A model of relational turbulence: The role of intimacy, relational uncertainty, and interference from partners in appraisals of irritations

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ABSTRACT

The development of romantic relationships is a complex process by which previously autonomous individuals come to perceive themselves as a social unit. We propose that the transition from casual dating to serious involvement coincides with relational turbulence in courtship, and we identify relational uncertainty and interference from partners as mechanisms that may explain why this turmoil occurs. We test our model by examining people’s appraisals of irritating circumstances as a marker of relational turbulence. We conducted a cross-sectional study in which individuals evaluated the degree of severity and relationship threat of potential irritations that had occurred recently in their dating relationship. Although the effect size was small, results consistent with our predictions indicated that negative appraisals were curvilinearly associated with intimacy. Also as anticipated, we documented positive associations between negative appraisals and both relational uncertainty and interference from partners. Contrary to our expectations, however, neither relational uncertainty nor interference from partners mediated the curvilinear trajectory between negative appraisals and intimacy. We discuss the implications of these findings for understanding relational turbulence in dating relationships.
Participants in romantic relationships must navigate commonly occurring turning points, tensions, and conflicts (Baxter & Bullis, 1986; Baxter & Montgomery, 1996; Surra & Hughes, 1997), but the transition from casual dating to serious involvement appears to be a particularly turbulent period within courtship. For example, retrospective accounts of conflict over the lifespan of courtships reveal that the frequency of arguments peaks as couples reach the relationship stage defined by serious dating (Braiker & Kelley, 1979) or sexual intercourse (Christopher & Cate, 1985). Likewise, cross-sectional studies indicate an apex in both decisions to confront partners (Cloven & Roloff, 1994) and verbal aggression (Billingham & Sack, 1987) that coincides with establishing emotional attachment. A study operationalizing intimacy in terms of relationship length demonstrated that the experience and expression of negative emotion is most intense in relationships of moderate duration (Aune, Aune, & Buller, 1994). Similarly, research suggests that emotional jealousy is highest among individuals who report moderate levels of love for their dating partners (Knobloch, Solomon, & Cruz, 2001). Viewed as a set, these studies suggest that the emergence of a mutually committed and interdependent relationship involves a period of heightened intensity and drama. We label the variety of tumultuous experiences that occur within romantic relationships relational turbulence.

Our goal in this article is to identify relational uncertainty and interference from partners as relationship development processes that account for relational turbulence during the transition from casual dating to serious involvement. Implicit in our perspective is the assumption that relational turbulence is a by-product of emerging intimacy in romantic associations; in other words, relational turbulence inherently accompanies the redefinition of a relationship as intimate. In the following section, we present our model of relational turbulence. We then examine appraisals of irritations as a marker of turmoil suitable for evaluating our perspective. Finally, we present a cross-sectional study that investigates the associations between appraisals of irritations and intimacy, relational uncertainty, and interference from partners.

**A model of relational turbulence**

For courtships to develop beyond casual dating, individuals must develop a differentiated understanding of each other as individuals (Miller & Steinberg, 1975), reach consensus about the nature of their relationship (Berger & Bradac, 1982), regulate their feelings of emotional attachment (Berscheid, 1983; Braiker & Kelley, 1979), coordinate patterns of resource exchange (Kelley & Thibaut, 1978), and cultivate a long-term orientation.
toward the future (Rusbult, Olsen, Davis, & Hannon, 2001). Although these challenges ebb and flow within relationships (Baxter & Montgomery, 1996), the initial passage from independence to attachment is a crucial period in which individuated conceptions of self and other are replaced by more dyadic orientations (Aron, Norman, & Aron, 2001). In our view, processes that correspond with this transformation are also likely to promote reactivity (i.e., turbulence) to relationship events in ways that magnify their intensity. More specifically, we suggest that relational uncertainty and interference from partners may give rise to turbulence during the transition from casual dating to serious involvement.

**Relational uncertainty as a foundation of relational turbulence**

Relational uncertainty is the degree of confidence people have in their perceptions of involvement within interpersonal relationships (Knobloch & Solomon, 1999, 2002a). Following Berger and Bradac (1982), we conceptualize relational uncertainty as an umbrella construct that encompasses three interrelated yet unique sources of ambiguity. **Self uncertainty** addresses the questions people have about their own involvement in a relationship, and **partner uncertainty** concerns the doubts people experience about their partner’s involvement in a relationship. **Relationship uncertainty**, which involves questions associated with the relationship itself, exists at a higher order of abstraction than either self or partner uncertainty because it embodies ambiguity about the dyad as a unit (Berger & Bradac, 1982). Although partners can experience uncertainty about the nature of involvement at any point in a relationship’s trajectory (cf. Emmers & Canary, 1996; Planalp & Honeycutt, 1985; Planalp, Rutherford, & Honeycutt, 1988), we propose that self, partner, and relationship uncertainty may give rise to the difficulties that characterize the transition from casual dating to serious involvement.

Based on an analysis of developmental patterns of ambiguity in courtships, we argue that relational uncertainty is an important mechanism underlying relational turbulence. Relational uncertainty may be quite limited in nonintimate associations, because normative role expectations (e.g., Miller & Steinberg, 1975) and scripts for relationship initiation (e.g., Clark, Shaver, & Abrahams, 1999; Honeycutt & Cantrill, 2001) provide relatively concrete schemas for making sense of the relationship. Whereas decreases in uncertainty about a partner’s qualities should go hand-in-hand with relationship escalation (Berger & Calabrese, 1975), the transition to serious dating raises questions about the nature of people’s involvement in the relationship itself (Baxter, 1987; Knobloch & Solomon, 2002b). Once courtships are defined by mutual commitment, doubts about the current status of the relationship and the future goals of the participants are likely to recede. Thus, we propose that relational uncertainty follows a curvilinear trajectory over the course of relationship development, such that doubts about involvement are greatest at moderate levels of intimacy.

Although a previous test of our reasoning revealed a negative linear association between intimacy and relational uncertainty (Solomon &
Knobloch, 2001), we believe that people may have difficulty reporting on relational uncertainty as distinct from more general perceptions of doubt, particularly within nonintimate associations in which uncertainty about issues other than relational involvement is typically very high. To separate judgments of relational uncertainty from more general doubts that may be present in relationships, we conducted a subsequent study to examine the magnitude of relational uncertainty individuals attributed to hypothetical events (Knobloch & Solomon, 2002b). We found that evaluations of relational uncertainty were highest at moderate levels of intimacy. Given those results, we are encouraged that relational uncertainty may be implicated in the experience of relationship difficulties during the transition from casual to serious involvement.

Empirical evidence also suggests that relational uncertainty increases people’s reactivity to relationship circumstances, thereby contributing to the relational turbulence evident during the transition from casual dating to serious involvement. In particular, our research has found that relational uncertainty corresponds with more extreme cognitive reactions (Knobloch & Solomon, 2002b) and emotional responses (Knobloch & Solomon, 2002b, 2003) to unexpected events within courtship. Accordingly, we characterize relational uncertainty as an aspect of relationship development that may promote the turmoil embedded in the shift from a nonintimate to an intimate relationship.

**Interference from partners as a foundation of relational turbulence**

A second force that may promote relational turbulence at moderate levels of intimacy arises from the negotiation of interdependence within dating relationships. *Interdependence*, defined as the coordination of mutually beneficial systems of behavior between partners, generally increases as relationships progress (e.g., Kelley et al., 1983; Perlman & Fehr, 1987). Although interdependence itself may correspond directly with intimacy, we believe that the process of establishing interdependence creates disruptions that render the middle stages of relationship development unique.

As detailed in our previous work (Solomon & Knobloch, 2001), our perspective is heavily influenced by Berscheid’s (1983) ideas about how developing interdependence affects people’s experience of emotion. Berscheid depicts behavior as organized into action sequences, which are designed to operate from activation to completion in an uninterrupted and nonconscious fashion. In her view, relationships develop as each partner’s activities become contingent upon the other’s participation in the action (see also Kelley et al., 1983). People’s initial efforts at integration inevitably involve errors, missteps, and interrupted action sequences. With the ongoing negotiation of interdependence, however, partners typically learn to resolve disruptive patterns of involvement and establish mutually facilitating action sequences. Berscheid’s (1983) perspective, then, defines relationship development as the process by which partners convert disruptive systems of influence into more meshed action sequences.

Our analysis of Berscheid’s logic highlights how frequent disruptions
from a dating partner may give rise to relational turbulence during the transition from independent to interdependent relations. In the early stages of relationship development, a partner has limited involvement in an individual's activities and correspondingly few opportunities to interfere with those routines. During the transition to greater intimacy, however, a person begins to incorporate a partner into everyday activities, thereby increasing the likelihood that a partner will disrupt previously fluid action sequences. Over time, interference should be replaced by facilitative patterns of interdependence as a partner learns to enhance, rather than undermine, goal achievement.

Consistent with this logic, two studies have documented a curvilinear association between intimacy and reports of a partner's interference in a variety of everyday activities (Knobloch & Solomon, 2004; Solomon & Knobloch, 2001). We interpret this evidence to suggest that interference from partners is a by-product of relationship development that may generate the relational turbulence apparent at moderate levels of intimacy.

Several theories of relationship development suggest that closeness emerges incrementally as couples progress through relationship stages (Altman & Taylor, 1973; Murnstein, 1987). Other perspectives emphasize how the experience of key turning points (Baxter & Bullis, 1986; Surra & Hughes, 1997) or critical events (Siegert & Stamp, 1994) produce shifts in the relationship's trajectory. Our model positions gradual changes in relational uncertainty and interdependence as the foundation of the qualitatively unique period of relating that accompanies the transition from casual to serious involvement. Thus, our perspective assimilates incremental processes of change with qualitative transformations to explain relational turbulence.

**Appraisals of irritations as a marker of relational turbulence**

The model of relational turbulence we propose has implications for dyadic turmoil in a variety of forms; specifically, we suggest that any indicator of relational turbulence will be more prominent during the transition from casual to serious dating. In this article, we focus on people's appraisals of potential annoyances as an indicator of reactivity, intensity, and negativity. We first define appraisals, in general, and identify appraisals of severity and relationship threat as particularly relevant to relational turbulence. Next, we use our model of relational turbulence to advance hypotheses linking intimacy, relational uncertainty, and interference from partners to appraisals of irritations.

**Appraisals of severity and relationship threat**

The appraisal process refers to people's efforts to label, define, and circumscribe the parameters of a set of circumstances (e.g., Fincham, Bradbury, & Grych, 1990; Honeycutt, 1993). Although virtually anything can be the target of appraisal efforts, unexpected and negative events within close relationships are particularly likely to activate sense-making systems...
When processing information about a partner’s negatively valenced behavior, people can either interpret those actions as consistent with their prior expectations, or they can revise their previous beliefs in light of the partner’s behavior (Honeycutt, 1993). Appraisals, in turn, determine whether a partner’s negative behaviors require action, dismissal, or further vigilance (e.g., Fincham et al., 1990; Newell & Stutman, 1991). In this way, sense-making activities provide insight into people’s reactivity to events that occur within close relationships.

Perceptions of severity and relationship threat comprise two appraisals that are particularly relevant to negative events in romantic relationships. Appraisals of severity address the magnitude of the exigence created by irritating situations; in other words, they focus on the importance or size of a problem (e.g., Cloven & Roloff, 1991). Appraisals of relationship threat assess the degree to which irritating circumstances may damage the relationship (e.g., Afifi & Metts, 1998). Although perceptions of relationship threat are likely to be influenced by assessments of severity, this appraisal dimension focuses more specifically on the extent to which circumstances could undermine relational well-being. Appraisals of severity and relationship threat shape how people interpret and respond to a variety of negative circumstances (e.g., Fincham et al., 1990; Newell & Stutman, 1991); thus, they constitute indicators of relational turbulence suitable for evaluating our model.

**Hypotheses**

Our perspective suggests that any marker of turmoil will peak during the transition from casual dating to serious involvement. Accordingly, we expect appraisals of irritations to manifest a curvilinear trajectory such that perceptions of severity and relationship threat are magnified at moderate levels of intimacy and attenuated when intimacy is either low or high. To formalize this assumption, we hypothesize that developmental patterns of relational turbulence will be apparent in the association between intimacy and appraisals of irritations:

**H1:** Intimacy is curvilinearly associated with appraisals of the severity and relationship threat of irritations, such that those appraisals peak at moderate levels of intimacy.

If relational uncertainty and interference from partners are the foundation of relational turbulence at moderate levels of intimacy, then they should correlate with appraisals of irritations. With respect to relational uncertainty, several lines of research imply that interpersonal doubts correspond with more negative appraisals of irritating circumstances. Violations of expectations that coincide with increased relational uncertainty often damage romantic relationships (Afifi & Metts, 1998). In addition, most relational uncertainty increasing events involve negatively valenced affect (Planalp & Honeycutt, 1985; Planalp et al., 1988). Moreover, relational uncertainty coincides with both the perceived negativity of critical relationship events (Knobloch & Solomon, 2002b) and the magnitude of negative
emotion associated with surprising relationship situations (Knobloch & Solomon, 2002b, 2003). Taken as a set, these findings suggest that relational uncertainty intensifies people’s reactions to relationship events.

Berscheid’s (1983; see also Mandler, 1975) perspective implies a similar link between interference from partners and appraisals of irritations. In particular, Berscheid argued that disruptions to otherwise nonconscious action sequences stimulate emotions. She posited that the emotional intensity of romantic associations is greatest when partners are working to establish interdependence, but then it subsides within well-developed and coordinated relationships. Although Berscheid focused on the foundations of emotional experiences in particular, her arguments imply that interference from partners heightens reactivity to relationship events, in general. We extend Berscheid’s logic to propose that a partner’s tendency to interfere with everyday activities corresponds with appraisals of irritations.

The evidence we reviewed suggests that both relational uncertainty and interference from partners have positive associations with appraisals of the severity and relationship threat of irritations. Our perspective further implies that relational uncertainty and interference from partners are the foundation of the relational turbulence apparent at moderate levels of intimacy. Accordingly, we advance hypotheses predicting that these relationship parameters are positively correlated with appraisals of irritations, and that they mediate the association between intimacy and appraisals. Formally stated:

\[ H2: \text{Relational uncertainty is positively associated with appraisals of the severity and relationship threat of irritations.} \]
\[ H3: \text{A partner’s interference is positively associated with appraisals of the severity and relationship threat of irritations.} \]
\[ H4: \text{Relational uncertainty and a partner’s interference mediate the curvilinear association between intimacy and appraisals of the severity and relationship threat of irritations.} \]

**Method**

Two decisions shaped the method of the study we conducted. First, testing our hypotheses required that we capture variation in levels of intimacy within dating relationships. To do so, we employed a cross-sectional design comparing the appraisals of irritations reported by individuals at varying levels of romantic involvement. Although a longitudinal design might map the proposed developmental trajectory more effectively, we were concerned that procedures that required people to focus on irritations for a sustained period would have negative consequences for participants (cf. Wilson & Kraft, 1993). Moreover, many of the studies that have documented relational turbulence at moderate levels of involvement utilized cross-sectional data (e.g., Aune et al., 1994; Billingham & Sack, 1987; Cloven & Roloff, 1994). Thus, we considered a cross-sectional study appropriate to test our hypotheses.

Second, evaluating our perspective required that we gather appraisals of
irritations from our participants. One option is to examine self-reports of existing problems (e.g., Cloven & Roloff, 1994); however, focusing on circumstances defined a priori as problematic would limit variation in the appraisals of those events. As an alternative, Solomon and Samp (1998) asked participants to evaluate hypothetical circumstances. Whereas that method isolated initial appraisals, perceptions of severity and relationship threat may be mitigated when people contemplate hypothetical scenarios. To balance these concerns, we asked participants first to identify potentially irritating circumstances they had experienced recently, and then to report their appraisals of those events. In this way, we sought to capture appraisals of potential irritations that varied in negativity, while maintaining a focus on participants' actual experiences.

Sample
Students in communication classes at a large Midwestern university received extra course credit for completing questionnaires about a current romantic relationship. To solicit a sample of dating relationships that contained a broad range of intimacy levels, we provided participants with the following definition: ‘We consider a dating relationship as one where you and the other person have gone out on what you consider a date at least once before and you expect that you will go out on a date again in the near future. Also, we distinguish dating relationships from friendships in that you perceive a dating relationship to have at least the potential for romantic involvement.’ Data were collected from groups of no more than 25 participants. On average, respondents completed the study in 45 minutes.

The sample included 209 participants (95 males, 114 females) who were involved in a dating relationship at the time of the study. Respondents ranged in age from 18 to 30 years, but 90% of participants were between 18 and 22 years old (M = 20.50, SD = 1.91). Participants reported on romantic relationships that ranged in length from less than one month to more than seven years (M = 17.68 months, SD = 17.95 months, median = 12 months). Most respondents indicated that they were dating their partner exclusively (91%) and that their partner was dating them exclusively (90%). The sample included participants who reported on either a heterosexual relationship (93%) or a homosexual relationship (7%).

Stimuli development
As noted previously, we chose to evaluate our hypotheses by examining associations between relationship characteristics and participants’ appraisals of circumstances that recently characterized their dating associations. Because the external validity of our results is tied to the comprehensiveness of the potential irritations that our respondents examined, we sought to develop a set of exemplars that captured the variety of irritations people associate with dating partners.

Our starting point was self-reports of irritations collected in a previous investigation (Cloven & Roloff, 1993). In that study, 160 undergraduates (63 males, 97 females) were asked to identify up to 10 sources of irritation in a current dating relationship; a total of 845 specific irritations were gathered. Because Cloven and Roloff’s sample resembled the respondents in this study, and their investigation solicited a large number of irritations, we deemed the 845 irritations an appropriate foundation for developing a diverse and relevant set of irritation exemplars.
A colleague who was not involved in this investigation reviewed the full set of irritations several times and eliminated redundancies. The result was 80 nonredundant exemplars that captured a variety of partner behaviors and characteristics reported as irritating within dating relationships (examples include ‘my partner is indecisive,’ ‘my partner flirts with some of my friends,’ ‘my partner is insensitive,’ ‘my partner teases me constantly,’ and ‘my partner takes me for granted’). Although these exemplars reflect circumstances that individuals in the Cloven and Roloff sample found irritating in their dating relationships, participants in this investigation may or may not consider them problematic. Thus, these exemplars comprise potential irritations for the purposes of this study.

Procedure
Participation in the study commenced in three phases. First, respondents completed a questionnaire containing measures of demographic variables, intimacy, relational uncertainty, and a partner’s interference. Next, participants were given the set of 80 note cards describing potential irritations in random order. Participants also received the following written instructions:

The note cards you have been given identify things that partners sometimes do that people may or may not find irritating. Go through the decks of cards and identify those things that your partner has done in the last two weeks. We are not asking you to identify things that irritated you about your partner; instead, we want you to identify all the cards that describe things, irritating or not, that your partner has done in the last two weeks. Also, be sure to focus on just the last two weeks, rather than the whole relationship with your partner.

In total, 208 of 209 participants indicated that at least one of the note cards characterized their relationship in the previous two weeks. Three individuals selected a substantial number of note cards, so we asked them to identify the 18 that occurred most recently in their relationship. Accordingly, the number of note cards that respondents identified ranged from 0 to 18 (M = 8.30, SD = 3.55).

During the third phase of the study, participants completed a one-page follow-up questionnaire for each note card they selected. This follow-up questionnaire assessed the extent to which respondents perceived the circumstances described on the card to be a serious problem or a threat to the relationship.

Measures
As a first step in constructing our measures, we conducted confirmatory factor analyses (CFA) on all of our multi-item scales. CFA requires that items comprising a multi-item index meet the criteria of face validity, internal consistency, and parallelism (Hunter & Gerbing, 1982). After confirming the unidimensionality of each multi-item scale, we averaged responses to the individual items.

Intimacy. Although intimacy is a multifaceted construct (Prager, 1995), our framework highlights the general influence of intimacy on people’s appraisals of irritations. Thus, we operationalized intimacy through a composite variable that incorporated various measures of intimacy associated with developmental patterns (cf. Cloven & Roloff, 1994; Solomon, 1997). This strategy allowed us to capture multiple aspects of intimacy that are implicated in developmental processes using an inclusive and parsimonious indicator.
One component of the composite measure was Rubin’s (1970) Love Scale. Respondents employed a Likert scale (1 = not at all true, 9 = definitely true) to indicate their responses to items that addressed feelings of affiliative need, willingness to help, and exclusiveness toward their partner. The measurement analyses identified five items as a unidimensional measure of love: (a) I would do anything for my partner; (b) if I could never be with my partner, I would feel miserable; (c) I feel responsible for my partner’s well-being; (d) I would greatly enjoy being confided in by my partner; and (e) it would be hard for me to get along without my partner (M = 6.64, SD = 1.63, α = .83).

A second component of the composite intimacy variable encompassed respondents’ commitment to continuing the association (e.g., Rusbult, 1980). Participants indicated the extent to which they agreed with a series of statements using a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree). Three items formed a unidimensional scale: (a) I would like my relationship to last a lifetime; (b) I am attached to my dating partner; and (c) I am committed to my relationship (M = 4.86, SD = 1.09, α = .83).

A third aspect of the composite intimacy variable concerned people’s expectations for the future of the relationship. To measure the extent to which the dating relationship had developed towards marriage (Lloyd, Cate, & Henton, 1984), respondents were presented with the following question: ‘At this point in time, what do you feel the chance is of your relationship leading to marriage?’ Participants indicated their perception of likelihood of marriage by circling a response from 0 to 100% on a scale that provided 5% increments (M = 55.05%, SD = 31.85%).

As expected, bivariate correlations indicated sizeable overlap between love and commitment (r = .76, p < .001), between love and likelihood of marriage (r = .64, p < .001), and between commitment and likelihood of marriage (r = .76, p < .001). Thus, as a final step in operationalizing intimacy, we converted the measures of love, commitment, and likelihood of marriage to z-scores, and we averaged those z-scores to form a composite intimacy measure. Coefficient alpha for the composite scale was .89.

Relational uncertainty. We operationalized relational uncertainty using measures we developed in previous work (e.g., Knobloch & Solomon, 1999). Participants were presented with a series of statements prefaced by a stem that read ‘How certain are you about . . . ?’ Then, respondents rated their certainty with each of the statements using a 6-point Likert scale (1 = completely or almost completely uncertain, 6 = completely or almost completely certain). We reverse-scored responses to all items to compute measures of relational uncertainty. Following previous research (Knobloch & Solomon, 1999, 2002b; Knobloch et al., 2001), we identified unidimensional subscales of items within self, partner, and relationship uncertainty; then, we averaged those subscales to create three composite measures.

Our measure of self uncertainty contained 14 items, including (a) how much you want this relationship right now, and (b) whether or not you want this relationship to last (M = 2.33, SD = 1.03, α = .93). A similar set of 15 items operationalized partner uncertainty; sample items include (a) how your partner feels about the relationship, and (b) your partner’s goals for the future of the relationship (M = 2.09, SD = 1.05, α = .95). Finally, 16 items measured relationship uncertainty, including (a) the norms for this relationship, and (b) the future of the relationship (M = 2.28, SD = 0.96, α = .90).
Consistent with previous work (Knobloch & Solomon, 1999, 2002b; Knobloch et al., 2001), bivariate correlations indicated positive overlap between self and partner uncertainty ($r = .49, p < .001$), self and relationship uncertainty ($r = .74, p < .001$), and partner and relationship uncertainty ($r = .78, p < .001$). Nonetheless, CFA results indicated that the three scales did not form a unidimensional second-order composite scale. Theoretical conceptualizations also delineate the three facets of relational uncertainty (Berger & Bradac, 1982), but only a few studies have evaluated the distinctiveness of their empirical relationships with other phenomena (e.g. Knobloch & Solomon, 2002b; Knobloch et al., 2001). Thus, to facilitate an evaluation of the unique effects of these relatively new measures, we examined them as separate scales.

A partner’s interference. We measured a partner’s interference by asking participants the degree to which their partner interferes with everyday activities (Solomon & Knobloch, 2001). Respondents used a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) to record their agreement with a series of statements. The following four items formed a unidimensional measure of *a partner’s interference*: (a) my partner interferes with the plans I make, (b) my partner interferes with my plans to attend parties or other social events, (c) my partner interferes with the amount of time I spend with my friends, and (d) my partner interferes with the things I need to do each day ($M = 2.48, SD = 1.23, \alpha = .88$).

Appraisals of potential irritations. Participants completed a one-page questionnaire that assessed their appraisals of each potential irritation they identified. They used a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) to record their agreement with statements offering a description of the potential irritation. Using individual irritations as the unit of analysis ($N = 1736$), we conducted a CFA to identify unidimensional measures of severity and relationship threat. *Severity* contained three items: (a) this behavior is a problem, (b) this behavior is unacceptable, and (c) this behavior is irritating ($M = 3.64, SD = 1.89, \alpha = .90$). Similarly, *relationship threat* included three items: (a) this behavior threatens our relationship, (b) this behavior makes me feel less good about this relationship, and (c) this behavior damages our relationship ($M = 3.04, SD = 1.89, \alpha = .94$). Given the magnitude of the correlation between the two appraisal measures, $r(1,734) = .84, p < .001$, and the similar roles ascribed to them within our hypotheses, we averaged the variables to form a single measure of *negative appraisals* ($M = 3.18, SD = 1.25, \alpha = .95$).

Because participants reported on varying numbers and sets of note cards, we computed averages of respondents’ appraisals across the circumstances that they selected as relevant to their dating relationship. More specifically, we first averaged the sets of items that addressed negative appraisals for each of the note cards that participants selected. Then, we computed the mean of the negative appraisal ratings across each respondent’s set of potential irritations. Although this step created composite negative appraisal scores that were based on different sets of potential irritations for each participant, it enabled us to represent appraisals of the circumstances relevant to each respondent in scores that could be compared across participants.
Results

Given the size of our sample and an α level of .05, the power to detect a small effect (r = .10; Cohen & Cohen, 1983) was approximately .29, and the power to detect both a medium effect (r = .30) and a large effect (r = .50) was approximately .99.

As a preliminary analysis, we evaluated all of our measures for sex differences. Independent samples t-tests indicated no differences between males and females in their reports of intimacy, relational uncertainty, a partner’s interference, and negative appraisals. We then computed zero-order correlations to gain insight into the bivariate associations between our variables (see Table 1). Next, we conducted hierarchical regression analyses to evaluate if negative appraisals of irritations share a curvilinear association with intimacy (H1).

Finally, we employed structural equation modeling to evaluate the overlap between negative appraisals and both relational uncertainty (H2) and interference from partners (H3), as well as to test whether relational uncertainty and interference from partners mediate the association between intimacy and negative appraisals (H4).

Hypothesis 1

Our first hypothesis predicted a convex curvilinear association (i.e., an inverted U-shaped trajectory) between intimacy and participants' appraisals of the severity and relationship threat of potential irritations. We evaluated this hypothesis using hierarchical regression techniques (e.g., Cohen & Cohen, 1983). We first regressed negative appraisals onto the composite measure of intimacy. Then, on the second step of the model, we included a quadratic term computed as the squared intimacy variable. The significance test associated with this step indicates the degree to which a curvilinear function provides a better fit to the data than a linear function.

On the first step of the model, a negative correlation was evident between intimacy and negative appraisals, R² = .05, F(1,206) = 10.60, β = −.22, p < .01. Results of the second step revealed that the squared intimacy term explained a modest but statistically significant portion of additional variance in negative appraisals, R² Δ = .02, F Δ(1,205) = 5.15, β = −.18, p < .05. Consistent with H1, the negative sign of the β for the squared intimacy term indicated a convex curvilinear trajectory (i.e., an inverted U-shaped curve). Although the effect size for the curvilinear term was small, this result is consistent with H1.

Table 1: Bivariate correlations among the independent and dependent variables

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<td>V1: Intimacy</td>
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<td>V2: Self uncertainty</td>
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<td>V3: Partner uncertainty</td>
<td>−.60***</td>
<td>.49***</td>
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<td>V4: Relationship uncertainty</td>
<td>−.71*</td>
<td>.74***</td>
<td>.78***</td>
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<td>V5: A partner’s interference</td>
<td>−.02</td>
<td>.15*</td>
<td>−.02</td>
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<td>V6: Negative appraisals</td>
<td>−.22***</td>
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Note. N = 208. *p < .05; **p < .01; ***p < .001.
To clarify the association, we plotted the curvilinear trajectory (see Figure 1) and evaluated the statistical significance of the slope at various levels of intimacy (e.g., Aiken & West, 1991). Results indicated that the upturn from low to moderate levels of intimacy was not statistically significant, and the downturn from moderate to high levels of intimacy was statistically significant. In other words, the correlation between intimacy and negative appraisals was near zero at low levels of intimacy, but it became increasingly more negative at high levels of intimacy. We also computed the maxima (i.e., the level of intimacy at which the slope shifts from positive to negative) for the quadratic function. This value demonstrated that the peak of the curve occurred at relatively low levels of intimacy (intimacy z-score = −.98). Nonetheless, the number of participants defining the positively sloped portion of the trajectory (n = 31, 15% of the sample) was substantial enough to conclude that the curvilinear effect was not driven by outliers. In total, these results approximate the curvilinear pattern predicted by H1.

FIGURE 1
The regression of negative appraisals onto intimacy.
Hypotheses 2, 3, and 4

We selected maximum likelihood structural equation modeling to test our remaining hypotheses for three reasons. This strategy allowed us to evaluate the associations between negative appraisals and both relational uncertainty ($H_2$) and a partner’s interference ($H_3$), while controlling for the effects of the other independent variables. Moreover, structural equation modeling provided us with a parsimonious method of testing the extent to which relational uncertainty and a partner’s interference mediated the association between intimacy and negative appraisals ($H_4$). This technique also permitted us to take into account measurement error in our data.

Because of the large number of latent variables included in the model relative to the size of our sample, we represented the latent variables in the structural model using parcels as single-item indicators. We created the parcels by averaging sets of items that our CFA results deemed unidimensional; we also accounted for unreliability within our measures by fixing the error variance of each parcel to $(1 - \alpha)(\sigma^2)$, as recommended by Bollen (1989). We tested the curvilinear association between intimacy and negative appraisals using a variable calculated as the square of the mean-centered intimacy measure, and we calculated the reliability of the squared intimacy term by computing Cronbach’s alpha for the squares of the $z$-scores for the measures of love, commitment, and likelihood of marriage (see Kenny & Judd, 1984).

To create the structural model, we began by specifying paths from intimacy to self uncertainty and to partner uncertainty; these paths are consistent with research documenting negative linear associations between intimacy and the sources of relational uncertainty (Knobloch et al., 2001; Solomon & Knobloch, 2001). In turn, we included paths from both self uncertainty and partner uncertainty to relationship uncertainty. Not only are those paths supported by theoretical logic implying that self-focused and partner-focused ambiguity contribute to questions about the relationship itself (Berger & Bradac, 1982), but they also cohere with empirical findings about the correspondence among the three sources of relational uncertainty (Knobloch et al., 2001). Guided by work suggesting that interference from partners peaks at moderate levels of intimacy (Knobloch & Solomon, 2004; Solomon & Knobloch, 2001), we also incorporated a path from the squared intimacy term to a partner’s interference. Then, to reflect the associations predicted by $H_2$ and $H_3$, we specified paths from relationship uncertainty and a partner’s interference to negative appraisals. Although our test of $H_1$ indicated a curvilinear association between intimacy and negative appraisals, we expected relationship uncertainty and a partner’s interference to mediate that association ($H_4$); accordingly, we did not include a path from the squared intimacy term to negative appraisals.

Results of this analysis indicated that our original structural model did not fit the data adequately, $\chi^2(13, N = 208) = 37.56, p < .001$, $CFI = .97$, $RMSEA = .10$; however, six of the seven paths were statistically significant. To formulate a model that fit the data more effectively, we proceeded to make modifications as indicated by the analysis. Results of the Wald’s test indicated that the path from the squared intimacy term to a partner’s interference was not statistically significant in this sample, so we eliminated that path. Because deleting paths from a structural model does not improve overall fit, results indicated that the model fit the data slightly less well, $\chi^2(14, N = 208) = 37.88, p < .001$, $CFI = .97$, $RMSEA = .09$. 


We then added two paths, one at a time, based on the Lagrange multiplier test. In contrast to our expectation that relational uncertainty and a partner’s interference mediate the curvilinear association between intimacy and negative appraisals (H4), we included a path from the squared intimacy term to negative appraisals. We also added a path from a partner’s interference to self uncertainty. With the addition of these paths, results indicated that the model fit the data adequately, \( \chi^2(12, N = 208) = 19.86, p > .05, \text{CFI} = .99, \text{RMSEA} = .06. \)

The final model is presented in Figure 2. Consistent with H2, relationship uncertainty was positively associated with negative appraisals. Moreover, both self uncertainty and partner uncertainty exerted indirect positive effects on negative appraisals that were conveyed via relationship uncertainty. As anticipated by H3, a partner’s interference was positively associated with negative appraisals. In contrast to H4, findings revealed that neither relational uncertainty nor a partner’s interference mediated the curvilinear association between intimacy and negative appraisals. Rather, intimacy, relational uncertainty, and a partner’s interference were all statistically significant predictors of negative appraisals.
Discussion

We began this article by characterizing the transition from casual dating to serious involvement as an especially tumultuous period within romantic relationships. We then proposed a model of relational turbulence that highlights relational uncertainty and interference from partners as by-products of relationship development that magnify the intensity of relationship events. As a context for evaluating our perspective, we turned to the appraisals people generate to make sense of relationship circumstances. Results supported our expectations about the associations between appraisals and intimacy, relational uncertainty, and a partner’s interference; however, our prediction of mediation was not supported. We devote the following sections to discussing the implications of our findings.

Developmental patterns of appraisals of irritations

Guided by evidence that relational turbulence is magnified during the transition from casual dating to serious involvement, we predicted that individuals in moderately intimate associations attribute more severity and more relationship threat to potentially irritating situations (H1). Although the data generally conformed to this trajectory (see Figure 1), we note two qualifications to our results. The first qualification is that the effect sizes for both the linear and curvilinear associations between intimacy and negative appraisals were small. These results suggest to us that our efforts to identify more proximal predictors of relational turbulence are well placed. Another explanation for the small effect sizes may lie in our use of cross-sectional data to evaluate relationship development processes. Because a cross-sectional design assumes that individuals who report the same level of intimacy are at a similar point in the developmental trajectory, it ignores the different rates at which closeness, commitment, and feelings of love emerge within romantic relationships (Christopher & Cate, 1985). Our findings both support our logic about the prevalence of relational turbulence at moderate levels of intimacy and contribute to the corpus of cross-sectional studies documenting parallel results (Aune et al., 1994; Billingham & Sack, 1987; Cloven & Roloff, 1994; Knobloch et al., 2001); however, we recognize that longitudinal data are needed to provide a more sensitive test of these associations.

A second qualification is that the curvilinear trajectory only approximated the pattern specified by H1. More specifically, the initial increase in negative appraisals across low levels of intimacy was not statistically significant. We had assumed that people’s limited involvement in casual dating relationships would allow them to dismiss potentially irritating circumstances. At the same time, the early stages of relationship development involve efforts to forecast the rewards and costs the relationship may provide (Altman & Taylor, 1973; Kelley & Thibaut, 1978). Considered in this light, it is not surprising that problematic circumstances are likely to evoke negative appraisals within less intimate associations.

Despite these caveats, we did find evidence supporting our contention of
a decrease in people’s negative appraisals from moderate to high levels of intimacy. Not only are these results consistent with our theoretical perspective, but they also add to the body of work underscoring a decline in relational turbulence within emotionally attached, mutually committed, and interdependent associations (Billingham & Sack, 1987; Braiker & Kelley, 1979; Christopher & Cate, 1985; Knobloch et al., 2001). Perhaps the decrease in conflict, negative emotion, and negative appraisals follows from the resolution of tensions inherent in forming intimate attachments. Alternatively, the ability to resolve difficulties and curb reactivity may be a prerequisite to escalating the relationship (e.g., Lloyd & Cate, 1985; Siegert & Stamp, 1994). Although speculative, we suggest that both encountering relational turbulence and experiencing its resolution may yield a sense of accomplishment, investment, and closeness for dating partners (Knobloch & Solomon, 2002a).

An especially intriguing implication of our findings concerns the possible relationship maintenance function served by appraisals of irritations. Partners who have established high degrees of intimacy are likely to have invested considerable resources into the relationship (Kelley & Thibaut, 1978); as a result, they are probably motivated to continue the courtship into the future (Rusbult, 1983). We suspect that one strategy for preserving the relationship at high levels of intimacy is downplaying the severity and relationship threat of the irritations that inevitably occur. In a similar vein, Rusbult and her colleagues have identified a host of methods for maintaining commitment in the face of dissatisfying partner behavior, including accommodation, willingness to sacrifice, idealized beliefs, and derogation of alternatives (e.g., Rusbult et al., 2001). We nominate the trend toward diminished reactivity in people’s appraisals of irritations as another strategy that helps preserve intimate relationships.

Foundations of relationship development patterns

In developing our model of relational turbulence, we identified relational uncertainty and interference from partners as developmental processes that may promote reactivity. Whereas the experience of relational uncertainty represents an intrapersonal explanation for dyadic turmoil, the dynamics of developing interdependence emphasize interpersonal processes. As we predicted, findings indicated positive associations between negative appraisals of irritations and both relational uncertainty (H2) and interference from partners (H3). Thus, we have evidence that people experiencing relational uncertainty and interference from partners view irritations as more serious and more threatening to their relationships.

Of course, relational uncertainty does not always furnish negative consequences for relationships. On the contrary, it can provide partners with excitement, romance, and opportunities to reaffirm their commitment (e.g., Knobloch & Solomon, 2002a; Livingston, 1980). At the same time, empirical research has demonstrated that relational uncertainty often coincides with negatively valenced outcomes within courtship (e.g., Afifi & Reichert, 1996; Knobloch & Solomon, 2002b, 2003). The results of this investigation
suggest one avenue for reconciling these different points of view. Our findings indicate that doubts about interpersonal associations intensify reactions to negative relationship events. To the extent that this effect also applies to positively valenced situations, relational uncertainty may give rise to the sparks that enhance romantic relationships. Thus, we see evaluating the extent to which relational uncertainty magnifies both positive and negative experiences as a valuable direction for future research.

We also believe that the association between a partner’s interference in everyday goals and appraisals of irritations highlights the fragility of relationships during the transition to interdependence. The process of becoming interdependent mandates that partners involve each other in a variety of activities. To do so, individuals must rewrite behavioral scripts to incorporate the other person; as this happens, previously functional routines are inevitably disrupted. Our results suggest that the impact of these disturbances also extends beyond their immediate context. In other words, a partner’s interference not only impedes the performance of everyday tasks, but it also ripples through an individual’s assessment of that partner’s behaviors. Of course, our findings might also reflect a more general phenomenon that prompts people to view both potential irritations and their partner more negatively. In any case, we note that the co-occurrence of interference from partners and more negative appraisals of relationship circumstances may render moderately intimate relationships particularly vulnerable.

Neither relational uncertainty nor a partner’s interference mediated the curvilinear association between intimacy and appraisals of irritations (H4); rather, our results indicated that all three relationship parameters were unique predictors of negative appraisals. We considered relational uncertainty and interference from partners to be especially appealing explanations for increased reactivity because they are general enough to encompass the range of outcomes that constitute relational turbulence, but our data imply that some other mediating force must be in operation. Thus, although we have added relational uncertainty and interference from partners to the catalog of phenomena that correspond with markers of relational turbulence, our larger goal of assimilating these findings around some core mechanism awaits further research.

Ongoing efforts to conceptualize intimacy within romantic associations (e.g., Fehr, 1994; Register & Henley, 1992; Sternberg & Beall, 1991) may suggest alternative facets of relationship development to explore. Research linking relationship difficulties to the transition from casual to serious dating encompasses a variety of measures of intimacy, including longevity (Aune et al., 1994), sexual involvement (Christopher & Cate, 1985), and subjective feelings of closeness (Knobloch & Solomon, 2002b; Knobloch et al., 2001). We employed an operationalization emphasizing multiple facets of intimacy in this study to capture variation in people’s perceptions of their relationship. One drawback of our variegated measure, however, is that we are unable to determine whether participants experience relational turbulence in terms of qualitatively unique phases of development. Thus, we find
merit in future research that seeks not only to evaluate how various facets of intimacy coincide with relational turbulence, but also to clarify the developmental stages that correspond with heightened turmoil.

Beyond the independent effects of intimacy, relational uncertainty, and a partner’s interference, our structural equation modeling results revealed one other association that we did not predict a priori. Specifically, we found a positive association between a partner’s interference and self uncertainty. Individuals experiencing increased interference from partners may quite naturally entertain doubts about the viability of their continued involvement in the relationship. More generally, we think it likely that relational uncertainty and interdependence processes are intertwined components of relationship progression. Thus, we consider this result to be conceptually reasonable. Of course, such post-hoc findings require replication and must be interpreted cautiously until they are verified by future work.

Throughout this discussion, we have noted a variety of avenues for future research. As one final suggestion, we highlight the need to replicate these findings using alternative procedures for soliciting appraisals of relationship events. Our strategy was to ask individuals to review a variety of situations and to identify those that had occurred in their dating relationship within the two preceding weeks. Then, working with this subset of real and recent events, respondents evaluated the severity of each situation and the threat it posed to their relationship. Although the focus on our participants’ own experiences is a strength of our design, the set of events that respondents ultimately evaluated was bounded by the potential irritations that comprised our stimuli. In addition, our procedures allowed substantial variability in the specific events that participants might have associated with each of the potential irritations. Thus, we recommend using qualitative methods such as diaries or interviews to collect more nuanced reports of people’s experiences within romantic relationships. Not only would such a research design be useful for gaining access to the ways individuals conceptualize relational turbulence, but it would also be helpful for shedding light on the mechanisms that underlie reactivity as relationships develop.

REFERENCES


