend to engage in more indirect communication about a variety of relationship events (Theiss & Knobloch, 2009; Theiss & Solomon, 2006a, 2006b). In addition, research suggests that date requests (Knobloch, 2006) and relationship talk (Knobloch & Theiss, 2011b) are both less explicit under conditions of relational uncertainty. Relational uncertainty has also been linked with increased topic avoidance in romantic relationships (e.g., Knobloch & Carpenter-Theune, 2004). People who are experiencing relational uncertainty are likely to avoid certain topics because they cannot accurately predict how their partner might respond and, therefore, cannot create an adequate plan for the interaction (e.g., Berger, 1997). Consistent with this reasoning, we anticipate that relational uncertainty is positively associated with topic avoidance. Formally stated:

H5: Relational uncertainty is positively associated with topic avoidance.

Prior research also points to more polarized communication behaviors under conditions of partner interference. For example, interference from partners is associated with more direct confrontations about irritating circumstances (Theiss & Solomon, 2006b). Partner interference is also associated with uncoordinated conversations and disaffiliative messages (Knobloch, 2006). In addition, interference from partners is negatively associated with the fluency of date request messages (Knobloch & Schmelzer, 2008). This evidence suggests that people struggle to communicate effectively when partner interference is high. Given the difficulty associated with communication under these circumstances, we suspect that people may engage in topic avoidance when they are experiencing interference from a partner. Formally stated:

H6: Partner interference is positively associated with topic avoidance.

Most of the existing research on topic avoidance has privileged relational uncertainty as the primary predictor of avoidance (e.g., Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune, 2004). We have highlighted a direct association between relational uncertainty and topic avoidance in this paper as well, but we also suspect that relational uncertainty may have an indirect effect on topic avoidance resulting from the underlying turmoil it creates in relationships. Other studies have highlighted self-protection, relationship protection, and conflict avoidance as reasons to avoid certain topics in a relationship (e.g., Golish & Caughlin, 2002). We believe that these concerns reflect an underlying feeling that the relationship is in a state of ongoing turmoil and disarray. Thus, we predict that the perception of turmoil is another predictor of topic avoidance in romantic relationships. Formally stated:

H7: Perceptions of turmoil are positively associated with topic avoidance.

Cultural differences in turmoil and topic avoidance

Earlier in this paper, we queried whether the core assumptions of the relational turbulence model differed across cultures. We also wonder if there are cultural differences in the ways relational uncertainty and partner interference predict cognitive and communicative reactivity. Several studies point to cultural differences in interpersonal communication. For example, studies show that Chinese individuals report less self-disclosure in close relationships than their western counterparts (Chen, 1995; Goodwin & Lee, 1994). Similarly, gender-role traditionalism, a trait generally favored in East-Asian cultures more than western cultures (e.g., Loscocco & Bose, 1998), is associated with inhibited self-disclosure in relationships (Neff & Suizzo, 2006). Research also suggests that individualist cultures place more emphasis on self-disclosure for enhancing relational intimacy than do collectivist cultures (Adams, Anderson, & Adonu, 2004). Individualist cultures also tend to favor verbal, explicit, and expressive communication styles (Gudykunst & Matsumoto, 1996), whereas collectivist cultures prefer non-verbal, indirect, and less expressive communication strategies (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986). These studies suggest that relational communication may vary culturally, but it is less clear how people's cognitive appraisals of relationships vary. Thus, we pose the research question:

RQ2: Do the associations between the mechanisms of relational turbulence and turmoil and topic avoidance differ for Americans and South Koreans?

The model in Figure 1 summarizes the hypotheses. As a first goal of this study, we explored associations between intimacy and the mechanisms of the relational turbulence model. Given that relationship uncertainty encompasses elements of both self and partner uncertainty, we model negative linear associations between intimacy and these two sources of relational uncertainty, which act as a conduit for the predicted negative association with relationship uncertainty (H1). To test for a curvilinear association between intimacy and interference from partners (H2), a squared intimacy term is included in the model that is correlated with linear intimacy and predicts interference

from partners. The second goal of this study was to investigate associations between the mechanisms in the relational turbulence model and two variables that are prominent manifestations of turbulence. We predicted that relational uncertainty (H3) and interference from partners (H4) were both positively associated with perceptions of turmoil. In addition, we predicted that relational uncertainty (H5) and interference from partners (H6) share positive associations with topic avoidance. Finally, we predicted that perceptions of turmoil in a relationship are positively associated with topic avoidance (H7). We compare the fit of the predicted model for Americans and Koreans using multiple groups analysis.

Method

We evaluated our hypotheses by collecting self-report data from college-aged students in the United States and South Korea. For the United States sample, undergraduate students in communication classes at a large Northeastern university were recruited to participate in the study if they had a romantic interest in another person with whom they had frequent interaction. Students received a small amount of extra course credit for participating in the study. For the South Korean sample, a member of the research team traveled to Seoul, South Korea, and was granted access to a large, private university where data collection was conducted. The questionnaires were translated into Korean and distributed to consenting volunteer participants lounging in the university's student center. Participants in the South Korean sample were compensated with lunch provided by the researcher. The questionnaire assessed demographic characteristics as well as perceptions of their romantic relationship.

Sample

The sample consisted of 156 Americans (52 male, 104 female) and 138 South Koreans (59 male, 78 female, 1 missing). Respondents in the United States sample ranged in age from 18 to 30 years old, with a mean of 20 years, and respondents in the South Korean sample ranged in age from 18 to 29 years old, with a mean of 22 years. The United States sample was predominantly Caucasian (60.9%), the remainder of the sample was 16% Asian, 12.8% African American, 9% Hispanic, and 1.3% reported other. The South Korean sample was predominantly Asian (98.6%; the remaining 1.4% self-reported other). Respondents were also asked about their relationship status. In the United States sample, 4.4% were friends with a romantic interest, 34% were casually dating, 58.3% were seriously dating, and 3.3% were engaged to be married. The South Korean sample reported 31.4% friends with romantic interest, 17.5% casually dating, 50.4% seriously dating, and 0.7% engaged to be married.

Procedures

For the American sample, students who were interested in participating were instructed to come to the Communication Interaction Lab at a designated time to complete the questionnaires. The questionnaire gathered demographic data and data on intimacy,

Table 1. Descriptive statistics for Americans and South Koreans

	Mean US (S.K.)	Std. Dev US (S.K.)	α US (S.K.)
Intimacy (z-scores)	-0.17 (0.16)	0.84 (0.99)	.83 (.86)
Love	6.04 (6.31)	1.48 (1.49)	.85 (.86)
Commitment	4.17 (4.83)	1.03 (1.05)	.90 (.92)
Chance of marriage	48.55 (53.97)	29.86 (30.01)	
Self uncertainty	2.55 (2.19)	0.91 (0.90)	.88 (.86)
Partner uncertainty	2.90 (2.45)	1.31 (1.37)	.94 (.94)
Relationship uncertainty	2.89 (2.31)	1.14 (0.94)	.84 (.75)
Interference from partners	3.19 (2.73)	0.97 (1.10)	.77 (.84)
Perceptions of turmoil	2.82 (3.24)	1.11 (1.41)	.73 (.77)
Topic avoidance	2.94 (2.45)	0.89 (0.99)	.71 (.77)

Note. Values not in parentheses are for Americans, values in parentheses are for South Koreans.

relational uncertainty, partner interference, turmoil, and topic avoidance. For the South Korean sample, undergraduate students were recruited to participate in this study from the student center at a large university in Seoul, South Korea. All study elements, including the consent form and the questionnaire, were translated into Korean by a graduate research assistant of South Korean descent. The Korean versions of the study materials were then translated back into English by a different graduate research assistant of South Korean descent to check for accuracy.

Measures

A variety of closed-ended Likert-type questions were used to operationalize all variables. Confirmatory factor analyses (CFAs) were conducted on all multi-item scales to ensure that they met the criteria of face validity, internal consistency, and parallelism (Hunter & Gerbing, 1982). The criteria for a good fitting model were $\chi^2/df < 3.0$, CFI $> .90$, and RMSEA $< .10$ (Kline, 1998). The CFAs were conducted on the combined sample of Americans and South Koreans so that the resulting variables would have the same factor structure for both groups. After confirming the unidimensionality of the scales, the items were averaged to create composite variables. Table 1 reports the mean, standard deviation, and alpha for each variable for Americans and Koreans.

Intimacy. We operationalized intimacy through a composite measure that incorporated indicators of intimacy associated with developmental patterns (Solomon & Knobloch, 2004). One component of the composite measure was Rubin's (1970) Love Scale, which encompasses feelings of affiliative need, willingness to help, and exclusiveness toward a partner. Respondents used a Likert scale (1 = *not at all true*, 9 = *definitely true*) to indicate their responses to the nine items in the measure. Commitment to continuing the association comprised the second component of the composite intimacy variable. Participants responded on a six-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) to indicate their agreement with six statements (e.g., "I am very committed to maintaining this relationship"). A third aspect of the composite intimacy variable

encompassed the probability that the relationship would continue to progress toward lifelong commitment. Participants indicated their perception of the likelihood of this outcome by circling a response from 0% to 100% on a scale that provided 5% increments.

Bivariate correlations indicated sizable overlap between love and commitment ($r = .72, p < .001$), between love and likelihood of marriage/serious commitment ($r = .60, p < .001$), and between commitment and likelihood of marriage/serious commitment ($r = .63, p < .001$). Thus, the measures of love, commitment, and likelihood of marriage were converted to z-scores, which were averaged to form a composite measure ($range = -2.51$ to $1.57, SD = 0.88$).

Relational uncertainty. We used Knobloch and Solomon's (1999) measure of relational uncertainty to assess the participants' self, partner, and relationship uncertainty. Participants responded to items prefaced with the stem, "How certain are you about . . . ?" on a six-point Likert-type scale (1 = *completely or almost completely uncertain*, 6 = *completely or almost completely certain*). All items were reverse coded so that higher values reflected greater uncertainty. For *self uncertainty*, five items were averaged to form a reliable measure (e.g., "how much you like your partner"). For *partner uncertainty*, we averaged four items (e.g., "how important the relationship is to your partner"). Finally, four items comprised the *relationship uncertainty* measure (e.g., "whether or not the relationship will work out in the long run").

Partner interference. To assess *partner interference*, we used scales employed in previous tests of the relational turbulence model (Knobloch & Solomon, 2004; Solomon & Knobloch, 2001). Respondents reported their level of agreement (1 = *strongly disagree*, 6 = *strongly agree*) with a series of statements regarding their partner's interference in everyday activities. Four items comprised this scale (e.g., "This person interferes with the achievement of everyday goals I set for myself").

Perceptions of turmoil. To measure *perceptions of turmoil*, we used the self-report items developed by Knobloch (2007). Respondents were asked to indicate how much they agreed or disagreed with a series of relationship characteristics prefaced by the stem "At the present time, this relationship is . . ." on a six-point scale (1 = *strongly disagree*, 6 = *strongly agree*). Four items formed a unidimensional measure of *perceptions of turmoil*: (a) chaotic; (b) turbulent; (c) tumultuous; and (d) stressful.

Topic avoidance. To evaluate *topic avoidance* we applied measures developed by Knobloch & Carpenter-Theune (2004) on a seven-point Likert-type scale (1 = *never avoid discussing*, 7 = *always avoid discussing*). Six items were prefaced by the stem, "How often do you avoid discussing . . .": (a) friendships with other people; (b) religious beliefs, values, and convictions; (c) failures (e.g., doing poorly on a test, being fired from a job); (d) norms and expectations for your relationship; (e) everyday activities that go on in your lives; and (f) in-depth discussions about feelings or beliefs.

Table 2. Bivariate correlations and *t*-tests for Americans and South Koreans

	V1	V2	V3	V4	V5	V6	V7	V8	<i>t</i> -test
V1: Self uncertainty		.41**	.59**	.21**	.17*	.32**	-.76**	.04	3.65***
V2: Partner uncertainty	.55**		.72**	.04	.01	.42**	-.57**	.14	2.93**
V3: Relationship uncertainty	.63**	.83**		.14	.18*	.52**	-.68**	.09	4.87***
V4: Interference	-.20*	-.24*	-.20*		.39**	.16	-.05	-.19*	3.80***
V5: Turmoil	.21	.35**	.38**	.25**		.10	-.06	-.14	-2.83***
V6: Topic avoidance	.17	.08	.07	-.03	.25**		-.32**	-.13	4.50***
V7: Intimacy	-.77**	-.60**	-.68**	.24**	-.27**	-.12		-.25**	-3.29***
V8: Intimacy squared ²	.31**	.29**	.31**	-.10	-.12	-.04	.43**		-.38

Note. Correlations above the diagonal are for the American sample and correlations below the diagonal are for the South Korean sample. The final column of the table reports the independent sample *t*-tests for each variable with 295 degrees of freedom. Positive *t*-tests indicate higher mean values for Americans and negative *t*-tests indicate higher mean values for Koreans.

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

Results

Preliminary analyses

As a starting point, we assessed the bivariate correlations among all variables separately for Americans and Koreans (see Table 2). The results of the American bivariate correlations (above the diagonal) showed that the three sources of relational uncertainty were positively interrelated and that self uncertainty was also positively associated with partner interference. self uncertainty, relationship uncertainty, and partner interference were all positively associated with perceptions of turmoil. All sources of relational uncertainty were positively associated with topic avoidance and negatively associated with intimacy. Interference from partners was negatively associated with the squared intimacy term. Finally, topic avoidance was negatively associated with intimacy. The results of the South Korean bivariate correlations (below the diagonal) revealed that the three sources of relational uncertainty were positively correlated and they were all negatively correlated with interference from partners. Perceived turmoil was positively associated with partner uncertainty, relationship uncertainty, interference from partners, and topic avoidance and negatively associated with intimacy. Finally, intimacy and squared intimacy were negatively associated with the three sources of relational uncertainty, and linear intimacy was positively associated with interference from partners.

Next, we conducted independent samples *t*-tests to compare means on the variables for Americans and South Koreans. There were significant differences between Americans and South Koreans on all variables, except squared intimacy. The results of the *t*-tests are reported in Table 2. South Koreans reported higher mean levels of intimacy (Korean $M = 0.16$, American $M = -0.17$) and turmoil (Korean $M = 3.24$, American $M = 2.82$) than Americans. Americans showed higher mean levels of self uncertainty (Korean $M = 2.19$, American $M = 2.58$), partner uncertainty (Korean $M = 2.44$, American $M = 2.90$),

relationship uncertainty (Korean $M = 2.31$, American $M = 2.90$), partner interference (Korean $M = 2.73$, American $M = 3.19$), and topic avoidance (Korean $M = 2.45$, American $M = 2.94$) than South Koreans. Independent samples t -tests for gender revealed no mean differences between males and females on any of the variables.

Substantive analyses

We used multiple group analysis structural equation modeling (SEM) to analyze the effectiveness of our predicted model and to explore the differences and similarities between Americans and South Koreans. Following procedures for a total aggregation model, we used parcels as single-item indicators of the latent variable. Parcels were computed as the average of the individual scale items that formed a unidimensional factor in the CFAs. The error variance of each parcel was set to $(1-\alpha)(\sigma)$ to account for measurement error in our scales (Bollen, 1989). Paths linking the latent variable, observed variable, and error terms within a variable were all set to 1. Given the relatively small sample size in this study, particularly when splitting the sample into cultural groups, a single composite indicator for each latent variable was desirable because it reduced the total number of parameters that needed to be estimated in the model. The multiple groups analysis allowed us to model effects for both Americans and Koreans and to observe where the two cultures produced differing associations. Criteria for a good fitting model were $\chi^2/df < 3.0$, CFI $> .90$, RMSEA $< .10$ (Kline, 1998).

As a starting point, we investigated the impact of relationship status on our variables. We performed a one-way multivariate analysis of variance (MANOVA) in which relationship status was the independent variable and all of the variables in our structural model were dependent variables. Results indicated a significant multivariate effect for relationship status, $F_{(7, 280)} = 95.19, p < .001, \eta^2 = .70$. Univariate tests revealed differences in intimacy ($F_{(6, 286)} = 25.53, p < .001, \eta^2 = .35$), self uncertainty ($F_{(6, 286)} = 7.53, p < .001, \eta^2 = .14$), partner uncertainty ($F_{(6, 286)} = 24.31, p < .001, \eta^2 = .34$), relationship uncertainty ($F_{(6, 286)} = 27.79, p < .001, \eta^2 = .37$), and topic avoidance ($F_{(6, 286)} = 5.11, p < .001, \eta^2 = .10$). Given that relationship status exerted a significant influence on the variables in the model and the different distributions of relationship status across samples, we controlled for the effect of relationship status in our analyses. First, we regressed all of the variables in our predicted model onto relationship status and saved the residuals, which partials out the effect of relationship status on all of the variables. Then, we used the residuals as the indicators in the structural model to control for the effect of relationship status on the model.

We began by running structural equation models separately for the American sample and the Korean sample. Results for the American model showed that the predicted model fit the data ($\chi^2/df = 2.61$, CFI = .93, RMSEA = .10), but that some of the predicted paths were non-significant (see Figure 2). The results for the Americans revealed that intimacy was negatively associated with self uncertainty and partner uncertainty, which were also positively associated with relationship uncertainty, thereby supporting H1. Results also revealed a negative association between the squared intimacy term and partner interference, which denotes a convex curvilinear association between these variables as predicted in H2. We also predicted that relational uncertainty (H3) and interference from

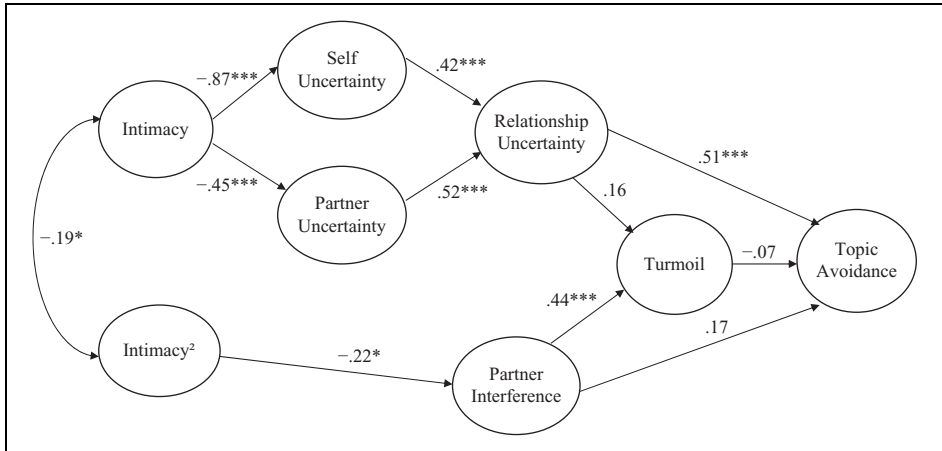


Figure 2 Final model for Americans. Note. * $p < .05$; *** $p < .001$.

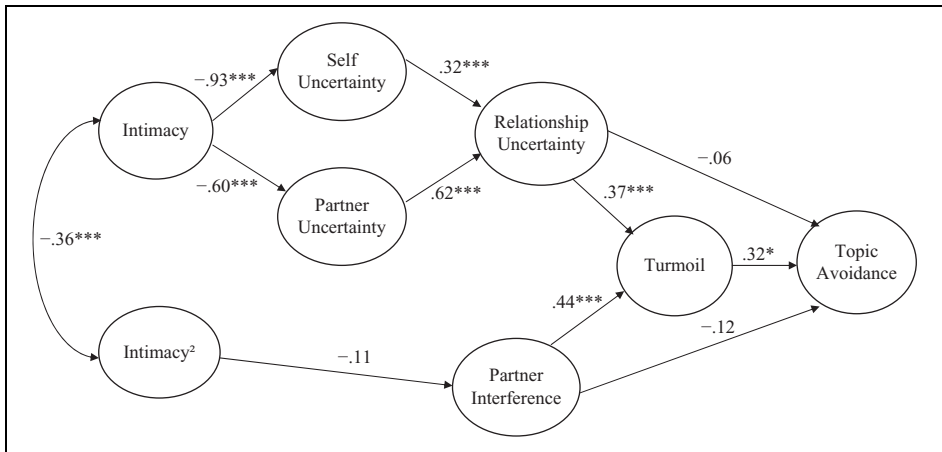


Figure 3. Final model for South Koreans. Note. * $p < .05$; *** $p < .001$.

partners (H4) are positively associated with perceptions of turmoil, but only the association with partner interference was supported. The opposite pattern emerged when predicting topic avoidance, such that relational uncertainty was positively associated with topic avoidance (H5), but the association with partner interference was non-significant (H6). Finally, H7 was not supported because the association between turmoil and topic avoidance was non-significant.

The predicted model also fit the data for Koreans ($\chi^2/df = 2.13$, CFI = .96, RMSEA = .09), but some paths were non-significant (see Figure 3). As predicted, intimacy was negatively associated with relational uncertainty (H1), but the predicted curvilinear association between intimacy and partner interference was non-significant (H2).

Relational uncertainty (H3) and partner interference (H4) were each positively associated with perceptions of turmoil, but their associations with topic avoidance (H5, H6) were non-significant. Finally, turmoil was positively associated with topic avoidance, as predicted (H7).

We proposed two research questions to explore the differences between American and South Korean college-aged students and their perceptions of their romantic relationships. We performed a multiple groups analysis to determine if there were any differences between Americans and Koreans in the model. After obtaining a model that fit for both Americans and South Koreans, we constrained all of the structural paths in the model to be equal for both groups. Results indicated that the constrained model ($\chi^2/df = 2.26$; CFI = .92; RMSEA = .07) fit the data as well as the unconstrained model ($\chi^2/df = 2.15$; CFI = .94; RMSEA = .06), where the paths were allowed to be freely estimated for each group. Thus, the models are considered to be invariant across groups.

Although the models did not reveal statistically significant differences in model fit, there were some differences between the American and Korean models that bear mention. With regard to RQ1, which queried whether the assumptions of the relational turbulence model are similar for Americans and South Koreans, we found that the associations between intimacy and relational uncertainty were consistent across groups, but that the curvilinear association between intimacy and partner interference was not significant for South Koreans. Recall that RQ2 queried whether there were differences in the associations with turmoil and topic avoidance across groups. Results showed that relationship uncertainty predicted turmoil for Koreans, but not for Americans. In addition, relationship uncertainty predicted topic avoidance for Americans, but not for Koreans. Finally, turmoil predicted topic avoidance for Koreans, but not Americans. Although there are no statistical differences between the fit of the constrained and unconstrained models, these results suggest moderate cultural differences in terms of the general assumptions of the relational turbulence model and in terms of predicting turmoil and topic avoidance.

Discussion

In this study, we drew on the relational turbulence model to examine perceived turmoil and topic avoidance in cross-cultural samples of college-aged dating individuals from the United States and South Korea. We used multiple groups SEM to evaluate our predicted model and the model's effectiveness across cultural groups. Results indicated that the models were statistically invariant, yet several paths in the model differed for Americans and South Koreans. In this section, we discuss the implications of our findings for applying the relational turbulence model outside the United States and the factors that shape perceptions of turmoil and topic avoidance in romantic relationships across cultures.

Expanding the reach of the relational turbulence model

The relational turbulence model has historically been tested in populations within the United States. Our study marks the first investigation of the relational turbulence model that spans international boundaries. Thus, our first goal was to explore the main tenets of the model with regard to the predictions that intimacy is negatively

associated with relational uncertainty (H1) and curvilinearly associated with interference from partners (H2).

The results of the multiple groups analysis showed some consistencies and some inconsistencies across cultures. As a starting point, Americans and South Koreans both reported decreased relational uncertainty in more intimate relationships, which suggests that relational uncertainty is a salient issue for people in developing relationships regardless of their cultural background. These findings are significant, not only for the relational turbulence model, but for the large constituency of scholars who are interested in the impact of uncertainty on communication and relationship development. Uncertainty has been a prominent variable in the field of interpersonal communication for decades (e.g., Afifi & Burgoon, 1998; Berger & Bradac, 1982; Berger & Calabrese, 1975; Knobloch & Solomon, 1999; Theiss & Solomon, 2008) and is one of the few interpersonal communication variables to be investigated across cultures (e.g., Gudykunst, Nishida, & Schmidt, 1989; Gudykunst et al., 1985). The results of this study suggest that relational uncertainty is a relevant issue for non-American cultures and, therefore, warrants further investigation across cultural boundaries.

Results for partner interference were not as consistent across groups. Americans showed a convex curvilinear association between intimacy and partner interference, but the association was non-significant for the South Korean model. Why would partner interference be less salient for South Koreans than for Americans? We believe that this difference is largely due to the collectivist ideology in South Korean culture. Americans are driven by individualism, so they privilege their own goals and accomplishments over others (Triandis, 1995). It is not surprising, then, that being in a relationship where one is expected to coordinate actions with a partner and relinquish some power over individual goals gives rise to frustrations. For South Koreans, on the other hand, their cultural ideology is to privilege the good of the group over individual gains (Triandis, 1995); therefore, coordinating interdependence with a relational partner is a normative aspect of a collectivist life. Thus, these cultural differences in partner interference make sense, but they may limit the generalizability of the relational turbulence model outside of individualist cultures. We know of no research to support this conjecture; thus, future studies should investigate differences in partner interference in individualist and collectivist cultures.

In this test of the relational turbulence model, we focused on perceptions of turmoil as a cognitive construct that reflects underlying turbulence in relationships. This decision is a bit of a departure from the first tests of the relational turbulence model that focused on the severity of irritations as the dependent variable in the model (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b). We felt that perceptions of turmoil encompassed a broader array of tumultuous relationship experiences and, therefore, provided a more comprehensive measure of relational turbulence. This strategy yielded some unexpected findings. In previous tests of the relational turbulence model, relational uncertainty has consistently been a more reliable predictor of turbulent relational outcomes than partner interference (e.g., Theiss & Solomon, 2006a; Theiss et al., 2009); however, in this model, for the American sample we found that partner interference predicted perceptions of turmoil, whereas relational uncertainty did not. This finding is a departure from previous studies that have linked relational uncertainty with perceptions of turmoil

(Knobloch, 2007; Knobloch & Theiss, 2010), so we look forward to future research that might clarify the role of turmoil in the relational turbulence model.

We also witnessed differences between Americans and South Koreans in the variables that predicted turmoil. Specifically, the results showed that relationship uncertainty is a more salient predictor of turmoil for Koreans than Americans. Why would South Koreans be more reactive to heightened relationship uncertainty than Americans? One explanation might be related to the fact that they are less likely to perceive partner interference in their relationships. Consequently, perhaps other relationship characteristics, such as intimacy and relational uncertainty, have an exaggerated effect on relational outcomes. This explanation is speculative in the absence of data, but we are hopeful that future research can tease out these cultural differences.

The findings for relational turmoil are important for at least two reasons. First, our results point to perceptions of turmoil as a harbinger of underlying problems in a relationship, which can be beneficial for identifying the symptoms of relational strife and isolating the dyadic characteristics that couples can work on to prevent upheaval in their relationship. Second, our results suggest that the sources of turmoil may vary depending on one's cultural background. Whereas Americans should be on the lookout for interference from partners, Koreans need to guard against relational uncertainty. Understanding the relationship characteristics that lead to upheaval can help relationship partners prepare for hardship and to accept turmoil as a natural consequence of relationship functioning.

Cross-cultural differences in topic avoidance

The results of this study revealed interesting cultural differences in the variables that predict topic avoidance. As a starting point, we take note that interference from partners was not a significant predictor of topic avoidance for Americans or South Koreans. Although relational uncertainty has consistently been linked with communicative outcomes in the relational turbulence model (e.g., Knobloch & Carpenter-Theune, 2004; Theiss & Knobloch, 2009; Theiss & Nagy, 2010; Theiss & Solomon, 2006b), understanding the impact of partner interference on communication behavior has proven to be far more elusive (but see Knobloch, 2008; Knobloch & Schmelzer, 2008; Theiss & Solomon, 2006b). One of the main assumptions of the relational turbulence model is that partner interference polarizes communication behaviors, but so far studies have been inconsistent in documenting that polarization. Some studies indicate that partner interference corresponds with more direct communication (e.g., Theiss & Solomon, 2006b), others reveal more disfluencies under conditions of partner interference (e.g., Knobloch & Schmelzer, 2008), and still others show no effect at all for partner interference (e.g., Theiss & Solomon, 2006a; Theiss et al., 2009). We encourage researchers to further probe the associations between partner interference and communication.

The results of the multiple groups analysis point to some interesting differences between Americans and South Koreans when predicting topic avoidance. For Americans, relationship uncertainty is the sole predictor of topic avoidance. This result is consistent with myriad studies that have documented a link between relational uncertainty and topic avoidance (e.g., Afifi & Burgoon, 1998; Knobloch & Carpenter-Theune,

2004; Knobloch & Theiss, 2011b). For South Koreans, the perception of turmoil in the relationship was the sole predictor of topic avoidance. The tendency for South Koreans to avoid certain topics when their relationships are plagued by turmoil might reflect their collectivist ideology. Perhaps when a relationship is not going well, partners will avoid communication so as not to burden the other with too much stress or to avoid face threats (Oetzel & Ting-Toomey, 2003). Perhaps topic avoidance is an overture of politeness that is amplified when relationships are in turmoil. Of course, these explanations are mere speculation in the absence of data, so we look forward to future research on this issue.

Strengths and limitations

One strength of this study is that it is the first to test the generalizability of the relational turbulence model to other cultures. Given the similarity between the two samples in age and number, we feel this test is an accurate representation of cultural similarities and differences. Another strength is that the South Korean sample was comprised of native South Koreans. Many cross-cultural studies obtain cross-cultural samples by surveying students who are studying at universities in the US, so by obtaining South Korean participants who were currently living in their home country we were able to reduce the possibility that their relational beliefs or behaviors had been colored by living in United States culture.

One shortcoming of this research is that it uses a convenience sample of college-aged individuals to test the model. Although we chose to focus on this population because they are likely to be in the type of developing relationship privileged by the relational turbulence model, we acknowledge that this focus limits the generalizability of our findings. Another limitation is that our research did not account for the potential effects of ‘Americanization’ on younger generations of Koreans, which may influence how younger generations view romantic relationships (Park, 2009). Similarly, we did not measure dimensions of cultural ideology, such as individualism/collectivism, masculinity/femininity, or power distance; thus, our study falls short in terms of explaining *why* cultural differences emerged in our data. A final shortcoming is that due to limited time and resources, we were unable to pre-test the questionnaire in a South Korean sample to determine if the measures were valid and reliable in a non-U.S. sample. Although the items were translated into the native language of South Korean participants, subtle differences in meaning may have diminished the reliability of those measures in the South Korean sample.

Conclusion

In conclusion, our results suggest some subtle differences in the ways Americans and South Koreans perceive their romantic relationships. Specific cultural differences were found in the trajectory of partner interference across different levels of intimacy, as well as in the variables that predict turmoil and topic avoidance. We are encouraged by the findings that were revealed in this study and we look forward to future research that might model more similarities and differences in romantic relationships across cultures.

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