


The role of identity uncertainty in predicting relational turbulence and perceived partner communication for women coping with infertility

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Abstract

Infertility can change the way people see themselves and their relational roles. This study examined how changes to identity following reproductive hardship are associated with identity uncertainty and relationship outcomes. Drawing on relational turbulence theory, we position identity uncertainty as an antecedent condition for relational uncertainty and interdependence processes in the context of infertility and examine these relationship mechanisms as predictors of relational turbulence and perceptions of partner communication during this relationship transition. We surveyed 152 women who have been unsuccessful at conceiving for at least 12 months about their identity and perceptions of their relationship. Data were analyzed using structural equation modeling. Consistent with hypotheses, identity change was positively associated with identity uncertainty, which, in turn, predicted increased relational uncertainty. Relational turbulence was positively predicted by relational uncertainty, but not partner interference or facilitation. Perceptions of a partner's communication were predicted by relational turbulence and partner facilitation. The theoretical and practical implications of the findings are discussed.

Keywords

Identity, identity uncertainty, infertility, partner communication, relational turbulence, relational uncertainty

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The Centers for Disease Control (CDC) defines infertility as the inability to conceive naturally after 1 year or longer of unprotected sex and reports that approximately 12% of women in their reproductive years will experience infertility (CDC, 2017). Infertility can introduce a number of personal and relational challenges, such as depression, isolation, diminished self-esteem, and relationship distress (e.g., Leiblum & Greenfeld, 1997). In addition, infertility increases people's uncertainty about their attractiveness as a relationship partner, their roles within the relationship, the future of their marriage, and expectations for family (Steuber & Solomon, 2008). Infertility can also be a source of stress, conflict, and marital discord, contributing to decreased well-being and marital quality (Pasch & Sullivan, 2017). Thus, couples experiencing infertility face a variety of personal and relational tensions.

Relational turbulence theory (Solomon et al., 2016) provides a framework for examining how infertility may contribute to upheaval within relationships. The theory suggests that transitions are ripe for increased relational uncertainty and disrupted patterns of interdependence due to changing roles and evolving interpersonal routines. Infertility is a relationship transition marked by various stages of hope, denial, disappointment, treatment, and eventual acceptance (e.g., Loftus & Andriot, 2012). Moreover, infertility is considered a major nonevent transition, or a transition in which an expected life event does not occur, which requires women to reappraise their identity and relational roles (Daniluk & Trench, 2007). Although tests of relational turbulence theory have typically focused on the outcomes of relational uncertainty and disrupted interdependence, fewer studies have considered the features of relationship transitions that give rise to such conditions (e.g., Brisini & Solomon, 2018; Knobloch & Theiss, 2011). This study adds to the literature on close relationships by considering how infertility prompts questions about individual and relational identities, which heighten relational uncertainty, shape patterns of interdependence, and contribute to conditions of relational turbulence. Accordingly, this paper applies relational turbulence theory to identify the antecedent conditions that prompt volatile relationship characteristics during infertility, as well as the outcomes of those circumstances.

The goals of this study are two-fold. First, this study conceptualizes identity uncertainty as the ambiguity experienced when people encounter changes to their personal or relational identities. Women coping with infertility may encounter questions about their femininity, their suitability as a partner, or their view of family (e.g., Corbett, 2018). We focus on identity uncertainty as a feature of the infertility experience that can raise questions about relational involvement and reshape patterns of interdependence. Second, this study examines how relationship conditions during infertility contribute to relational turbulence. We focus on the relationship mechanisms in the theory as predictors of relational turbulence and the perceived quality of a partner's communication during conversations about infertility. Theoretically, this study extends relational turbulence theory by highlighting identity uncertainty as antecedent to changes in relationship qualities during infertility and positioning relational turbulence as a mediator of associations between relationship mechanisms and perceptions of communication. Pragmatically, this research helps women navigating infertility anticipate threats to relationship stability and recognize symptoms of turbulence. In the following sections, we

define identity uncertainty and explain how it contributes to relationship conditions conducive to turbulence.

Infertility and identity

Identity formation is an ongoing, dynamic process during which individuals orient themselves with others and the surrounding world (e.g., [Berzonsky, 2008](#)). Through daily interactions, relationships, and roles, individuals manifest multiple identities that each come with a unique set of behavioral expectations ([Loftus & Namaste, 2011](#)). For many women, entering into marriage and choosing to start a family introduces new expectations and relational roles that shape their identity and sense of self. *Identity change* occurs when women perceive that their desired sense of self must evolve to accommodate new realities. The experience of infertility can contribute to identity change because it disrupts desired roles, alters the way women interact with their partners, and shifts their position in society (e.g., [Peterson et al., 2006](#); [Steuber & Solomon, 2008](#)). Although men and women are both affected by infertility, women are especially likely to perceive it as a strong threat to their gender identity and sense of self ([Andrews et al., 1992](#)). When a specific role or identity is particularly salient, such as being a mother, barriers to the attainment of that identity can result in a “spoiled identity” that can be difficult to manage ([Greil et al., 2010](#); [Loftus & Namaste, 2011](#)). In fact, women experience more distress and less well-being when they perceive their infertility as central to their identity ([Neter & Goren, 2017](#)). Women who are confronted with infertility must rethink core aspects of their identity and adopt new ways of understanding their sense of self (e.g., [Peterson et al., 2006](#)).

When people experience identity change it prompts questions about how to define the self, perform new roles, and adapt one’s identity to new circumstances. *Identity uncertainty* refers to ambiguity about one’s sense of self and relational roles. People are motivated to reduce uncertainty about the perceptions, attitudes, and behaviors that reflect their self ([Hogg, 2007](#)), which requires individuals to adjust to their surroundings and adopt the behavioral characteristics of others who are similar. Many cultures assume that a significant part of women’s identity centers around their roles as mothers, nurturers, and caregivers (e.g., [Peterson & Engwall, 2013](#)); thus, women who do not perform these roles, by choice or circumstance, need to adapt their identity to reconcile deviations from social norms ([Mueller & Yoder, 1997](#)). Changing or altering one’s identity in this way can prompt questions about the desirability, acceptability, and capability of performing a new and potentially non-normative sense of self.

Given that many of the changes to identity that accompany infertility stem from deviations to women’s gendered and relational norms (e.g., [Andrews et al., 1992](#)), we examined four interrelated components of identity uncertainty that are likely salient during this transition, including uncertainty about one’s gender identity, sexual identity, partner identity, and role identity. These four interrelated components of identity uncertainty reflect an overarching sense of uncertainty about one’s identity that center around core aspects of the self. The uncertainty that women feel about their identity is likely dependent on the extent to which their current reality deviates from their expected or desired aspects of the self ([Hogg, 2007](#)). Identity uncertainty is heightened when

infertility prompts women to adopt a major change in their understanding of the self, but attenuated when women's core identity does not require as much adjustment to integrate new roles and traits. Thus, we expect that identity changes related to infertility are associated with increased identity uncertainty.

H1: Identity change is positively associated with identity uncertainty for women experiencing infertility.

Identity uncertainty as a predictor of the mechanisms of relational turbulence

In addition to understanding the sources of identity uncertainty during infertility, we are also interested in the ways that identity uncertainty can shape people's relationships. Relational turbulence theory highlights relational uncertainty and interruptions to interdependence as two qualities of close relationships that are heightened during transitions and give rise to polarized reactions to interpersonal events (Solomon et al., 2016). *Relational uncertainty* refers to the lack of confidence that people have in their perceptions of a relationship, which encompasses doubts about one's own involvement (*self uncertainty*), a partner's involvement (*partner uncertainty*), and the relationship as a whole (*relationship uncertainty*). Interruptions to interdependence processes can take the form of constructive or disruptive influence from a romantic partner (Solomon et al., 2016). *Interference from partners* reflects influence from a partner that is disruptive to personal goals and routines, whereas *facilitation from partners* reflects a partner's influence that assists the attainment of personal goals and smooths interdependence.

Although most applications of relational turbulence theory focus on the outcomes of relational uncertainty and interdependence patterns (e.g., Knobloch & Theiss, 2010), less is known about how these relationship qualities themselves are shaped by features of transitions. Research indicates that the presence of depressive symptoms during a transition can heighten relational uncertainty and perceptions of interference from a partner (e.g., Knobloch & Theiss, 2011). In addition, transition processing communication attenuates relational uncertainty and partner interference, while promoting partner facilitation (e.g., Brisini & Solomon, 2018). To this list, we add identity uncertainty as a variable that is likely to shape relationship characteristics during infertility. Romantic relationships are an expansion of the self (Aron & Aron, 1986); thus, engaging in close relationships requires partners to draw upon their stable sense of self as a foundation for establishing intimacy. The self is shaped by relationship experiences and has agency to influence relational dynamics in ways that achieve desired goals (Carmichael et al., 2007). When individuals are uncertain about their identity, they lack the necessary foundation to guide their expectations for relational involvement. Thus, when individuals are unsure about their sense of self, they may struggle to identify what they want or need from a relationship and how to achieve desired goals.

Identity uncertainty related to infertility should increase relational uncertainty due to the types of questions about the self that tend to arise under these circumstances. The experience of infertility confronts women with ambiguity about their identity as a woman

and a partner (Greil et al., 2010). Research suggests that infertility can be linked to issues with low self-esteem, challenged identity, and role-loss (Cousineau & Domar, 2007). Although the uncertainty surrounding infertility could create opportunities to strengthen relational connections and explore previously unimagined possibilities (Steuber & Solomon, 2008), the identity uncertainty that arises in this context indexes questions about gender roles, sexual desirability, and relational roles that are likely to resonate with broader sources of uncertainty about the relationship. The questions about identity that women face during infertility, such as their identification with gender norms and their role as a partner, are likely to spill over into concerns about their own and their partner's relationship involvement. Thus, we position identity uncertainty as an antecedent condition that prompts increased relational uncertainty during infertility.

H2: Identity uncertainty is positively associated with relational uncertainty for women experiencing infertility.

Interdependence processes are also shaped by identity uncertainty. Because interdependence requires partners to coordinate their goals, routines, and behaviors, it can be difficult for individuals to align their actions with a partner when their own sense of self and personal goals are unclear (Solomon et al., 2016). Research indicates that women who struggle to re-engage with personal goals following the experience of infertility tend to experience distress due to feelings of emptiness and lack of purpose (Neter & Goren, 2017). Moreover, women who experience depression during the transition to motherhood tend to have increased motivation for self-centered goals and decreased motivation for relational and family goals (Salmela-Aro et al., 2001). To the extent that women with identity uncertainty feel unmotivated and disengaged from personal and relational goals, they may be more likely to interpret their partner's influence as disruptive than facilitative because they lack a clear sense of their own priorities from which to anchor their perceptions. Along these lines, depressive symptoms, which shares overlap with the experience of identity uncertainty, are positively associated with perceptions of partner interference (Knobloch & Theiss, 2011). In contrast, women with limited identity uncertainty may perceive their partner as more facilitative than disruptive because their stable and integrated sense of self makes it easier to coordinate actions with a partner to achieve clear and visible goals. Couples who experience a major life event report increased partner facilitation when they engage in transition processing communication that clarifies ambiguity about the situation (Brisini & Solomon, 2020). Thus, we anticipate that identity uncertainty is positively associated with partner interference and negatively associated with partner facilitation.

H3: Identity uncertainty is positively associated with perceptions of interference from a partner for women experiencing infertility.

H4: Identity uncertainty is negatively associated with perceptions of facilitation from a partner for women experiencing infertility.

Relationship characteristics that predict turbulence and polarized interactions

Relational turbulence theory argues that relational uncertainty and influence from a partner polarize people's reactions to interpersonal episodes, which coalesce over time into a climate of relational turbulence (Solomon et al., 2016). Relational uncertainty contributes to relational turbulence because it tends to bias people's perceptions of a partner's communication. Under conditions of relational uncertainty, people lack the information and insight necessary to make sense of their interpersonal experiences. Consequently, individuals who have relational uncertainty struggle to interpret their partner's messages and tend to arrive at more pessimistic judgments of their partner and the relationship (Knobloch & Satterlee, 2009). Relational uncertainty is associated with perceptions of partners as less responsive (e.g., Theiss & Nagy, 2013) and more intentionally hurtful (e.g., Theiss et al., 2009). In addition, individuals who are experiencing relational uncertainty tend to interpret transitions more negatively (e.g., Knobloch & Solomon, 2002) and perceive more upheaval and turbulence (e.g., Knobloch et al., 2018; McLaren et al., 2011). Thus, consistent with theory and empirical evidence we expect that relational uncertainty is positively associated with relational turbulence.

H5: Relational uncertainty is positively associated with perceptions of relational turbulence for women experiencing infertility.

The challenges of negotiating interdependence during relationship transitions also gives rise to a climate of relational turbulence. As a partner's influence contributes to interruptions in goal-directed behavior, individuals tend to become more sensitive to their partner's actions in ways that polarize emotional reactions and undermine communication during interpersonal episodes (Solomon et al., 2016). Notably, interference from a partner contributes to more negative emotions and appraisals of communication (e.g., Knobloch & Theiss, 2010), whereas facilitation from a partner tends to promote more positive emotions and perceptions of interaction (McLaren et al., 2011). Over time, heightened emotional reactivity in response to partner interference contributes to increased perceptions of turbulence, whereas consistent partner facilitation attenuates relational turmoil.

H6: Interference from a partner is positively associated with perceptions of relational turbulence for women coping with infertility.

H7: Facilitation from a partner is negatively associated with perceptions of relational turbulence for women coping with infertility.

Finally, relational turbulence theory asserts that routine relationship processes, such as collaborative planning, relational framing, relationship maintenance, and social support are more difficult under conditions of relational turbulence because it limits people's capacity to coordinate their behavior and think beyond their immediate circumstances (Solomon et al., 2016). In this study, we focus on perceptions of a partner's

communication in conversations about infertility as a relationship outcome that is colored by an underlying climate of turbulence. Specifically, we focus on three dimensions of partner communication that may be relevant to conversations about infertility, which reflect the degree to which the partner's communication is helpful, supportive, and sensitive (Goldsmith et al., 2000). *Helpfulness* refers to the partner's ability to facilitate positive coping through advice, suggestions, and recommendations; *supportiveness* refers to the partner's tendency to reflect encouragement, empathy, and agreement; and *sensitivity* refers to the partner's efforts to be attentive, intuitive, and responsive to one's needs (Goldsmith et al., 2000). These features of interpersonal communication are particularly relevant to conversations about difficult or problematic experiences in relationships, such as conversations about infertility, that call for a delicate and mindful approach. In experiences of infertility, perceiving a partner as helpful, sensitive, and supportive in this delicate experience might be beneficial for improving one's own feelings about the situation.

When relationships are characterized by a state of relational turbulence, partners lack dyadic synchrony and are less prone to abstract thinking (Solomon et al., 2016). Under these circumstances women are less likely to interpret their partner's communication as helpful, supportive, or sensitive during conversations about infertility due a tendency for people to be less attuned with their partner and more attentive to myopic aspects of their conversation (Solomon et al., 2016). Prior tests of this logic have shown that under conditions of relational turbulence people tend to perceive their partner's communication as more hurtful and dominant (McLaren et al., 2011) and less supportive (Knobloch et al., 2018). Along these lines, women who are coping with infertility are likely to appraise their partner's communication as unhelpful, unsupportive, and insensitive when perceptions of relational turbulence are heightened.

H8: Relational turbulence is positively associated with perceptions of partner communication as unhelpful, insensitive, and unsupportive.

Our proposed hypotheses are summarized in Figure 1. As a starting point, we expect that a change to individual identity is positively associated with identity uncertainty (*H1*). In turn, identity uncertainty is expected to be positively associated with relational uncertainty (*H2*) and interference from partners (*H3*), and negatively associated with facilitation from partners (*H4*). Consistent with the logic of relational turbulence theory, we anticipate that relational uncertainty (*H5*) and interference from partners (*H6*) are positively associated with perceptions of relational turbulence, whereas facilitation from partners is negatively associated with relational turbulence (*H7*). Finally, we expect that perceptions of relational turbulence are positively associated with appraisals of communication as unhelpful, unsupportive, and insensitive (*H8*).

Method

We asked women to complete an online survey about their experience of infertility and perceptions of their relationship. We recruited participants by posting announcements to

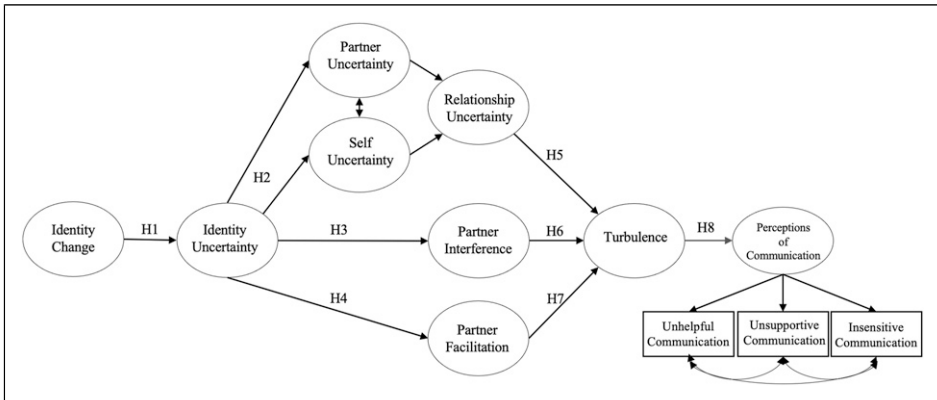


Figure 1. Predicted model.

email lists, online forums, and social media groups dedicated to supporting women with infertility. Women in the study were (a) over the age of 18; (b) in a committed romantic relationship in which they had not conceived a child; (c) trying to conceive unsuccessfully for at least 1 year, sought medical assistance to become pregnant, or medically diagnosed with infertility; (d) fluent in English; and (e) had access to an internet connected device.

Procedures

Participants accessed the survey through a URL provided in a recruitment announcement that directed women to an online survey administered through Qualtrics. The survey began with screening questions designed to eliminate any women who did not meet the eligibility criteria. All eligible participants then received questions to assess demographic information, relationship status, and infertility status, followed by a series of Likert-type scales designed to measure perceptions of identity change, identity uncertainty, relationship characteristics, relational turbulence, and perceptions of partner communication. Participants received a US\$10 gift card to [Amazon.com](https://www.amazon.com) for completing the survey.

Participants

The sample consisted of 152 females. Participants ranged from 20 to 47 years of age ($M = 32.62$ years, $SD = 6.04$ years). The ethnicity of the sample was 64.5% Caucasian, 8.0% Hispanic or Latino, 6.6% African American, 8.7% Asian, 3.6% Native American, 2.2% Indian, and 5.8% Other. Participants had a high school degree or less (4.3%), some college (20.3%), a 2-year Associate’s degree (15.2%), a 4-year bachelor’s degree (33.3%), or an advanced graduate degree (26.8%). In terms of household income, 8.7% reported less than US\$25,000, 36.9% reported US\$25,000 to US\$75,000, 31.2% reported US\$75,000 to US\$125,000, 12.3% reported US\$125,000 to US\$175,000, and 10.9% reported more than US\$175,000.

Participants were monogamously dating (10.1%), engaged (11.6%), married (73.2%), and in a civil union (2.2%). The length of time participants were involved in the relationship ranged from 1.33 to 33.17 years ($M = 7.82$ years). Participants had been trying to conceive from one to 2 years (54.5%), three to 4 years (23.2%), or for more than 5 years (20.6%). Among the participants, 112 had received a diagnosis of infertility for themselves and/or their partner, with 89 (79.4%) diagnosed as female-factor infertility, ten (8.9%) diagnosed as male-factor infertility, and thirteen (11.6%) diagnosed with both male- and female-factor infertility.

Measures

All scales were subject to confirmatory factor analysis to establish internal validity and unidimensionality of each variable (Kline, 2011). We report χ^2 , Confirmatory Fit Index (CFI), and Root Mean Squared Error of Approximation (RMSEA) as fit indices for each variable. Composite variables were calculated using the average of the retained items in each scale.

Identity change. We developed items to measure the extent to which women perceived that their identity changed as a result of infertility on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*). The scale began with nine items, but two items were dropped to achieve satisfactory fit, resulting in a 7-item scale: (a) the challenges we faced trying to conceive have changed the way I see myself, (b) the challenges we faced trying to conceive makes me see myself differently, (c) my view of myself as a partner has changed as a result of our challenges trying to conceive, (d) my view of myself as a parent has changed as a result of our challenges trying to conceive, (e) I feel that our challenges trying to conceive do not change anything about me as a spouse (reversed), (f) I feel that I am becoming a different person as a result of our challenges trying to conceive, and (g) our challenges trying to conceive have not changed my expectations for our future (reversed; $M = 4.36$; $SD = 0.92$; $\alpha = 0.80$; $\chi^2 = 56.03$, $df = 34$, $p = .10$; CFI = .96; RMSEA = .07, 90% CI = [.03, .10]).

Identity uncertainty. We developed items to measure identity uncertainty modeled after Goodwin's (2009) scale that measured identity uncertainty among emerging adults transitioning to college. Respondents were asked to rate their agreement with items on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*). The scale contained four factors: *Gender identity uncertainty* included four items: (a) I am unsure about my level of femininity, (b) I am uncertain about whether or not I fit the mold for a typical female, (c) I sometimes wonder how much I am like other women, and (d) I am not sure if I follow norms of behavior for my gender ($M = 3.32$; $SD = 1.37$; $\alpha = 0.87$; $\chi^2 = 31.91$, $df = 13$, $p = .00$; CFI = .98; RMSEA = .08, 90% CI = [.06, .15]). *Sexual identity uncertainty* contained four items: (a) I sometimes wonder about my attractiveness as a sexual partner, (b) I sometimes wonder how sexually desirable I am, (c) I am not sure that I have the traits of a desirable sexual partner, and (d) I am uncertain as to whether or not my partner desires me in a sexual way ($M = 3.64$; $SD = 1.37$; $\alpha = 0.89$; $\chi^2 = 31.41$, $df = 12$, $p = .00$; CFI = .97; RMSEA = .07, 90% CI = [.06, .16]). Four items measured *partner identity uncertainty*: (a)

I am unsure about my role as a romantic partner, (b) I sometimes wonder whether or not I have the qualities of a good romantic partner, (c) I sometimes wonder how suitable I am as a romantic partner, and (d) I sometimes wonder whether or not I effectively perform my role as a romantic partner ($M = 3.49$; $SD = 1.32$; $\alpha = 0.90$; $\chi^2 = 23.86$, $df = 134$, $p = .03$; CFI = .98; RMSEA = .08, 90% CI = [.02, .13]). *Role identity uncertainty* included four items: (a) I am uncertain about my role in our inability to conceive, (b) I am unsure about my role in our ability to start a family, (c) I sometimes wonder how much I contribute to our inability to conceive, and (d) I am uncertain as to whether or not being able to conceive is important to who I am as a person ($M = 3.50$; $SD = 1.23$; $\alpha = 0.85$; $\chi^2 = 19.51$, $df = 13$, $p = .11$; CFI = .99; RMSEA = .06, 90% CI = [.01, .11]).

We conducted a second-order CFA to determine if the four factors formed a unidimensional, second-order latent variable. Results supported the formation of a second-order latent variable, so we formed a composite variable based on the means of the four sources of identity uncertainty to be used for subsequent analyses ($M = 3.54$; $SD = 1.06$; $\alpha = 0.94$; $\chi^2 = 274.84$, $df = 147$, $p = .001$; CFI = .92; RMSEA = .08, 90% CI = [.07, .09]).

Relational uncertainty. Guided by Solomon and Brisini's (2017) measure of relational uncertainty, we converted Knobloch and Solomon's (1999) original items to a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) with each item preceded by the stem "I sometimes wonder..." *Self uncertainty* was measured with six items (e.g., I sometimes wonder whether I want this relationship to work out in the long run; $M = 2.81$; $SD = 1.51$; $\alpha = 0.95$; $\chi^2 = 22.08$, $df = 13$, $p = .05$; CFI = .99; RMSEA = .07, 90% CI = [.04, .12]). *Partner uncertainty* was measured with five items (e.g., I sometimes wonder whether my partner is committed to me; $M = 2.92$; $SD = 1.51$; $\alpha = 0.95$; $\chi^2 = 22.98$, $df = 19$, $p = .24$; CFI = .99; RMSEA = .04, 90% CI = [.02, .11]). *Relationship uncertainty* was measured with eight items (e.g., I sometimes wonder whether the relationship will work out in the long run; $M = 2.98$; $SD = 1.49$; $\alpha = 0.95$; $\chi^2 = 47.22$, $df = 26$, $p = .01$; CFI = .98; RMSEA = .07, 90% CI = [.04, .12]).

Partner interference and facilitation. We used a modified version of Solomon and Knobloch's (2001) measure of partner interference and facilitation. Participants used a 6-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*) to rate each item. Four items measured *partner interference* (e.g., My partner interferes with my ability to achieve my goals; $M = 2.82$; $SD = 1.39$; $\alpha = 0.90$; $\chi^2 = 33.99$, $df = 19$, $p = .02$; CFI = .98; RMSEA = .07, 90% CI = [.04, .13]). Four items measured *partner facilitation* (e.g., My partner helps me with the plans I make; $M = 4.50$; $SD = 0.95$; $\alpha = 0.81$; $\chi^2 = 24.15$, $df = 13$, $p = .03$; CFI = .98; RMSEA = .08, 90% CI = [.02, .12]).

Relational turbulence. We used Knobloch's (2007) scale to measure relational turbulence. Participants were presented with the stem "At the present time, this relationship is ..." and were asked to rate a series of adjectives as descriptors of their relationship on a six-point scale (1 = *strongly disagree*, 6 = *strongly agree*). The measure contained eight items (e.g., turbulent, stressful; $M = 2.32$; $SD = 1.05$; $\alpha = 0.90$; $\chi^2 = 34.86$, $df = 19$, $p = .02$; CFI = .98; RMSEA = .07, 90% CI = [.04, .12]).

Perceptions of partner communication. Goldsmith et al.'s (2000) scale was used to measure perceptions of partner communication. Participants were first asked to write about a conversation that they recently had with their partner about their infertility and efforts to conceive. Then, participants were asked to reflect on this conversation and were presented with semantic differential scales to rate the extent to which their partner's communication was helpful/unhelpful, sensitive/insensitive, and supportive/unsupportive during this conversation. *Unhelpful communication* was measured with four items (e.g., helpful–hurtful; $M = 2.28$; $SD = 1.16$; $\alpha = 0.84$; $\chi^2 = 21.32$, $df = 13$, $p = .07$; CFI = .99; RMSEA = .07, 90% CI = [.01, .11]). *Unsupportive communication* was measured with four items (e.g., supportive–unsupportive; $M = 2.32$; $SD = 1.16$; $\alpha = 0.86$; $\chi^2 = 18.88$, $df = 13$, $p = .13$; CFI = .99; RMSEA = .06, 90% CI = [.01, .10]). Finally, *insensitive communication* was measured with four items (e.g., sensitive–insensitive; $M = 2.41$; $SD = 1.12$; $\alpha = 0.80$; $\chi^2 = 21.46$, $df = 13$, $p = .06$; CFI = .98; RMSEA = .07, 90% CI = [.01, .16]).

Results

Preliminary analyses

We calculated bivariate correlations among all variables (see Table 1). Results indicated that identity change was positively associated with identity uncertainty, but not significantly associated with any other variables. Identity uncertainty was positively associated with the three sources of relational uncertainty, relational turbulence, and all forms of perceptions of partner communication. In addition, self-uncertainty, partner uncertainty, and relationship uncertainty were all positively associated with partner interference, relational turbulence, and all forms of perceptions of partner communication, and negatively associated with partner facilitation. Interference from partners was negatively associated with partner facilitation and positively associated with relational turbulence, and unsupportive and insensitive perceptions of partner communication. Facilitation from partners was negatively associated with relational turbulence and all forms of perceived partner communication. Finally, relational turbulence was positively associated with all forms of perceived partner communication.

Test of hypotheses

We used structural equation modeling in AMOS 26 with maximum likelihood estimation to test our hypothesized model (see Figure 1). All variables in the model were treated as parcels consisting of a latent variable, observed variable, measurement error, and random error. Measurement error was calculated as $(1 - \alpha)(\sigma)$ (Bollen, 1989). For perceived partner communication, the parcel included unhelpful, unsupportive, and insensitive communication as observed variables loading on a single latent variable. All other variables included the observed composite variable as a single parcel on the latent variable.¹

The hypothesized model did not initially provide an adequate fit to the data ($\chi^2 = 181.90$, $df = 40$, CFI = .85, RMSEA = .16, 90% CI = [.15, .19]). Based on modification

Table 1. Bivariate correlations.

	VI	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11
VI: Identity change	—										
V2: Identity uncertainty	.33***	—									
V3: Self uncertainty	-.14	.25**	—								
V4: Partner uncertainty	-.04	.36***	.77***	—							
V5: Relationship uncertainty	-.12	.33***	.85***	.89***	—						
V6: Partner interference	-.11	.16	.73***	.57***	.67***	—					
V7: Partner facilitation	-.05	-.12	-.22**	-.22**	-.23**	-.18*	—				
V8: Turbulence	-.04	.34***	.42***	.43***	.45***	.40***	-.22**	—			
V9: Unhelpful partner comm.	.08	.30***	.21*	.22*	.24**	.16	-.49***	.27**	—		
V10: Unsupportive partner comm.	.10	.26**	.30***	.27***	.31***	.26**	-.47***	.38***	.81***	—	
V11: Insensitive partner comm.	.07	.26**	.30***	.26**	.32***	.26**	-.54***	.31***	.78***	.79***	—

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

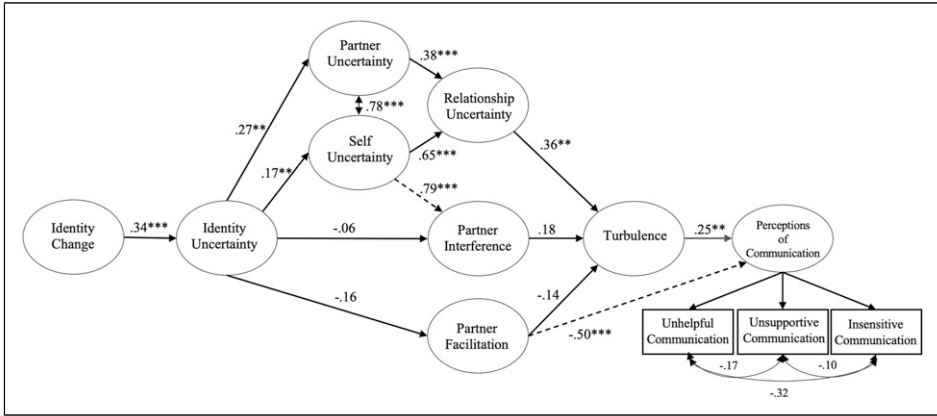


Figure 2. Fitted model.

indices, we added one path to the model at a time until we achieved a satisfactory fit. Two paths were added to the model between self uncertainty and partner interference, and between partner facilitation and perceived partner communication. These modifications resulted in a satisfactory model fit ($\chi^2 = 54.79$, $df = 38$, $CFI = 0.98$, $RMSEA = 0.06$, $90\% CI = [.01, .09]$).

The final model is presented in Figure 2. Consistent with our hypotheses, identity change was positively associated with identity uncertainty (H1).² In turn, identity uncertainty was positively associated with self and partner uncertainty, which were positively associated with relationship uncertainty (H2). Contrary to predictions, however, identity uncertainty was not significantly associated with partner interference (H3) or facilitation (H4). As predicted, relational uncertainty was positively associated with perceptions of relational turbulence (H5); however, neither partner interference (H6) nor facilitation (H7) was associated with relational turbulence. Finally, relational turbulence was positively associated with negative perceptions of partner communication (H8). Two paths were added to the model to achieve satisfactory fit. The first was a positive association between self uncertainty and partner interference, which is consistent with other empirical tests of relational turbulence theory (e.g., Leustek & Theiss, 2018) and the theory’s reasoning given that the relationship mechanisms are intercorrelated (Solomon et al., 2016). The second was a negative association between partner facilitation and perceived partner communication, which is reasonable given that partners who are facilitating personal goals are likely communicating in ways that are helpful, supportive, and sensitive.

In a final step, we ran mediation analyses with 2000 bootstrap samples and 95% confidence intervals to evaluate the indirect effects of relational uncertainty and interdependence processes on perceptions of a partner’s communication during conversations about infertility. Results indicated a positive indirect effect for relationship uncertainty on negative perceptions of partner communication ($\beta = .09$, $p < .01$); however, the indirect

effects for partner facilitation ($\beta = -.04, p = .10$) and interference ($\beta = .04, p = .09$) were not significant.

Discussion

This study sought to examine how the experience of infertility creates opportunities for identity uncertainty as women cope with changes to their personal and relational roles, and the impact such questions can have on relationship qualities. In addition, we considered how relational uncertainty and patterns of interdependence are associated with conditions of relational turbulence in the context of infertility. The results of this study indicate that changes to identity during the experience of infertility are associated with identity uncertainty, which in turn predicts relational uncertainty. However, our results indicate that experiences of identity uncertainty do not predict interdependence patterns. Furthermore, perceptions of relational turbulence were predicted by relational uncertainty, but not interference or facilitation from partners. Finally, perceived partner communication was predicted by relational turbulence, as hypothesized, but also by a direct association with partner facilitation. In this section, we discuss the implications of our findings for enriching theory and practice involving couples experiencing infertility.

Implications for advancing theory

Although the development of a personal identity is an ongoing process that is frequently in flux (e.g., [Berzonsky, 2008](#)), significant transitions can coincide with considerable upheaval in people's understanding of the self. In particular, circumstances that create a discrepancy between a desired identity and the actual self can be associated with considerable uncertainty about personal and relational roles ([Jung & Hecht, 2004](#)). Notably, infertility is not the only circumstance in which changes to identity and identity uncertainty might be salient. Any significant transition or new life stage can produce conditions that increase uncertainty about a person's identity (e.g., starting a new career, entering retirement). The degree of uncertainty people experience in response to those changes might depend on the magnitude of the shift, the valence of the change, and the degree to which it was expected or unexpected. Although prior research highlights the implications of identity discrepancies on individuals and relationships (e.g., [Jung & Hecht, 2004](#)), additional research is needed to explore associations between identity change and identity uncertainty in different interpersonal and relational contexts.

This study also has implications for advancing relational turbulence theory. As a starting point, this research adds to a handful of studies that have investigated the antecedent conditions that shape relational uncertainty and interdependence processes during relationship transitions. Prior research has examined depressive symptoms in service members following deployment (e.g., [Knobloch et al., 2013](#); [Knobloch & Theiss, 2011](#)) and transition processing communication between parents of children with autism ([Brisini & Solomon, 2018](#)) as conditions that can exacerbate or attenuate relational turbulence. This study adds identity uncertainty as a variable that can be heightened during relationship transitions and associated with the relationship characteristics that

contribute to a climate of relational turbulence. Our findings suggest that identity uncertainty may serve as an antecedent for increased relational uncertainty, but it is not necessarily associated with interdependence processes. We suspect that identity uncertainty shared a stronger association with relational uncertainty because they both reflect an underlying sense of ambiguity about the self and the relationship. Perhaps identity uncertainty is less strongly associated with interdependence patterns because it reflects an introspective focus on the self, as opposed to interpersonal concerns about a partner's influence. Additional research is needed to better understand the sources and consequences of identity uncertainty during relationship transitions.

This study also adds to the literature on relational turbulence theory by documenting divergent outcomes of relational uncertainty and interdependence patterns in close relationships, which provides mixed support for the theory (Solomon et al., 2016). The mediated pathway between relational uncertainty, relational turbulence, and perceptions of partner communication is consistent with studies that have shown similar patterns for predicting perceptions of hurtful messages (e.g., McLaren et al., 2011) and social support (e.g., Knobloch et al., 2018). Thus, our findings for relational uncertainty confirm theoretical reasoning and add perceived partner communication during conversations about infertility as a relationship outcome predicted by conditions of turbulence.

Perceptions of a partner's interference and facilitation, however, were not significantly associated with relational turbulence. The lack of significant effects for the associations between interdependence patterns and relational turbulence could be attributed to theoretical or empirical factors. The relational turbulence theory posits that interrupted patterns of interdependence direct people's attention to the immediate source of the disruption, which intensifies emotional reactions to the event (Solomon et al., 2016). Thus, the theory positions patterns of interdependence as proximal predictors of emotional reactivity in specific episodes and argues that repeated episodes marked by volatile emotions accumulate into a broader sense of the relationship as turbulent. Consistent with recent developments in relational turbulence theory (e.g., Brisini & Solomon, 2018; Knobloch et al., 2018), we modeled the patterns of interdependence as direct predictors of relational turbulence as a more abstract reflection of the underlying emotional reactivity people may be experiencing in response to their partner's influence. Perhaps patterns of interdependence are more robust predictors of the immediate reactions to specific interpersonal episodes than the diffuse effects on the relationship climate. Longitudinal research on couples experiencing infertility is required to better explore the causal mechanisms at play in producing turbulent relationships. There are also possible empirical explanations for the lack of significant effects for patterns of interdependence. Most notably, given the sample size, statistical power was limited; thus, it is possible that a larger sample would have yielded significance for these effects.

One path that was added to the model revealed that partner facilitation is associated with perceptions of a partner's communication as more helpful, supportive, and sensitive. This association reflects the fact that constructive interdependence processes involve communication behaviors that reflect these characteristics. Given that many tests of relational turbulence theory tend to overlook the effects of partner facilitation and focus primarily on the effects of partner interference, the findings in this study add to the

literature in two important ways. First, they complement the handful of studies on relational turbulence theory that incorporate facilitation from partners (e.g., [Brisini & Solomon, 2018](#); [McLaren et al., 2011](#)) by adding perceptions of partner communication as an outcome that is predicted by constructive patterns of interdependence. Particularly during a relationship transition like infertility, understanding how partners attempt to facilitate goals and offer support can be vital for successfully navigating this experience. On the other hand, the lack of association with relational turbulence raises broader questions about the role of partner facilitation in mitigating upheaval in relationships during transitions. This finding has implications for the assumptions of relational turbulence theory ([Solomon et al., 2016](#)) and points to the need for more studies to incorporate facilitation from partners as a predictor of relationship outcomes.

Implications for couples coping with infertility

The results of this study also have pragmatic implications for helping couples cope with infertility. On an individual level, our results point to the ways in which infertility is associated with changes to personal identity that can raise questions about how to enact new identities, roles, and relationships. Under these circumstances, individuals may find it helpful to reappraise their expectations of parenthood and their definition of family in ways that recognize and embrace childlessness as an acceptable identity ([Lechner et al., 2007](#)). In addition, increased communication between partners about the changes to identity, uncertainty about new identities, and expectations for the future may help individuals find satisfaction and acceptance of the unexpected deviation from their desired self (e.g., [Yoo et al., 2013](#)). For women facing infertility, seeking support through online infertility support groups ([Malik & Coulson, 2010](#)) or professional counseling ([Peterson et al., 2012](#)) can help them cope with their circumstances, find community support, and embrace new identities.

On a relationship level, our findings highlight the relationship conditions that are associated with turbulence as couples navigate the experience of infertility. Research indicates that relational uncertainty and interruptions to interdependence are common for couples during the transition to parenthood, even when conception is uneventful (e.g., [Theiss et al., 2013](#)), let alone when it is marked by challenges and disappointment. Thus, couples coping with infertility may be able to forestall relational turbulence by learning to anticipate the questions and disruptions that are likely to accompany this experience. Recognizing relational uncertainty and changes to interdependence as normative aspects of this transition can help dampen people's reactions to these relationship conditions as they arise. Along these lines, clinical approaches designed to help couples cope with infertility suggest that active distancing, demonstrating self-control, and accepting responsibility can promote resilience ([Peterson et al., 2006](#)). Our results also point to the ways in which relational turmoil during the experience of infertility may invite more negative and biased appraisals of a partner's communication behavior. Romantic partners are an important source of social support during the experience of infertility (e.g., [Peterson et al., 2006](#)), but our results show that a climate of turbulence in the relationship can be a

barrier to enacting and receiving supportive communication (e.g., Solomon & Priem, 2016).

Limitations and future directions

Our study is not without some limitations. First, the cross-sectional nature of our data limits our ability to show how the experience of infertility unfolds over time and how repeated polarized interactions contribute to a climate of relational turbulence. Moreover, it limits our ability to document possible reciprocal effects between turbulence and relationship mechanisms. A related limitation is that we only have data from one partner and, therefore, cannot speak to the interdependence that might exist between partners in regard to identity shifts, relational roles, or turbulence. In addition, our sample consisted only of women; therefore, we are unable to speak to the ways in which men experience infertility.

Future research should collect longitudinal and dyadic data to address these limitations. Examining dyadic data over time can reveal more about the nature and timing of identity shifts in response to reproductive hardship. Monitoring these factors over time will provide better insight into the ways in which changes to identity and relationship outcomes are interdependent, incremental, and reciprocal. In addition, dyadic data can provide insight into experiences of both women and men during infertility, as well as the ways in which couples cope individually and together as they confront infertility.

A final limitation is that the scale that we developed to measure identity change focused on the magnitude of a shift in identity rather than the valence of the change. The realization of infertility can create gaps in women's identity that reflect a loss of role or unmet potential, but it may also create change that strengthens other important roles and emphasizes new and unexpected traits. Future research should measure both the magnitude of identity change, as well as the positive or negative valence of these changes, to achieve a more nuanced understanding of the effects that identity shifts can have in this context.

Conclusion

Infertility is an experience that can change how women view their identity, relationship, and future family. The results of this study suggest that experiences of infertility can shape both individual and relational outcomes. For women, infertility can shift identities in ways that elicit uncertainty about one's understanding of the self and relational roles. In the relationship, identity concerns that arise during the experience of infertility create a context that is ripe for relational uncertainty and interruptions to interdependence, which can give rise to relational turbulence and bias perceptions of a partner's communication. Thus, efforts to help couples effectively cope with infertility should focus on the identity concerns that arise in this context and the strategies that partners use to support each other during these challenging circumstances.

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Notes

1. We conducted additional preliminary analyses to evaluate potential covariates for inclusion in the structural equation model. As a first step, we ran ANOVAs for each of the variables in the structural model to examine differences due to male-factor infertility, female-factor infertility, or combined infertility. Results indicated only one small difference in unsupportive communication based on the source of infertility. We also ran regression analyses to examine the effects of household income and length of time trying to conceive on each of the variables in the model. Results indicated only one significant association between household income and relational turbulence. Because there were not widespread effects for any of the potential covariates we examined, we opted for a more parsimonious structural model that excluded covariates.
2. In post hoc analyses, we ran the model separately substituting each source of identity uncertainty for the composite latent variable to see if the results differed depending on the type of identity uncertainty. Results indicated that identity change shared similar positive associations with gender ($\beta = .33^{***}$), partner ($\beta = .35^{***}$), and sexual ($\beta = .33^{***}$) identity uncertainty, but not role identity uncertainty ($\beta = .18$). In addition, self-uncertainty was similarly predicted by gender ($\beta = .21^*$), partner ($\beta = .25^{**}$), sexual ($\beta = .18^*$), and role ($\beta = .18^*$) identity uncertainty. Partner uncertainty was similarly predicted by partner ($\beta = .21^{***}$) and sexual ($\beta = .20^{***}$) identity uncertainty, but not role ($\beta = .07$) or gender ($\beta = .11$) identity uncertainty. Finally, interference from partners was not predicted by any of the sources of identity uncertainty (gender $\beta = -.06$; partner $\beta = -.01$; sexual $\beta = -.04$; role $\beta = -.02$), and facilitation from partners was predicted by partner ($\beta = -.34^{***}$) and sexual ($\beta = -.24^*$) identity uncertainty, but not the other sources of identity uncertainty (gender $\beta = -.10$; role $\beta = .04$).

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