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Relationship Characteristics Associated with the Experience of Hurt in Romantic Relationships: A Test of the Relational Turbulence Model

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We employed the relational turbulence model to identify (a) relationship characteristics associated with people's appraisals of hurtful messages, and (b) features of hurtful episodes and relationship characteristics that correspond with the directness of communication about hurt. We conducted a study in which 135 dating couples reported on their relationship once per week for 6 weeks. Relational uncertainty and interference from partners were positively associated with (a) the intensity of hurt, (b) appraisals of the intentionality of hurt, and (c) perceived damage to the relationship. Features of the hurtful episode were more proximal predictors of the directness of communication about hurt than characteristics of the relationship. We discuss how our findings shed light on the relational turbulence model and hurtful communication.

Romantic relationships can be a source of extreme pleasure and intense pain for the individuals who pursue them. Although romantic partners can provide comfort, support, and satisfaction, they can also launch the most lethal of criticisms, insults, and hurt. Hurtful episodes are relational transgressions that elicit vulnerability (Vangelisti, 2001), signal relational devaluation (Feeney, 2005), and stimulate feelings of rejection (Leary, Springer, Negel, Ansell, & Evans, 1998). Hurt arises in response to messages that communicate a partner's insensitivity (Murray, Bellavia, Rose, & Griffin, 2003). Studies show that most people feel hurt at least once a month and some individuals feel hurt as often as once a week (e.g., Leary & Springer, 2001). In sum, hurt is a frequent experience in relationships that can undermine intimacy between partners.

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Prior research has focused on the qualities of the hurtful experience and the consequences that hurtful messages have for the well-being of individuals and relationships. For example, scholars have examined how the perceived intentionality of a hurtful remark and the ability to respond predict people's perceptions of the intensity of hurt (e.g., Feeney, 2004; Vangelisti, 1994). Except for research documenting the associations that hurt shares with relational satisfaction and closeness (e.g., Vangelisti & Crumley, 1998; Young, 2004), relatively little is known about the characteristics of relationships that pave the way for the experience of hurt. In addition, some studies have identified responses to hurtful messages (e.g., Bachman & Guerrero, 2006; Vangelisti & Crumley, 1998), but more research is needed to understand how communicative responses to hurt are shaped by characteristics of the event and the relationship. Thus, the twin goals of this study are (a) to identify relationship characteristics that create a context in which individuals are more sensitive to hurt, and (b) to explore how features of the hurtful episode and characteristics of the relationship correspond with the directness of communication about hurt.

The relational turbulence model (Solomon & Knobloch, 2004) provides a foundation for this study because it identifies mechanisms inherent to relationship development that make people more reactive to relationship circumstances. Specifically, the model predicts that heightened relational uncertainty and interference from partners increase people's emotional, cognitive, and communicative reactivity to relational episodes. Because hurtful experiences are characterized by extreme emotions (e.g., Feeney, 2005; Leary et al., 1998; McLaren & Solomon, 2008), rumination about the hurtful remark (e.g., Roloff, Soule, & Carey, 2001), and polarized communicative responses (e.g., Vangelisti & Crumley, 1998), we conceptualize hurt as a manifestation of relational turbulence.

Core mechanisms in the relational turbulence model

The relational turbulence model argues that byproducts of relationship development prompt people to be more reactive to relationship events (Solomon & Knobloch, 2004). Specifically, the model nominates relational uncertainty and interference from partners as two mechanisms that contribute to *relational turbulence*, defined as heightened emotional, cognitive, and communicative reactivity to relationship circumstances.

Relational uncertainty is one mechanism in the model that may shape reactions to relational episodes. *Relational uncertainty* refers to the degree of confidence people have in their perceptions of involvement in interpersonal associations (Knobloch & Solomon, 1999). It stems from three interrelated sources of ambiguity in relationships: (a) *self uncertainty* refers to doubts that people have about their own involvement in a relationship; (b) *partner uncertainty* refers to doubts that people have about their partner's involvement in a relationship; and (c) *relationship uncertainty* refers to doubts that people have about the viability of a relationship as a whole. The model

proposes that relational uncertainty may heighten reactivity because people lack the information they need to make sense of relationship circumstances.

Consistent with the model's logic, relational uncertainty corresponds with an array of emotional, cognitive, and communicative manifestations of turmoil in romantic relationships. Research has linked the experience of relational uncertainty with more negative emotion (e.g., Knobloch, Miller, & Carpenter, 2007; Planalp & Honeycutt, 1985) and increased jealousy (e.g., Afifi & Reichert, 1996; Theiss & Solomon, 2006a). In addition, relational uncertainty corresponds with perceptions of increased turmoil in courtship (Knobloch, 2007) and appraisals of irritations as more severe and relationally threatening (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b). Doubts about romantic involvement are also associated with polarized communication patterns, including a tendency to be both more direct (e.g., Afifi & Weiner, 2004; Planalp & Honeycutt, 1985) and more indirect (e.g., Knobloch, 2006; Theiss & Solomon, 2006b). Taken together, this evidence suggests that relational uncertainty may intensify emotional, cognitive, and communicative reactions to relationship circumstances.

A second parameter in the model that may contribute to relational turbulence is *interference from partners*, which results from the negotiation of interdependence (Knobloch & Solomon, 2004; Solomon & Theiss, 2008). The process of establishing interdependence begins when individuals allow their partner to influence everyday activities (Kelley et al., 1983). Initial attempts at coordinating activities inevitably involve errors and interruptions to goal-directed behavior, but as partners develop interdependence, they learn to resolve disruptions and facilitate cooperative actions. Interference from partners occurs when a partner interrupts an individual's ability to achieve a goal (Knobloch & Solomon, 2004; see also Berscheid, 1983). The relational turbulence model argues that interference from partners may escalate reactivity because people are aggravated by frequent disruptions.

Empirical evidence compatible with the model's reasoning has linked interference from partners with markers of relational turbulence. Studies indicate that interference from partners corresponds with more negative emotion (Berscheid, 1983; Knobloch, 2008) and jealousy (Theiss & Solomon, 2006a). Furthermore, a partner's interference is associated with increased turmoil (Knobloch, 2007), appraisals of irritations as more severe and relationally threatening (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b), and more suspicion over potential rivals to the relationship (Theiss & Solomon, 2006a). It also predicts more direct responses to irritations and jealousy (Theiss & Solomon, 2006a, 2006b). These findings imply that a partner's interference may spark reactivity.

Predicting characteristics and consequences of hurtful experiences

Theorizing about hurt has identified a number of constructs related to hurtful episodes. One line of work privileges the intensity and frequency of hurt as central characteristics of the phenomenon (e.g., Miller & Roloff, 2006). Other perspectives
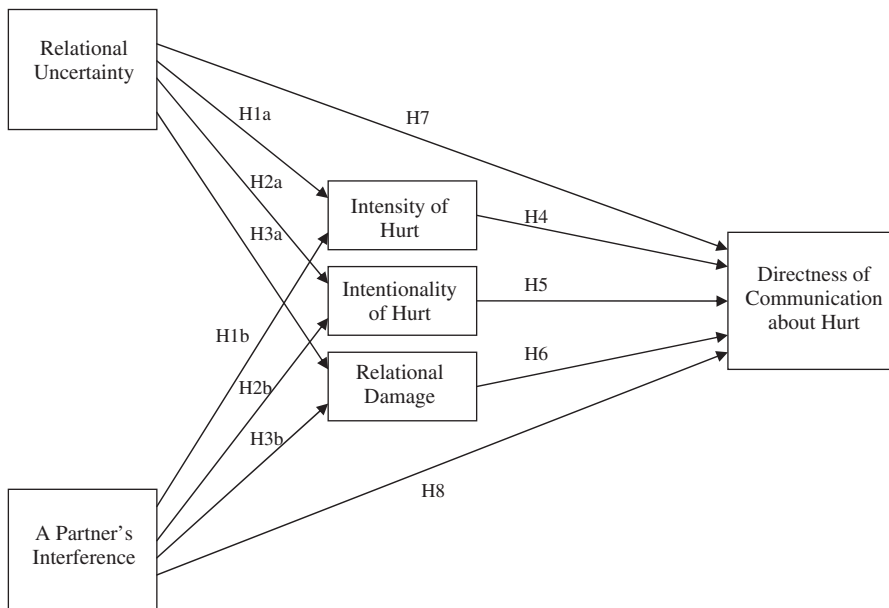
Figure 1 Predicted associations among all variables.

examine outcomes such as communicative responses to hurt (Vangelisti & Crumley, 1998) or damage to the relationship resulting from hurt (e.g., McLaren & Solomon, 2008; Vangelisti & Young, 2000). Thus, theorizing about hurt has focused primarily on appraisals of the hurtful event and relational outcomes of hurtful episodes. Guided by the relational turbulence model's attention to emotional, cognitive, and behavioral reactivity, we focus on the intensity of hurt as an emotional reaction, appraisals of the intentionality of the message and the perceived relational damage as cognitive reactions, and the directness of communication about hurt as a behavioral reaction. See Figure 1 for a summary of our hypotheses.

Appraisals of the intensity of hurt
The hurtfulness of a message can be conceptualized as the degree to which an act, word, or phrase causes the target to feel emotional pain (Vangelisti, 1994). Research indicates that messages are particularly hurtful when individuals are not afforded an opportunity to respond and less hurtful when recipients have the ability to defend themselves against the attack (Vangelisti, 1994; also see Vangelisti, 2007). In addition, people with better relational quality report being more deeply hurt by their partner's actions (Bachman & Guerrero, 2006). On the other hand, one study found that people who are highly satisfied and have frequent contact with their partner tend to describe messages as less hurtful (Vangelisti & Crumley, 1998). Although these findings are contradictory, they indicate that characteristics of the relationship are closely tied to evaluations of hurtful messages.

The relational turbulence model points to characteristics of close relationships that may predict the intensity of appraisals of hurt. According to the model, relational uncertainty and interference from partners correspond with more intense emotional reactions to relationship events. This logic, applied to the domain of hurt, implies that hurtful messages may be more upsetting under conditions of relational uncertainty because the partner's motives are ambiguous. Moreover, hurtful messages may be more upsetting under conditions of interference from partners because goal disruptions prompt strong emotion (Berscheid, 1983). Our first hypothesis draws on the logic of the relational turbulence model to predict that the intensity of hurt shares positive associations with relational uncertainty and partner interference.

H1a: Relational uncertainty is positively associated with the intensity of hurt.

H1b: A partner's interference is positively associated with the intensity of hurt.

Appraisals of the intentionality of hurt
Judgments of the intentionality of a hurtful message is one of the most commonly cited factors escalating the intensity of hurt (Vangelisti, 2007). Vangelisti and Young (2000) found that individuals felt less intense hurt when they perceived that the message was unintentional and that the partner did not hurt them frequently. In contrast, people who perceived that a hurtful message was intentional felt more intense hurt. Research indicates that factors such as relational satisfaction, relational closeness, and perceptions of the frequency of perpetration influence judgments of the intentionality of a hurtful message (Vangelisti & Crumley, 1998; Vangelisti & Young, 2000). The relational turbulence model implies that relational uncertainty and interference from partners are additional characteristics of the relationship that may predict appraisals of intentionality.

The relational turbulence model suggests that people draw more extreme cognitive appraisals of relationship events under conditions of relational uncertainty and partner interference. Thus, the cognitive appraisals of a partner's motives for a hurtful message should be sensitive to relational uncertainty and partner interference. Studies show that relationship characteristics play a part in people's appraisals of intentionality, such that individuals who are in relatively distant, unsatisfying partnerships perceive hurtful messages as more intentional (Vangelisti, 2001). Accordingly, we add relational uncertainty and partner interference as two features of relationships that predict appraisals of intentionality. Because relational uncertainty makes it difficult to predict a partner's motives and interference increases frustration with a partner's actions, people are likely to appraise their partner's behavior as more intentional under these relational circumstances. Thus, we submit the following hypothesis:

H2a: Relational uncertainty is positively associated with appraisals of the intentionality of a hurtful message.

H2b: A partner's interference is positively associated with appraisals of the intentionality of a hurtful message.

Appraisals of relational damage

Experiences of hurt also have consequences for the well-being of individuals and relationships (Feeney, 2004). At the individual level, hurtful messages coincide with feelings of alienation and low self-esteem (Clifford, 1987), as well as negative self-perceptions and feelings of rejection (Mills, Nazar, & Farrell, 2002). At the relational level, recipients who react negatively to hurtful messages report more long-term effects on their relationship (Feeney, 2004). Moreover, individuals who evaluate a hurtful event as a negative expectancy violation report less relational satisfaction and are more likely to terminate their relationship (Bachman & Guerrero, 2006). The reasoning of the relational turbulence model identifies relational uncertainty and interference from partners as additional predictors of perceived relational damage.

If relational uncertainty and interference from partners make people more reactive to relational circumstances in general, then hurtful episodes that occur under these conditions are likely to be perceived as particularly damaging to the relationship. When relational uncertainty is present, a partner's hurtful remark may serve as evidence that questions about involvement are warranted. When interference from partners is salient, a hurtful message may contribute to the corpus of hindrance. Notably, under conditions of relational uncertainty and interference from partners, individuals view their partner's irritating behavior as a more severe threat to the relationship (Solomon & Knobloch, 2004; Theiss & Solomon, 2006b), spouses rate conversation as more negative and threatening to the relationship (Knobloch, Miller, Bond, & Mannone, 2007), and dating partners evaluate their courtship as more tumultuous (Knobloch, 2007). Accordingly, we predict that individuals experiencing relational uncertainty and interference from partners will view hurt as more damaging to their relationship.

> H3a: Relational uncertainty is positively associated with perceptions of the relational damage resulting from a hurtful message.

> H3b: A partner's interference is positively associated with perceptions of the relational damage resulting from a hurtful message.

Predicting the directness of communication about hurt

Reactions to hurtful messages involve a variety of communicative behaviors that vary in directness. Scholars suggest that the experience of hurt triggers either a fight mechanism that involves retaliation and a desire to reciprocate harm, or a flight mechanism that involves physical and psychological avoidance of the attacker (Bachman & Guerrero, 2006; Fincham, 2000). A popular typology of hurt responses identifies three categories of communicative reactions (Vangelisti & Crumley, 1998): (a) *active verbal responses* (i.e., attacking the perpetrator, defending the self, requesting clarification); (b) *acquiescent responses* (i.e., crying, apologizing); and (c) *invulnerable responses* (i.e., silence, ignoring the message, laughing). This typology implies that communicative responses to hurt can vary in terms of their directness. Although the fight mechanism or active verbal responses might involve a direct confrontation with

the perpetrator, the flight mechanism or acquiescent and invulnerable responses are more likely to entail withdrawal and indirectness. Because directness is a primary dimension along which communicative responses to hurt may vary, we highlight communicative directness as a primary variable in this study. In the following section, we identify features of the hurtful episode and characteristics of the relationship as predictors of the directness of communication about hurt (see Figure 1 for an overview of the hypotheses).

Features of the hurtful episode that predict the directness of communication about hurt

Prior theorizing highlights three factors that may influence the directness of communicative responses to hurt. A first factor is the intensity of hurt. Although some individuals might respond to severe emotional pain in indirect ways by crying or withdrawing from the interaction (e.g., Vangelisti & Crumley, 1998), research on a variety of relational transgressions suggests that particularly severe problems require communicative directness to confront and resolve the issue (e.g., Fincham, Bradbury, & Grych, 1990; Roloff & Solomon, 2002). For example, especially irritating behaviors elicit more direct communication about the problem (Theiss & Solomon, 2006b). Individuals who experience extreme jealousy tend to confront the problem more directly than people experiencing low amounts of jealousy (Theiss & Solomon, 2006a). Similarly, hurtful episodes that are intense call for a direct response so that the perpetrator learns his or her remark was hurtful and so that the victim can prevent emotional damage in the future. In contrast, hurtful episodes that are not very intense might be easier for people to discount or withhold in an effort to preserve relational harmony (Solomon & Samp, 1998). Hence, we predict that more intense hurt corresponds with more direct communication about the event.

> H4: The intensity of hurt is positively associated with the directness of victims' communication about hurt.

A second factor that should influence directness is the intentionality of the message. Hurtful messages that are perceived as intentional may warrant a more direct confrontation with the perpetrator. When victims perceive that a partner was intentionally trying to inflict harm, they may be motivated to expose the partner's bad behavior, get an explanation, and seek retribution. Indeed, research shows that the perceived intentionality of hurtful messages corresponds with more revenge and more destructive communication (Bachman & Guerrero, 2006). In contrast, individuals who believe hurtful messages are unintentional are more likely to minimize the impact of the behavior, finding it more excusable (Malle & Knobe, 1997) or more easily forgivable (Fincham, 2000), and therefore unnecessary to confront. This logic contributes to our fifth hypothesis:

> H5: The perceived intentionality of hurt is positively associated with the directness of victims' communication about hurt.

A third feature that may influence people's directness is their perceptions of damage to the relationship. Couples who want to repair a relationship following transgressions (Dindia & Baxter, 1987; Emmers & Canary, 1996) or salvage a relationship during times of change (Baxter & Bullis, 1986) often rely on open relationship talk to overcome the adversity. In addition, when individuals experience events that increase uncertainty about a relationship, they engage in more open communication to repair the relationship and restore intimacy (Emmers & Canary, 1996). Moreover, when partners explicitly acknowledge and address relational transgressions, they benefit from increased forgiveness and relational repair (Kelley & Waldron, 2005). Thus, hurtful episodes that are especially damaging to the relationship may call for direct communication about the event to facilitate forgiveness and to repair the association.

> H6: Relational damage is positively associated with the directness of victims'
> communication about hurt.

Relationship characteristics that predict the directness of communication about hurt

Applying the relational turbulence model to the experience of hurt highlights two relationship characteristics that may predict the directness of communication about hurt: Relational uncertainty and interference from partners. Relational uncertainty undermines people's confidence in their ability to predict communication outcomes; therefore, they may employ more indirect communication to circumvent face threats (Knobloch & Solomon, 2002a). With regard to hurtful messages, victims should be indirect under conditions of relational uncertainty because they cannot anticipate how their partner will respond if confronted about the episode. Recall that individuals experiencing relational uncertainty engage in more topic avoidance (Knobloch & Carpenter-Theune, 2004) and indirect communication about various relationship events (Knobloch & Solomon, 2002b; Theiss & Solomon, 2006a,b). Hence, H7 predicts that people may communicate less directly about hurtful events under conditions of relational uncertainty.

> H7: Relational uncertainty is negatively associated with the directness of victims'
> communication about a hurtful message.

The relational turbulence model also implies that interference from partners may prompt people to engage in more direct communication to resolve disruptions. When individuals perceive barriers to their personal goals, they tend to respond with increased motivation to achieve desired outcomes (e.g., Ifert & Roloff, 1996, 1998; Paulson & Roloff, 1997); thus, individuals who experience interference from a partner may communicate more directly to attain their goals. With regard to hurt, we argued previously that partner interference may be associated with more intense hurt, more perceived intentionality, and more damage to the relationship, which all may call for more direct communication to resolve the issue and repair the relationship.

Accordingly, we expect that interference from partners is positively associated with communicative directness because victims are motivated to overcome disruptions.

> H8: A partner's interference is positively associated with the directness of victims' communication about a hurtful message.

Method

We tested our hypotheses by conducting a longitudinal dyadic study in which dating couples reported on their relationship once per week for 6 weeks. Participants were recruited from communication courses at large universities in the Northeastern and Midwestern United States. We invited individuals who were currently involved in a dating relationship to participate with their partner if both people had access to a secure Internet connection. Students earned a small amount of extra course credit for each wave of the study they completed; partners earned $5 for each wave they completed.

Sample

The sample included 270 individuals (135 couples) who completed at least the first wave of data collection. Of these participants, 131 were male and 139 were female (131 heterosexual couples, 4 lesbian couples). Individuals ranged from 18 to 38 years of age ($M = 20.68$ years, $SD = 2.23$ years, $Mdn = 20$ years). Approximately two-thirds of the participants were Caucasian (65%); others were African American (13%), Hispanic (11%), Asian (9%), and other (2%). At the start of the study, couples reported that they had been romantically involved with one another for an average of 1.75 years ($SD = 1.98$ years, $range = $ less than 1 month to more than 18 years, $Mdn = 1.18$ years). Individuals characterized the *status of their relationship* as friendship (4%), casually dating (14%), seriously dating (78%), or engaged to be married (4%).[1]

Procedures

We obtained consent by sending individuals an e-mail message and inviting them to respond if willing to participate. After both partners consented to the study, we e-mailed each person separately with a URL for the study, a unique username, and a password to access the questionnaire. Each week, we e-mailed participants a new password to access the next wave of the study. Participants who could not complete the questionnaire in one sitting could save their data on a secure server and finish the task at their convenience before the weekly deadline.[2]

Each week, participants completed items measuring relational uncertainty and interference from partners. Then, participants were asked to provide an open-ended account of a hurtful encounter that had occurred in the past week (see Table 1 for examples of reported episodes). Notably, not all individuals reported a hurtful event during every week of the study ($n = 226$ for Week 1, $n = 192$ for Week 2, $n = 177$ for Week 3, $n = 182$ for Week 4, $n = 166$ for Week 5, and $n = 156$ for Week 6). After

Table 1 Examples of Hurtful Messages Reported by Participants

1. We were just talking about our relationship and I told her that she should be more open, and then she told me she hooked up with another guy and I flipped out and yelled and cried. She told me about their encounter and it just hurt all over.
2. She told me that I was boring, that she didn't really like who I have become, and that we don't have the same kind of fun we used to.
3. My boyfriend said some hurtful things about my body referring to my stretch marks, fitness, and body weight. I often feel put down by these comments and react in an angry, revengeful manner.
4. We were talking about how her sister can't hold her liquor and she said, "God, I hate you! You always insult my family! Leave them alone!"
5. Face to face, lying in bed, she said, "I don't respect you."
6. We were studying for a test together and using the study guide provided by the professor. On one of the points listed he paraphrased the question and I looked in my notes to find the answer. He said, "Forget your notes and think for a second. I am asking you to think" in a tone that was condescending. I felt as if he insulted my intelligence by implying that I don't usually think beforehand. I looked at him with a shocked expression and returned to studying. He apologized but further explained his point that I should not look in my notes for verbatim questions.
7. He said, "You're the most beautiful girl in the world. Well, second, next to my mother."
8. I was talking about Muslim and Allah and I said something, I don't remember what, that my boyfriend thought was incorrect because he said, "are you f***ing serious" and first, I don't like the F-word, and it made me feel like he thought I was stupid.
9. In a heated discussion he told me to shut up, which he knows I really hate.
10. We were sitting around the table playing a game with some friends and drinking and I said, "tomorrow I'm starting my diet" and he said, "it's always you'll start it tomorrow." That hurt me a lot. I'm sensitive about my weight and he knows that.
11. We were talking about people we've dated in the past sitting in my dorm room. He talked about how beautiful his past girls are. I told him he was dumb for saying that and that it made me upset and that he should keep those thoughts to himself.
12. We were at the store, she said "I was looking at old pictures of you, and you used to be skinny, like real skinny."
13. I asked him why he didn't tell me that he loved me more often, and he said that he didn't because I should know that he already does. However, because he doesn't tell me that he loves me I wonder if he even does love me at all. After I brought it up to him he seemed to ignore it and drop the subject. I didn't say much after that.
14. We were talking about all of the things I needed to complete before leaving for spring break. I was really stressed about not finishing all of my things. [Boyfriend's name] told me that I need to be more productive with my time. I got really mad. I told him that he is not the boss of my time. I have excellent time management skills!
15. All last week I was bedridden with strep throat. One day I told her I made a purchase of $80. She thought the item that I purchased was unnecessary and I didn't need it so she kicked me out of the house to "think about what I did." While I was sick.

describing the hurtful message, participants completed items measuring the intensity of hurt, perceived intentionality of hurt, damage to the relationship resulting from the hurtful experience, and the directness of their communication about the hurt.[3]

Measures

We subjected the data from the Week 1 questionnaire to confirmatory factor analyses to assess the unidimensionality of the closed-ended measures. CFA procedures require that multi-item scales fulfill the criteria of face validity, internal consistency, and parallelism (Hunter & Gerbing, 1982). Goodness-of-fit criteria for the CFA models were set at $\chi^2/df < 3.00$, comparative fit index (CFI) > .90, and root mean squared error of approximation (RMSEA) < .10 (as per Browne & Cudeck, 1993; Kline, 1998). When an acceptable fit was achieved, composite variables were computed by averaging the responses to the unidimensional items. Table 2 reports sample sizes, descriptive statistics, and reliability estimates for each variable for each week.

Relational uncertainty

We used a short form of Knobloch and Solomon's (1999) scale to measure self, partner, and relationship uncertainty. Participants responded to items prefaced by the stem "How certain are you about. . .?" ($1 = completely\ or\ almost\ completely$ $uncertain$, $6 = completely\ or\ almost\ completely\ certain$). Items were reverse-scored such that higher values represented more relational uncertainty. *Self uncertainty* contained six unidimensional items (e.g., whether or not you are ready to commit to your partner; $\chi^2/df = 2.79$, CFI = 0.95, RMSEA = 0.09). *Partner uncertainty* involved five items (e.g., how important the relationship is to your partner; $\chi^2/df = 2.09$, CFI = 0.94, RMSEA = 0.07). *Relationship uncertainty* included six items (e.g., the boundaries for appropriate and/or inappropriate behavior in the relationship; $\chi^2/df = 2.92$, CFI = 0.92, RMSEA = 0.09).

Interference from partners

Solomon and Knobloch's (2001) scale measured interference from partners. Participants reported their agreement with five statements describing their partner ($1 = strongly\ disagree$, $6 = strongly\ agree$; e.g., this person interferes with whether I achieve the everyday goals I set for myself; $\chi^2/df = 2.09$, CFI = 0.94, RMSEA = 0.07).

Intensity of hurt

Vangelisti and Young's (2000) scale assessed the intensity of hurt. Participants responded to three items on 7-point scales where higher values corresponded with more hurt (e.g., To what extent did this interaction cause you emotional pain? $\chi^2/df = 1.41$, CFI = 0.99, RMSEA = 0.04).

Perceived intentionality of hurtful message

We used Leary et al.'s (1998) scale to measure the perceived intentionality of the hurtful remark. Participants employed a 7-point scale ($1 = not\ at\ all\ true$,

Table 2 Weekly Descriptive Statistics

	Week 1 N = 268			Week 2 N = 249			Week 3 N = 236			Week 4 N = 233			Week 5 N = 234			Week 6 N = 229		
	M	SD	α	M	SD	α	M	SD	α	M	SD	α	M	SD	α	M	SD	α
Self uncertainty	1.89	0.84	.91	1.89	0.97	.94	1.91	1.05	.95	2.01	1.15	.96	1.96	1.13	.96	1.96	1.15	.97
Partner uncertainty	1.93	0.93	.90	2.01	0.99	.93	2.02	1.13	.95	2.03	1.17	.96	1.94	1.17	.96	1.99	1.19	.97
Relationship uncertainty	2.03	0.79	.85	2.03	0.93	.91	2.06	1.02	.92	2.09	1.10	.94	2.02	1.07	.94	2.00	1.04	.93
Interference from partners	2.46	0.94	.83	2.42	1.09	.88	2.38	1.13	.89	2.42	1.18	.92	2.46	1.19	.92	2.40	1.31	.95
Intensity of hurt	3.60	1.17	.96	3.21	1.84	.96	3.25	1.90	.97	3.49	1.85	.97	3.59	1.88	.97	3.45	1.80	.97
Perceived intentionality	2.75	1.29	.71	2.68	1.20	.68	2.89	1.40	.72	3.05	1.39	.68	3.68	1.45	.71	2.97	1.35	.64
Relational damage	1.91	1.16	.86	2.02	1.31	.91	2.13	1.48	.92	2.34	1.54	.92	2.39	1.56	.93	2.27	1.54	.93
Directness of comm about hurt	4.57	1.93	.81	4.15	1.90	.79	4.34	1.81	.76	4.29	1.86	.76	4.26	1.74	.74	4.41	1.76	.72

Note: Cell entries are means, standard deviations, and α reliability scores.

7 = *completely true*) to indicate their agreement with four statements (e.g., I believed my partner was trying to hurt me; $\chi^2/df = 1.93$, CFI = 0.97, RMSEA = 0.06).

Damage to the relationship

Items assessing relational damage were derived from Leary et al.'s (1998) consequences of hurt scale, including perceptions that the hurtful episode weakened the relationship, decreased trust in the partner, and decreased liking for the partner. Participants used a 7-point scale (1 = *not at all true, 7 = completely true*) to record their agreement with four statements (e.g., the hurtful episode weakened my relationship permanently; $\chi^2/df = 1.62$, CFI = 0.98, RMSEA = 0.05).

Directness of communication about hurt

A measure of communicative directness was composed specifically for this study. Three items comprised the scale (1 = *not at all true, 7 = completely true*): (a) I explicitly told my partner that he/she hurt my feelings; (b) I didn't openly admit to my partner that he/she hurt me (reverse-scored); and (c) I confronted my partner directly about the fact that he/she hurt me ($\chi^2/df = 2.29$, CFI = 0.97, RMSEA = 0.08).

Results

Preliminary analyses

As a starting point, we examined data from Week 1 to evaluate sex differences in our variables. Paired-sample *t*-tests revealed only one significant difference: Women ($M = 4.98$, $SD = 1.65$) reported using more directness than men ($M = 4.14$, $SD = 1.51$), $t(240) = 3.48$, $p < .001$. Thus, we covaried participants' sex in our analyses predicting communicative directness.

Next, we assessed the bivariate correlations among the Week 1 variables (Table 3). Results indicated that the three sources of relational uncertainty were positively correlated with interference from partners and relational damage; in addition, partner and relationship uncertainty were negatively associated with the directness of communication about hurt. Interference from partners was positively associated with the intensity of hurt, intentionality of hurt, and relational damage. The intensity of hurt was positively correlated with the intentionality of hurt, relational damage, and the directness of communication about hurt. Finally, the intentionality of hurt was positively correlated with relational damage.

We also calculated the intraclass correlation (ρ) for the dependent variables to identify their primary source of variability. When variance is mostly within persons, the intraclass correlation is close to zero, but when variance is primarily between persons and groups, it is close to one (Kreft & De Leeuw, 1998). The intraclass correlations for the intensity of hurt ($\rho = .32$), perceived intentionality of hurt ($\rho = .20$), relational damage ($\rho = .17$), and directness of communication about hurt ($\rho = .24$) revealed that most of the variability was within persons.

Table 3 Bivariate Correlations Among Week 1 Variables

	1	2	3	4	5	6	7
1. Self uncertainty							
2. Partner uncertainty	.50***						
3. Relationship uncertainty	.72***	.67***					
4. A partner's interference	.17**	.12*	.16*				
5. Intensity of hurt	−.09	−.07	−.04	.16*			
6. Perceived intentionality	.10	.08	.11	.22***	.45***		
7. Relational damage	.28***	.29***	.35***	.28***	.34***	.52***	
8. Directness of communication about hurt	−.11	−.14*	−.22***	−.06	.35***	.11	.04

$^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

Substantive analyses

We used hierarchical linear modeling (HLM) 6.0 software to construct multilevel models to accommodate the nonindependence in our data (Bryk & Raudenbush, 1992). Repeated measures across weeks were nested within the individual and individuals were nested within their dyad. Relationship change was represented through a three-level model using maximum likelihood (ML) estimation with time-varying predictors at Level 1, characteristics of the individual at Level 2, and dyadic variables at Level 3. We report the intercept, slopes, and residuals for each model. The covariates included on the intercept document between-person effects on the dependent variable, the slopes signify within-person effects on the dependent variable, and the residuals designate the variability left to be explained in the slopes and intercepts. Because our logic focuses on how fluctuations in individuals' perceptions of relationship characteristics correspond with their appraisals of and communication about hurtful messages, the slopes constitute the test of our hypotheses.

Model 1: Relational uncertainty and partner interference predicting qualities of hurt

We hypothesized that relational uncertainty and interference from partners are positively associated with people's reports of the intensity of hurt (H1a, H1b), the intentionality of hurt (H2a, H2b), and the damage to the relationship (H3a, H3b). To evaluate these predictions, we constructed a series of multilevel models in which intensity of hurt, intentionality of hurt, and relational damage were the dependent variables. Self uncertainty, partner uncertainty, relationship uncertainty, and interference from partners were entered as Level 1 predictors in separate models to

avoid multicollinearity. All Level 1 predictors were group mean centered to evaluate how deviations around the individual's mean corresponded with the dependent variable. Week 1 relationship status was included as a Level 2 covariate on the intercept. We also added the within-person mean for each source of relational uncertainty or interference from partners as Level 2 covariates; these covariates parse the between-person effect reported in the intercept from the within-person effect reported in the slopes. Week 1 relationship status was grand mean centered; the within-person means were uncentered. The intercepts and slopes for the Level 1 predictors were estimated as random effects. (See Appendix for the Model 1 equations.)

Findings for relational uncertainty appear in Table 4. The top panel of the table summarizes the extent to which the Level 2 covariates modified the value of the intercept (i.e., the test of between-persons effects). With the exception of self uncertainty in the model predicting intensity of hurt, an individual's mean for each source of relational uncertainty increased the value of the intercept, such that people who reported more relational uncertainty evaluated the hurtful episode as more intense, more intentional, and more damaging to the relationship. The middle panel of the table summarizes the slopes for the models (i.e., the test of within-person variation across weeks). Results indicated that self uncertainty, partner uncertainty, and relationship uncertainty were positively associated with each dependent variable, such that during weeks when individuals experienced above average amounts of relational uncertainty, they reported that hurt was more intense, intentional, and damaging to the relationship. Thus, H1a, H2a, and H3a were supported. The bottom panel of the table summarizes the residuals for the model (i.e., the test of whether significant variability is left to be explained in the intercept or in the slopes). Findings revealed that significant variability remained to be explained in all of the slopes and Level 2 intercepts and in most of the Level 3 intercepts.

Results for interference from partners are reported in Table 5. For the intercept, an individual's mean for interference from partners was positively associated with each dependent variable, such that participants who perceived heightened partner interference also reported that hurt was more intense, intentional, and damaging to the relationship. The slopes showed that interference from partners shared positive associations with the dependent variables, such that during weeks when individuals experienced above average levels of interference from partners, they also perceived hurtful messages as more intense, intentional, and damaging to the relationship. Hence, H1b, H2b, and H3b were supported. The residuals revealed that there was significant variability left to be explained in all of the intercepts and slopes, except for the Level 3 intercept for the model predicting intensity of hurt.

Model 2: Qualities of hurtful episodes predicting the directness of communication about hurt

Next, we hypothesized that the directness of communication about hurt shares positive associations with the intensity of hurt (H4), the intentionality of hurt (H5),

Table 4 Relational Uncertainty Predicting Intensity of Hurt, Intentionality of Hurt, and Relational Damage

	Intensity of Hurt			Intentionality of Hurt			Relational Damage		
	Self Uncertainty	Partner Uncertainty	Relationship Uncertainty	Self Uncertainty	Partner Uncertainty	Relationship Uncertainty	Self Uncertainty	Partner Uncertainty	Relationship Uncertainty
Intercept	3.21***	3.00***	2.78***	2.36***	2.33***	2.11***	.91***	1.21***	.72***
Relationship status	.05	.13	.22	.03	.05	.11	−.00	−.11	.07
Self uncertainty mean	.15			.28***			.64***		
Partner uncertainty mean		.25*			.29***			.47***	
Relationship uncertainty mean			.35**			.38***			.70***
Slopes									
Self uncertainty	.36***			.32***			.55***		
Partner uncertainty		.40***			.41***			.49***	
Relationship uncertainty			.48***			.39***			.58***
Residuals									
Intercept (2)	1.16***	1.13***	1.17***	.37***	.37***	.36***	.30***	.40***	.42***
Self uncertainty	.29***			.10*			.28***		
Partner uncertainty		.11*			.10*			.32***	
Relationship uncertainty			.16*			.11**			.27***
Intercept (3)	.06	.06	.00	.22***	.22***	.22***	.15***	.13**	.14**

Note: Cell entries in the intercept category are the between-person change in the intercept attributable to relationship status or the within-person mean for self uncertainty, partner uncertainty, or relationship uncertainty. Cell entries in the slopes category are the within-person slope over the course of the study. Cell entries in the residuals category are τ and represent the remaining unexplained variation in the intercept or in the slopes. Self uncertainty, partner uncertainty, and relationship uncertainty were evaluated in separate models; their effects appear on the diagonal.

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

Table 5 Interference from Partners Predicting Intensity of Hurt, Intentionality of Hurt, and Relational Damage

	Intensity of Hurt	Intentionality of Hurt	Relational Damage
Intercept	2.75***	2.26***	1.43***
Baseline relationship status	−.09	−.11	−.51***
Interference from partners mean	.31***	.27***	.30***
Slope			
Interference from partners	.20*	.24***	.19***
Residuals			
Intercept (2)	1.10***	.40***	.33***
Interference from partners	.20*	.15***	.19*
Intercept (3)	.05	.20***	.24***

Note: Cell entries in the intercept category are the between-person change in the intercept attributable to relationship status or the within-person mean for interference from partners. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the residuals category are τ and represent the remaining unexplained variation in the intercept or in the slopes.
*$p < .05$. **$p < .01$. ***$p < .001$.

and relational damage (H6). To test these predictions, we evaluated multilevel models in which the directness of communication about hurt was the dependent variable. Intensity of hurt, intentionality of hurt, and relational damage were entered as Level 1 predictors in separate models. Level 1 predictors were group mean centered. We included respondent sex, baseline relationship status, and the within-person mean for each predictor as Level 2 covariates on the intercept. Baseline relationship status was grand mean centered; the within-person means and respondent sex were uncentered. The intercepts and slopes for the Level 1 predictors were estimated as random effects. (See Appendix for the Model 2 equations.)

As summarized in the top panel of Table 6, baseline relationship status and respondent sex increased the value of the intercept (i.e., more direct communication was reported by individuals who started the study at higher levels of relationship status and by females). The within-person means for the predictors also increased the value of the intercept (i.e., more direct communication was reported by individuals who experienced increased intensity of hurt, intentionality of hurt, and relational damage). Turning to the slopes, the intensity of hurt, the intentionality of hurt, and relational damage were positively associated with the directness of communication about hurt. In other words, during weeks when individuals experienced hurt that was more intense, more intentional, and more damaging than their own mean levels of these variables, they reported more communicative directness. Thus, the data were consistent with H4, H5, and H6. Residuals showed significant variability remained in the Level 2 intercept for all models and in the slopes for the perceived intentionality of hurt and relational damage.

Table 6 Characteristics of Hurt Predicting Communicative Directness

	Intensity of Hurt	Intentionality of Hurt	Relational Damage
Intercept	3.25***	3.33***	3.55***
Baseline relationship status	.56***	.62***	.68***
Respondent sex	.66***	.80***	.78***
Intensity of hurt mean	.22***		
Intentionality of hurt mean		.21**	
Relational damage mean			.19*
Slopes			
Intensity of hurt	.41***		
Intentionality of hurt		.34***	
Relational damage			.30***
Residuals			
Intercept (2)	.67***	.72***	.69***
Intensity of hurt	.01		
Intentionality of hurt		.14**	
Relational damage			.06*
Intercept (3)	.03	.00	.03

Note: Cell entries in the intercept category represent the between-person change in the intercept attributable to relationship status or the within-person mean for intensity of hurt, intentionality of hurt, or relational damage. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the residuals category are τ and represent the remaining unexplained variation in the intercept or in the slopes.
*$p < .05$. **$p < .01$. ***$p < .001$.

Model 3: Relationship Characteristics Predicting the Directness of Communication About Hurt

Our final set of hypotheses proposed that relational uncertainty is negatively associated with the directness of communication about hurt (H7) and that interference from partners is positively associated with the directness of communication about hurt (H8). To test these hypotheses, we examined multilevel models in which the directness of communication about hurt was the dependent variable. We included relational uncertainty and interference from partners as Level 1 predictors in separate models to avoid multicollinearity. We also included the intensity of hurt as a Level 1 covariate. All Level 1 predictors were group mean centered. Level 2 covariates entered on the intercept included baseline relationship status, respondent sex, and the within-person mean for each predictor. Baseline relationship status was grand mean centered; respondent sex and the within-person means were uncentered. The intercepts and slopes for the Level 1 predictors were estimated as random effects. (See Appendix for the Model 3 equations.)

Results for the intercept revealed that baseline relationship status (except in the model for relationship uncertainty) and respondent sex increased the value of the

Table 7 Relational Uncertainty and a Partner's Interference Predicting Communicative Directness

	Self Uncertainty	Partner Uncertainty	Relationship Uncertainty	A Partner's Interference
Intercept	3.59***	3.57***	4.0***	3.58***
Baseline relationship status	.41**	.40**	.21	.57***
Respondent sex	.65***	.63***	.57***	.61***
Intensity of hurt mean	.23***	.24***	.27***	.25***
Self uncertainty mean	−.19*			
Partner uncertainty mean		−.18		
Relationship uncertainty mean			−.41***	
Interference from partners mean				−.16*
Slopes				
Intensity of hurt	.42***	.42***	.42***	.41***
Self uncertainty	−.06			
Partner uncertainty		−.03		
Relationship uncertainty			−.02	
Interference from partners				.12
Residuals				
Intercept (2)	.66***	.68***	.62***	.64***
Intensity of hurt	.01	.02	.01	.01
Self uncertainty	.01			
Partner uncertainty		.05		
Relationship uncertainty			.01	
Interference from partners				.16
Intercept (3)	.02	.00	.00	.05

Note: Cell entries in the intercept category are the between-person change in the intercept attributable to relationship status, respondent sex, or the within-person mean for intensity of hurt, self uncertainty, partner uncertainty, relationship uncertainty, or interference from partners. The cell entries in the slopes category represent the within-person slope over the course of the study. The cell entries in the residuals category are τ and represent the remaining unexplained variation in the intercept or in the slopes.
*$p < .05$. **$p < .01$. ***$p < .001$.

intercept, such that more directness was reported by females and by individuals who started the study at higher levels of relationship status (Table 7). The within-person mean for the intensity of hurt increased the value of the intercept, such that individuals who experienced more intense hurt reported more directness about hurt. Moreover, the within-person means for each of the substantive predictors (except partner uncertainty) decreased the value of the intercept, such that individuals with heightened levels of relational uncertainty and interference from partners were less direct. With regard to the slopes, however, relational uncertainty and interference from partners were not associated with communicative directness. Thus, H7 and H8

were not supported. Residuals indicated significant variability left to be explained in the Level 2 intercept.

Discussion

The goals of this study were to identify relationship characteristics that create a context in which people are more sensitive to hurt and, in turn, to evaluate the features of hurtful episodes and relationships that predict the directness of communication about hurt. We used the relational turbulence model as a framework for identifying relationship characteristics that may be influential in this context. Our findings suggest that the mechanisms identified in the relational turbulence model correspond with the experience of hurt in romantic relationships. Moreover, our results imply that features of the hurtful episode itself, rather than characteristics of relationships, predict the directness of communication about hurt.

Applying the relational turbulence model to experiences of hurt

We sought to identify relationship characteristics that may escalate the experience of hurt. Our results indicated that relational uncertainty and interference from partners are positively associated with the intensity of hurt (H1), the intentionality of the hurtful message (H2), and the damage caused to the relationship (H3). Understanding how relational uncertainty and interference from partners correspond with people's reactivity to hurtful episodes marks an important application of the relational turbulence model to a new context.

Although the relational turbulence model focuses on how characteristics of the relationship may foster reactivity (Knobloch, 2007; Theiss & Solomon, 2006b), we see the potential for bidirectional effects that hurtful episodes may have on characteristics of the relationship. For example, when a partner says something hurtful, recipients may experience relational uncertainty about the viability of the courtship. Similarly, a partner's hurtful remark may illuminate the ways he or she interferes with the victim's goals. We look forward to future research that untangles the direction of the association between relationship characteristics and the experience of hurt.

Despite previous evidence that hurt is a frequent occurrence in relationships (Leary & Springer, 2001), some participants in our study did not report a hurtful event during every week of the study. Perhaps hurtful episodes do not occur as frequently as once a week, or perhaps minor hurts do not percolate in people's memory. Regardless, our findings do not speak to whether relational uncertainty and interference from partners increase the frequency of hurtful events. Rather, our results suggest that when people are hurt in courtships characterized by relational uncertainty and partner interference, their hurt is more severe, intense, and damaging.

In other words, our study documented emotional, cognitive, and communicative reactivity to hurt rather than an increase in the frequency of hurtful events.

Predictors of the directness of communication about hurt
The second goal of this study was to identify features of hurtful episodes and characteristics of relationships that predict the directness of communication about hurt. We chose to examine communicative directness because it is a primary dimension underlying responses to hurt (e.g., Bachman & Guerrero, 2006; Vangelisti & Crumley, 1998). Our results indicated that features of the hurtful episode, such as the intensity of hurt (H4), the intentionality of hurt (H5), and relational damage (H6), corresponded with more direct communication about the event. On the other hand, features of the relationship, such as relational uncertainty (H7) and interference from partners (H8), were not associated with directness.

A tangential but interesting finding was that the within-person effects of episodic features on directness were larger than the between-person effects. In other words, people's week-by-week fluctuations in reactivity to hurt may be more substantial predictors of directness than individual differences in sensitivity. One important caveat is that our sample reported low levels of relational uncertainty and partner interference. Hence, our findings imply only that people involved in courtships relatively devoid of relational uncertainty and interference from partners have the latitude to confront severe hurts directly. In contrast, individuals involved in relatively uncertain and interference-laden courtships may not have the security necessary to talk openly about their feelings. Additional research is necessary to examine whether our results extend to courtships marked by more notable degrees of relational uncertainty and interference from partners.

We identify two possible explanations for the lack of support for relational uncertainty and partner interference as predictors of communicative directness. First, the mean levels of communicative directness were quite high in this sample, nearing the upper bound for the scale. Thus, we wonder if the null finding was attributable to a ceiling effect in the data. A second possibility is that the associations were obscured by more proximal predictors stemming from the hurtful episode itself. If relational uncertainty and interference from partners correspond with more extreme experiences of hurt, and more severe hurt calls for more direct communication, then the relationship characteristics that promote directness or indirectness may be overshadowed by the more urgent need to address and resolve the hurt. Overall, our findings suggest that directness is more strongly tied to features of the situation than to features of the relationship, which is consistent with previous research that has failed to link relationship characteristics with communicative responses to hurt (e.g., Young, 2004).

Strengths, limitations, and future directions
One strength of this study is the use of multiwave dyadic data, which makes a methodological contribution to the literature on hurtful messages. Although

longitudinal data are becoming increasingly more prominent, most longitudinal research designs focus on marital relationships rather than dating relationships (e.g., Huston & Vangelisti, 1991). Another strength of this study is the application of the relational turbulence model to the experience of hurt. By drawing on the relational turbulence model, this study identified relationship characteristics that have not been previously considered as predictors of the experience of hurt.

Despite the strengths of the study, limitations exist as well. First, 6 weeks is a relatively short time period in the span of an ongoing romantic relationship. Our decision to limit the study to 6 weeks was guided by previous longitudinal studies that observed significant changes in relationships over a 6-week period (e.g., Theiss & Solomon, 2006a, 2008; Van Lear, 1987), but we hope that future research will be able to document trends over a longer period of time. In addition, our study relied on a convenience sample of college undergraduates. Further investigations are needed to determine if our findings are generalizable to other populations. Finally, we employed self-report measures to assess the directness of communication about hurt, which may not provide an accurate representation of actual directness. Additional work that gathered observational data to assess directness and other features of communication about hurt would offer an important complement to our findings.

Appendix

In the models that follow, the subscript i refers to the time-varying repeated measurements across weeks (Level 1), the subscript j refers to characteristics of the individual that were not measured over time (Level 2), and the subscript k refers to characteristics of the dyad that were measured only during the baseline week of the study (Level 3).

Model 1: Relational uncertainty and partner interference predicting features of hurtful episodes

The following equations represent the model when self uncertainty was a predictor. Identical models were constructed for partner uncertainty, relationship uncertainty, and interference from partners.

Level 1 equation:

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}(\text{self uncertainty}_{ijk} - self\ uncertainty._{jk}) + r_{ijk}$$

Level 2 equations:

$$\pi_{0jk} = \beta_{00} + \beta_{01}(\text{Relationship Status}_{ijk} - RELATIONSHIP\ STATUS\ldots)$$
$$+ \beta_{02}(self\ uncertainty._{jk}) + u_{0j}$$
$$\pi_{1jk} = \beta_{10} + u_{1j}$$

Level 3 equations:

$$\beta_{00} = \gamma_{000} + u_{00}$$
$$\beta_{01} = \gamma_{010}$$
$$\beta_{02} = \gamma_{020}$$
$$\beta_{10} = \gamma_{100}.$$

Model 2: Features of hurtful episodes predicting the directness of communication about hurt

The following equations represent the model when the intensity of hurt was a predictor. Identical models were constructed for the intentionality of hurt and relational damage.

Level 1 equation:

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}(\text{intensity of hurt}_{ijk} - intensity\ of\ hurt._{jk}) + r_{ijk}$$

Level 2 equations:

$$\pi_{0jk} = \beta_{00} + \beta_{01}(\text{Relationship Status}_{ijk} - RELATIONSHIP\ STATUS\dots)$$
$$+ \beta_{02}(\text{respondent sex}_{ijk}) + \beta_{03}(intensity\ of\ hurt._{jk}) + u_{0j}$$
$$\pi_{1jk} = \beta_{10} + u_{1j}$$

Level 3 equations:

$$\beta_{00} = \gamma_{000} + u_{00}$$
$$\beta_{01} = \gamma_{010}$$
$$\beta_{02} = \gamma_{020}$$
$$\beta_{03} = \gamma_{030}$$
$$\beta_{10} = \gamma_{100}.$$

Model 3: Relationship characteristics predicting the directness of communication about hurt

The following equations represent the model when self uncertainty was a predictor. Identical models were constructed for partner uncertainty, relationship uncertainty, and interference from partners.

Level 1 equation:

$$Y_{ijk} = \pi_{0jk} + \pi_{1jk}(\text{intensity of hurt}_{ijk} - intensity\ of\ hurt._{jk})$$
$$+ \pi_{2jk}(\text{self uncertainty}_{ijk} - self\ uncertainty._{jk}) + r_{ijk}$$

Level 2 equations:

$$\pi_{0jk} = \beta_{00} + \beta_{01}(\text{Relationship Status}_{ijk} - \textit{RELATIONSHIP STATUS}\ldots)$$
$$+ \beta_{02}(\text{respondent sex}_{ijk}) + \beta_{03}(\textit{intensity of hurt.}_{jk})$$
$$+ \beta_{03}(\textit{self uncertainty.}_{jk}) + u_{0j}$$
$$\pi_{1jk} = \beta_{10} + u_{1j}$$
$$\pi_{2jk} = \beta_{20} + u_{2j}$$

Level 3 equations:

$$\beta_{00} = \gamma_{000} + u_{00}$$
$$\beta_{01} = \gamma_{010}$$
$$\beta_{02} = \gamma_{020}$$
$$\beta_{03} = \gamma_{030}$$
$$\beta_{04} = \gamma_{040}$$
$$\beta_{10} = \gamma_{100}$$
$$\beta_{20} = \gamma_{200}.$$

Note: Centered variables are indicated in parentheses with the group mean or the grand mean subtracted from the observed variable. A group mean is denoted as lowercase and italicized (e.g., *intensity of hurt.$_{jk}$*) and a grand mean is denoted as uppercase and italicized (*RELATIONSHIP STATUS...*).

Acknowledgments

Notes

1   Individuals were recruited for the study if they had a romantic interest in a partner who was willing to complete the study with them. We included in the analyses individuals who characterized the status of their relationship as friendship because at least one partner indicated romantic interest. This strategy is consistent with other tests of the relational turbulence model that solicited participants across the spectrum of relationship development from casual dating to serious commitment (e.g., Solomon & Knobloch, 2004; Solomon & Theiss, 2008).

2   Across all waves of the study, participants devoted approximately 19.15 minutes ($SD = 14.25$ minutes, $Mdn = 17$ minutes) and approximately 2.30 sessions ($SD = 1.33$ sessions, $Mdn = 2$ sessions) to completing the questionnaires.

3   Of the 135 couples who began the study, 13 couples did not finish it (9.6% attrition). Four of those couples broke up during the course of the study. The other nine couples were eliminated after one or both participants failed to provide data for three consecutive waves of the study. When we inquired about people's reasons for not

continuing the study, the individuals reported various reasons for dropping out (i.e., illness, travel, not enough time to complete the questionnaires). Multilevel modeling is able to accommodate missing data, so we included all participants who provided data for Week 1.

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