

https://doi.org/10.1037/pspi0000411

Expect and You Shall Perceive: People Who Expect Better in Turn Perceive Better Behaviors From Their Romantic Partners

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People who are happy with their romantic relationships report that their partners are particularly effective at meeting their everyday relational needs. However, the literature invites competing predictions about how people arrive at those evaluations. In pilot research, we validated a scale of concrete, specific relationship behaviors that can be performed by a romantic partner day-to-day. In Study 1, cross-lagged panel models examined how expectations of positive behaviors, perceptions of positive behaviors, and relationship quality predict changes in one another from week to week. People who expected more positive behaviors in turn perceived more positive behaviors from their partners 1 week later. Key effects extended to negative relationship behaviors (Study 2). In Study 3, the same pattern emerged in a dyadic sample, with expected behaviors predicting changes in perceived behaviors independent of the partner's own reports. Truth and bias analyses revealed that people with lower expectations had more negatively biased perceptions of their partners' behaviors, whereas high expectations were associated with better accuracy. We obtained these results in the context of specific, verifiable behaviors reported on over relatively short periods, underscoring how powerfully people's everyday relationship perceptions may be shaped by their more global perceptions.

Keywords: romantic relationships, expectancies, confirmation bias, dynamical systems, investment

Supplemental materials: https://doi.org/10.1037/pspi0000411.supp

Romantic partners rely on each other to meet a broad range of practical and psychological needs. People who are happy with their relationships report that their partners are particularly skilled at meeting these needs in ways that make them feel understood, validated, and cared for (Reis et al., 2004; Reis & Gable, 2015). They perceive that their partners disclose more thoughts and feelings to them (Sprecher & Hendrick, 2004), make them feel more appreciated (Gordon et al., 2012), regard them in a more positive light (Murray et al., 2000), and are better at helping them celebrate their successes (capitalization; Gable & Reis, 2010; Gable et al., 2004) compared to less satisfied individuals. Satisfied people report that their partners are more motivated to engage in mutually enjoyable dates (Girme et al., 2014) and engage in more self-expanding activities that inject excitement into the relationship

(Aron et al., 2000; Muise et al., 2019). They are also more likely to report that their partners perform their fair share of housework and childcare (e.g., Newkirk et al., 2017). Thus, according to people who are satisfied with their relationships, it is not only the partner's general disposition or connection to them that makes them feel so satisfied, but also their willingness to perform specific, effortful acts for them on a daily basis (Van Lange et al., 1997; Wieselquist et al., 1999).

The empirical literature tying people's relationship quality to their partners' everyday positive relationship behaviors is extensive and consistent. However, across such studies, it is not uncommon for the effects of *perceived* partner behaviors to dwarf any effects of the partners' own reports. When predicting whether a given person is satisfied with their relationship or not, it is more important for that

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This work was supported by Social Sciences and Humanities Research Council of Canada (SSHRC) Grants awarded to Samantha Joel, and Johanna Peetz and Geoff MacDonald. The authors also thank Yasmin Elahi for her involvement in the dyadic data collection.

Samantha Joel played lead role in conceptualization, data curation, formal analysis, investigation, methodology, project administration, visualization and writing of original draft. Jessica A. Maxwell played supporting role in methodology, writing of original draft and writing of review and editing and equal role in formal analysis. Devinder Khera played supporting role in data curation, formal analysis, project administration and writing of review and editing. Johanna Peetz played supporting role in conceptualization, investigation, methodology, resources, supervision and writing of review and editing. Brian R. W. Baucom played equal role in formal analysis. Geoff MacDonald played lead role in funding acquisition and supervision and supporting role in conceptualization and writing of review and editing.

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person to perceive that their partner self-discloses (Sprecher & Hendrick, 2004), enjoys their date nights (Girme et al., 2014), does their fair share of housework (Newkirk et al., 2017), and engages in self-expanding activities with them (Muise et al., 2019) than it is for their partner to report actually having done these things (for an exception, see the literature on invisible support; Zee & Bolger, 2019). For some relationship constructs, the importance of perceptions, rather than the partner's own reports, is built right into the measure (e.g., perceived partner responsiveness; Reis et al., 2004; perceived capitalization attempts; Gable et al., 2006; perceived partner regard; Murray et al., 2000). Consistent with these perspectives and data, the results of a recent, large-scale project suggests that partner reports are collectively weak predictors of selfreported relationship quality (Joel et al., 2020). In this project, researchers used machine learning methods to predict the relationship satisfaction and commitment of over 11,000 couples across 43 dyadic longitudinal studies. Participants' own reports about the features and functioning of their relationship (e.g., how appreciative they felt toward their partners; how committed and satisfied they perceived their partners to be) predicted 48% of their own satisfaction with that relationship at baseline. However, their partners' reports of those same variables predicted only 15% of the variance. Combining own and partners' reports (46%) added no predictive power beyond own reports alone.

Why is relationship quality often strongly associated with own perceptions of the partner's behaviors, yet weakly associated with the partner's reports of those same behaviors? Where do perceptions of the partner's behaviors come from, if not from the same place as the partner's own reports? One possibility is that when people are asked to rate how their partners behave in their relationships, they arrive at these assessments in a relatively subjective manner, projecting their broader attitudes and perspectives onto those judgments (e.g., Lemay & Clark, 2008; Lemay et al., 2007, 2015; Schoebi et al., 2012). The benchmarks by which people evaluate their partners' behaviors may include both relationship ideals (e.g., "How much responsiveness do I want from my partner?") and relationship expectations (e.g., "How responsive do I expect my romantic partners to be?"). Although related, expectations for ideal behavior are independent from probabilistic expectations of likely behavior (Olson et al., 1996).

Several prominent relationship theories suggest that romantic relationship evaluations are made relative to beliefs about the relationship or the partner. For example, social exchange theory posits that people evaluate the rewards and costs of their relationship relative to an internal set of standards (Thibaut & Kelley, 1959). The importance of expectations for relationship quality is also consistent with the Ideal Standards Model (Fletcher & Simpson, 2000; Simpson et al., 2001), which posits that people are less satisfied with their relationships to the extent that discrepancies exist between perceptions of the relationship and one's ideals. An extensive body of work on positive illusions in relationships by Murray and colleagues has shown that relationships are evaluated through the lens of beliefs about the partner and the relationship (Murray & Holmes, 1997; Murray et al., 1996a, 1996b; Murray et al., 2002, 2003). Positive illusions about the partner are linked to more relationship satisfaction, both in the moment and over time (Murray & Holmes, 1997).

In the present work, we focus on people's concrete relationship expectations: The beliefs that people hold about how the romantic partner will likely behave in the future. Relationship expectations may explain some of the shared variance between perceived partner behaviors and relationship quality that is not explained by the partner's own reports of the behavior. For example, expecting high responsiveness from a romantic partner might be linked to perceptions of responsiveness and relationship quality above and beyond the objective responsiveness the partner actually exhibited. Or, framed more negatively, expecting rejection from a partner relates to more negative perceptions and relationship quality, independent of the partner's true feelings or behavior (e.g., Cameron et al., 2009; Murray et al., 2001, 2006; Rodriguez et al., 2019).

In pilot research (described fully in the Online Supplement), we created measures of specific relationship behaviors that partners can perform daily and examined participants' reports on those measures over a relatively short time span (1- or 2-week periods). We intentionally selected behaviors that are relatively concrete and verifiable (see Neff & Geers, 2013) and important for relationship maintenance (e.g., responsiveness, Reis et al., 2004; sexual intimacy, Maxwell & McNulty, 2019; self-expansion, Aron et al., 2000). By focusing on concrete behaviors, we sought to create a measure that would be relatively independent from more global perceptions of relationship quality. In the current package of studies, we measured participants' perceptions of how frequently their partners performed these behaviors over the previous week. Then, we measured how frequently people expected their partner to perform those same behaviors over the upcoming week. Across three studies, we explored competing predictions about how relationship expectations are associated with perceptions of relationship behaviors, as well as relationship quality from week to week.

How Might Relationship Expectations Shape Relationship Outcomes?

Existing literature offers competing ideas about how relationship expectations may shape perceptions of, and responses to, the specific relationship maintenance behaviors in which a partner engages. We outline five such models below. In the present research, we simultaneously evaluate these five plausible models, as to our knowledge, these models have not been directly pitted against each other in the same study. Two of the models delineate competing ways in which expectations may shape people's perceptions of their partners' behaviors (perceptual confirmation vs. behavioral confirmation), and three of the models delineate competing ways in which expectations and relationship quality may influence one another (construction vs. reflection vs. suffocation model). Note these models are not necessarily mutually exclusive, and thus we may observe some combination of them in our results.

Do Relationship Expectations Shape Relationship Perceptions?

Perceptual Confirmation Hypothesis

It is possible that we may find expectations of the partner's behaviors directly positively shape perceptions of the partner's behaviors. Specifically, people may selectively attend to information that confirms their expectancies such that they wind up perceiving what they expected to perceive, independent of whether their expectancies were actually confirmed (Darley & Gross, 1983; Kunda, 1990; Lord et al., 1979; Nickerson, 1998; Stone et al., 1997). The most direct support for perceptual confirmation in the relationship context comes from research on spousal interactions in the lab (McNulty, 2008; McNulty et al., 2008; Vanzetti et al., 1992). In one such study, newlywed couples were brought into the lab to discuss an area of difficulty in their marriage (McNulty & Karney, 2002). Results show that marital satisfaction predicted people's expectations about how well the discussion would go, which in turn predicted later appraisals of how well the discussion went. The influence of expectations on appraisals was independent of the partner's actual behavior as rated by trained coders, providing evidence of perceptual confirmation: participants saw what they expected to see. Putting this perspective in terms of an example mixed-sex couple we will use throughout-Brent and Angela-if Brent expects Angela to engage in many positive relationship behaviors this coming week, he will perceive that she does, regardless of her actual behavior that week.

Behavioral Confirmation Hypothesis

A related but distinct possibility is that we will observe that holding high expectations shapes the partner's actual relationship behaviors. Social expectancies can lead people to behave in ways that elicit the reactions they expect from others (i.e., behavioral confirmation or the Pygmalion effect; Rosenthal & Jacobson, 1968; Snyder, 1984; Snyder & Swann, 1978; Snyder et al., 1977). For example, in a lab study on interrogation (Kassin et al., 2003), participants in the role of "interrogator" were randomly assigned to be told that statistically, their suspect was either probably guilty (guilty expectations) or probably innocent (innocent expectations). Interrogators with guilty expectations conducted more aggressive interrogations, which led their suspects to act in ways that made them appear guiltier to outside observers. Expectations about a partner's relationship behaviors may similarly be a self-fulfilling prophecy whereby partners tend to live up to the expectations set for them.

Behavioral confirmation has received some empirical support in the relational domain. For example, research on positive illusions shows that not only are people are more satisfied with their relationships when they perceive their partners idealistically (Murray & Holmes, 1997; Murray et al., 1996b), but also that the partners of idealistic individuals gradually come to see themselves in this more positive light (Murray et al., 1996a). Research on the Michelangelo phenomenon similarly shows that people experience the most growth toward their ideal selves—a process that feeds back to increase relationship satisfaction-when their partners already perceive them as representing their ideals (Drigotas et al., 1999). In other words, relationships can thrive when romantic partners see each other in a highly optimistic light. Further evidence has been garnered in the context of dispositional optimism, as numerous studies suggest that optimistic individuals enjoy higher quality relationships (e.g., Assad et al., 2007; Gordon & Baucom, 2009). For example, in one lab study, both optimists and their partners perceived a shared conflict experience to be more constructive as well as better resolved 1 week later. Given both partners agreed in their positive assessment bolsters the argument that optimism leads to objectively better relationship experiences (Srivastava et al., 2006). Put in terms of our couple, by Brent perceiving that Angela will engage in many positive relationship behaviors this week, she actually will engage in more positive behaviors this week.

We will test the competing perceptual and behavioral confirmation hypotheses within the context of day-to-day behavioral relationship expectations using lagged panel analyses (see Figure 1, for a visual depiction). Consistent with perceptual confirmation, people who expect more positive behaviors from the partner might selectively notice any positive behaviors that the partner does to a greater extent than those who expect few behaviors. In turn, their perceptions of their partner's behaviors may largely align with their expectations, independently of what their partner actually did or did not do for them (dotted line). Consistent with behavioral confirmation, people who hold higher expectations of their partners may truly have partners who do more for them from week to week, in turn leading them to (accurately) perceive more positive behaviors from their partners (solid lines).

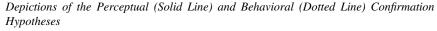
Do Relationship Expectations Shape Relationship Quality, or Reflect It?

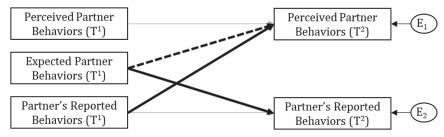
In contrast to the previous two possible models, we may find that expectations are linked to relationship quality, independent of a partner's actual or perceived behaviors.

Construction Model

Research suggests that holding high expectations may have downstream benefits for relationship quality. For example, people who hold more positive beliefs about their romantic relationships experience

Figure 1





greater relationship satisfaction over time (Murray & Holmes, 1997; Murray et al., 1996a). Research also shows the positive effects of high expectations for shorter time frames (Lemay et al., 2015; Schoebi et al., 2012). In one study, individuals who expected more positive relationship emotions from their partner on 1 day experienced more positive relationship outcomes the next day, including more positive sentiments and positive regard for their partner (Lemay et al., 2015). Outside of relationship contexts, there is some additional evidence that expectations can shape people's evaluations of their experiences (Wirtz et al., 2003). In this study, the affect people predicted they would experience during a spring break vacation was more predictive of their overall vacation evaluation (and their future vacation plans) than the affect they recorded during a vacation diary. Put in terms of our example couple, if Brent expects Angela will engage in many positive relationship behaviors this coming week, he will report higher relationship quality the following week.

Several mechanisms have been suggested for why expectations may positively shape relationship outcomes (Lemay & Venaglia, 2016). One such mechanism is desire for the relationship: People who hold high expectations for the relationship and the partner may be more motivated to maintain the relationship, and thus be more likely to engage in pro-relationship behaviors. This idea is consistent with research suggesting that higher expectations for the relationship's future lead to higher commitment (e.g., Baker et al., 2017). Another possible mechanism is positive evaluations. For example, positive illusions are theorized to be adaptive because they broadly lead to more positive interpretations of relationship events and shield the relationship from conflict and doubt (Murray & Holmes, 1997; Murray et al., 1996a).

Reflection Model

Positive associations between expectations and relationship quality are generally taken as evidence that holding high expectations actively shapes relationship quality. However, an alternative possibility we will explore is that people's expectations about their partner's behaviors simply reflect their current relationship quality. Coming back to the example of Brent and Angela: Brent may feel more positively about his relationship during the week when he and Angela are on a romantic vacation together compared to on a typical work week, and his higher expectations for Angela to engage in more positive relationship behaviors on vacation week may be a result of these more positive relationship feelings rather than the cause of them. This idea that relationship quality shapes relationship expectations, rather than the other way around, is referred to as the reflection model (Lemay & Venaglia, 2016). One potential mechanism for such a model is projection: Relationship quality may motivate people to engage in more positive relationship behaviors themselves, in turn leading them to expect and even perceive reciprocity from their partners (e.g., Lemay & Clark, 2008).

As depicted in Figure 2, both the construction and reflection models suggest that expectations of the partner's relationship behaviors should be associated with relationship quality, over and above perceptions of the partner's behaviors. However, the construction model suggests that expectations should drive changes in relationship quality (solid line), whereas the reflection model suggests that relationship quality should drive changes in expectations (dotted line).

Suffocation Model

In contrast to the previous four models which would suggest positive outcomes of high expectations, it is also possible that holding low expectations would be broadly associated with better relationship outcomes, by providing an easier standard for the partner to meet. Indeed, when we set out to plan this research, this pattern was what we originally hypothesized. This hypothesis follows from the suffocation model of marriage (Finkel et al., 2014, 2015), which argues that many modern couples experience dissatisfaction and disappointment with their marriages because their relationship expectations are unrealistic. Thus, the suffocation model would predict that high expectations can be associated with negative relationship outcomes—particularly if people's relationships cannot meet those expectations (see also McNulty, 2016).¹

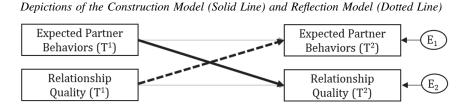
Empirical support for the evaluative role of expectations broadly has emerged from research on decision affect theory, which posits that people's emotional reactions to personal events are calibrated to their beliefs about how those events could have been better or worse (Mellers et al., 1997). Outcomes that are worse than predicted or hoped for tend to elicit negative emotions such as regret and disappointment (e.g., Zeelenberg et al., 1998), whereas outcomes that are better than predicted are associated with enhanced positive emotions (see Mellers, 2000, for a review).

Within the interpersonal literature, there is evidence suggesting that high relationship expectations can set people up for disappointment in certain contexts, such as when partners lack the skills to achieve the expected relationship outcomes (McNulty & Karney, 2004), when expectations are both specific and unrealistic (e.g., "I expect my partner and I will always be able to resolve our disagreements"; Neff & Geers, 2013), or when beliefs about a partner's ability to change are paired with a partner's slow or failed change attempts (Hui et al., 2012; Kammrath & Peetz, 2012). High expectations might therefore hurt relationship appraisals, particularly in the context of relatively concrete, falsifiable expectations. McNulty and Karney (2004), for example, examined long-term behavioral expectations among newlyweds with items such as, "My partner will rarely make mistakes" and "My partner will always take time for me when I need him/her." Results showed that the impact of these positive expectations on marital quality was moderated by the partners' abilities to fulfill those expectations (and the same pattern occurs for one's standards for a romantic partner; McNulty, 2016). More recently, Neff and Geers (2013) directly compared the impact of similar situational, relationship-specific optimism (e.g., "I expect my partner will always be affectionate") versus more global, dispositional optimism (e.g., "In uncertain times, I usually expect the best"). Whereas global optimism predicted positive relationship outcomes such as better coping with conflict, relationship-specific optimism was associated with poorer outcomes such as increases in marital problems over time.

Drawing on these findings, it is possible that participants will feel appreciative when their partners exceed their expectations and

¹ The suffocation model also posits that couples who expect their relationship will meet higher order goals (e.g., self-actualization) can obtain the greatest relationship satisfaction if these high expectations are achieved (Finkel et al., 2014, 2015). However, in our research we do not delineate between people's expectations for their partner to meet higher (self-actualization) versus lower (love) order goals, and focus broadly on a partner's failure to meet expectations.

Figure 2



disappointed when they fall short. As such, we anticipated a moderation between expected behaviors for the next week and perceived behaviors during that week, predicting changes in relationship quality (see Figure 3).

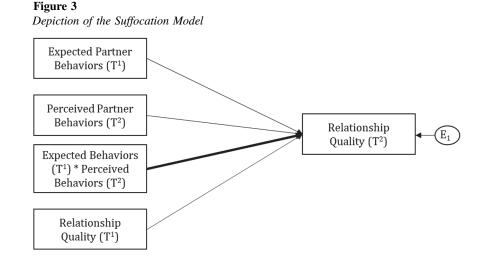
The Present Research

The present research provides the most direct test to date of these five different hypotheses about how relationship expectations may shape relationship outcomes. Previous studies have explored these theoretical models relatively separately, using different samples, study designs, measures, and statistical approaches. We sought to extend this work by testing all five models using the same data in a way that would allow us to compare the strength of evidence for each. First, we constructed a scale of concrete relationship behaviors that can be performed regularly (e.g., "In the past week, my partner has arranged fun things for us to do together"). Because these behaviors are more readily observable and verifiable than global evaluations (e.g., "I feel cared for by my partner"), they offer a reasonable test of hypotheses that require people to be able to track their partners' relational contributions, such as the behavioral confirmation and suffocation models. We examined the mutual influence of expectations and perceptions of these behaviors as well as relationship quality over time using a dynamical systems approach. Dynamical systems is a metatheoretical perspective that assumes that every construct of interest ebbs and flows over time in meaningful ways (Butner et al., 2005). Within this framework, cyclical change is treated as signal rather than noise. Each variable is treated as both a predictor and an outcome variable, so as to directly capture the ways that the variables

mutually push and pull each other over time. This novel conceptualization of the research question allows us to directly test four of the theoretical models of interest within a single cross-lagged panel model (see Figure 4). The suffocation model can additionally be tested by controlling for perceived partner behaviors at Time 2, and by adding an interaction term between Time 1 expected behaviors and Time 2 perceived behaviors.

We first conducted pilot research to inform three subsequent studies. The goal of the pilot research was to construct and validate a scale of specific, concrete, positive relationship behaviors that people engage in from day-to-day. Open-ended responses about positive relationship behaviors were collected from 179 participants, then administered as quantitative items to an additional 599 participants. The pilot study resulted in a 21-item Positive Relationship Behaviors Scale that can be administered either in past tense to assess perceptions of behaviors (e.g., "In the past week, my partner has shown support for my interests or projects") or in the future tense to assess expected behaviors (e.g., "Next week, my partner will be willing to try new things with me").

In Study 1, 618 participants in relationships completed two relationship surveys either one or 2 weeks apart. At each time point, participants reported on their expectations of their partner's upcoming behaviors, their perceptions of their partner's previous behaviors, and four indicators of relationship quality (e.g., satisfaction, commitment). We used cross-lagged panel models to test how expectations, perceptions, and relationship quality mutually influenced each other over the course of the study. Study 2 was a replication and extension of Study 1, using additional concrete positive behavior items as well as negative behavior items.



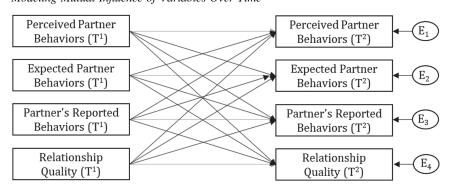


Figure 4 Modeling Mutual Influence of Variables Over Time

Finally, in Study 3, 54 couples completed weekly surveys for 3 weeks. At each time point, both partners reported on expectations of both their own and their partner's behaviors over the upcoming week, perceptions of own and partner's behaviors over the previous week, and each of the four indicators of relationship quality. We used cross-lagged actor–partner interdependence models (APIMs) to test how expectations and perceptions of both own and partner's behaviors as well as relationship quality mutually influenced each other over the 3-week period. Further, the dyadic nature of Study 3 allows us to ascertain whether or not partners accurately perceived their partner's relationship behaviors, whether they systematically overperceived or underperceived such behaviors, and whether accuracy or bias in turn affect relationship quality. Data, code, and materials for all studies can be found at https://osf.io/dzn8r/.

Pilot Research

The goal of the pilot research was to construct and validate a scale of concrete, positive relationship behaviors that could be easily falsified on a week-to-week basis. We intentionally selected behaviors that most participants perceived as highly desirable and that represented a wide range of relationship topics and domains. Further, to ensure that partners could readily report on behaviors week-to-week, we selected only positive behaviors (rather than a lack of negative behaviors) that were relatively specific and observable (behaviors rather than thoughts or attitudes). We created items that were more measurable and on a shorter time scale than general expectations for the next few months/years of the relationships (e.g., McNulty & Karney, 2004; Neff & Geers, 2013), and that focused on behaviors rather than traits (e.g., Murray et al., 1996b; Neff & Karney, 2005).

Complete methods and results from the pilot research can be accessed in the Online Supplement. An initial sample of participants generated open-ended responses used to identify desirable relationship behaviors (sample A). To ensure a broad range of behaviors, we gave participants a list of ten relationship topics (e.g., leisure time, money, family) and asked them to generate desirable behaviors in four of these listed domains. We asked participants to list behaviors that they wished their partners would engage in more often, as well as behaviors that their partners already performed that they appreciated. We converted selected behaviors into 81 quantitative items and administered these items to a second sample (sample B). Sample B participants were asked to rate how often their partner had engaged in each behavior over the previous week, as well as the desirability of each behavior. We used these ratings to select behaviors that are common and desirable in most relationships and that had desirable psychometric properties. The resulting scale was empirically distinct from global satisfaction, as evidenced by the fact that a two-factor confirmatory model fit the data significantly better than the one-factor model in both sample A, $\chi^2(1) = 603.79$, p < .001, and sample B, $\chi^2(1) = 575.26$, p < .001. We administered the final scale items to a third sample (sample C; see Table 1) in both past and future tense formats with the goal of achieving convergent and discriminant validity with relationship quality indices (see Online Supplement).

The resulting scale represents many of the specific behaviors that researchers have already established as being highly beneficial for romantic relationships. For example, several items represent responsiveness (e.g., "Listened attentively when I talked to him/her"; "Been respectful of my opinions and perspectives"; "Noticed when I was upset or down"), which is essential for meeting a partner's needs (Reis et al., 2004; Reis & Gable, 2015). Some items represent behaviors that are likely to contribute to the partner's sense of positive regard (e.g., "Complimented me," "Told me that he/she appreciated me," "Told me that he/she loves me"), which is important for relationship maintenance (e.g., Murray et al., 2000, 2003). Some items represent behaviors that promote emotional intimacy (e.g., "Shared things that were on his/her mind with me," "Had engaging conversations with me," "Spent quality romantic time with me"), whereas other items represent behaviors that promote physical intimacy (e.g., "Been physically affectionate with me," "Expressed sexual interest in me," "Been perceptive of my sexual needs"), both of which are highly rewarding and predictive of relationship quality (e.g., Girme et al., 2014; Jakubiak & Feeney, 2017; Muise & Impett, 2015; Muise, Schimmack, et al., 2016; Sprecher & Hendrick, 2004). Finally, some items represent engagement in self-expanding activities (e.g., "Been willing to try new things with me"; "Arranged fun things for us to do together"), which are important for maintaining passion in long-term relationships (Aron et al., 2000).

Study 1

Who fares better in their relationships—those who expect their partners to engage in these behaviors a great deal (as suggested by the perceptual, behavioral, construction, and reflection models), or

Table 1

Final Positive Relationship Behavior Items Generated From Pilot Research	Final Positive	Relationship	Behavior	Items	Generated	From	Pilot	Research
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Positive Relationship Behaviors Scale	Factor loading	Corrected item-total correlation	Mean (variance)	Mean desirability score (7-point scale)
Listened attentively when I talked to him/her	.71	.71	5.45 (2.40)	6.28
Kept me informed about upcoming plans	.74	.74	5.43 (2.79)	6.04
Done the chores he/she said that he/she would do	.59	.59	5.15 (3.26)	6.13
Spent quality romantic time with me	.84	.80	4.99 (4.16)	6.23
Been respectful of my opinions and perspectives	.75	.75	5.64 (2.37)	6.38
Told me that he/she appreciates me	.68	.67	5.23 (3.60)	6.22
Complimented me	.78	.76	5.51 (3.13)	6.03
Noticed when I was upset or down	.69	.68	5.33 (2.98)	6.10
Been physically affectionate with me	.83	.79	5.43 (3.65)	6.22
Shown concern for my feelings and emotions	.80	.80	5.60 (2.38)	6.25
Remembered important or meaningful things that I told him/her	.68	.68	5.38 (2.75)	6.25
Been perceptive of my sexual needs	.80	.74	4.88 (4.42)	6.21
Carved out time for us to spend together	.74	.73	5.16 (3.82)	6.06
Shown support for my interests or projects	.72	.72	5.44 (2.73)	6.06
Been willing to try new things with me	.73	.72	4.73 (3.91)	5.99
Had engaging conversations with me	.73	.73	5.64 (2.52)	6.26
Expressed sexual interest in me	.68	.63	5.68 (3.29)	6.31
Arranged fun things for us to do together	.68	.66	4.60 (4.49)	5.95
Shared things that were on his/her mind with me	.67	.66	5.61 (2.77)	6.21
Made an effort to clean up after him/herself	.49	.51	5.29 (2.89)	6.04
Told me that he/she loves me	.60	.57	5.97 (2.85)	6.26

those who expect little (as suggested by the suffocation model of marriage)?

None of the present constructs of interest (i.e., expectations of behaviors, perceptions of behaviors, the partner's reports of their behaviors, and relationship quality) can be assumed to be a stable variable, nor should these variables be expected to follow linear trajectories over time. Every romantic relationship faces good days and bad days, and people put more or less effort into their relationships and expect more or less of their partners depending on the circumstances. Each relevant variable, then, likely forms a wave pattern as it ebbs and flows over time (see Arriaga, 2001 for discussion). How do these wave patterns mutually influence each other, pushing and pulling each other across time? In this study, we address this question head-on by adopting a dynamical systems approach. Specifically, we assume not only that variables fluctuate over time, but also that those cyclical changes are meaningful and can (and should) be modeled. Within a dynamical systems framework, each construct of interest is simultaneously treated as both a potential predictor and a potential outcome variable. This approach allows us to test the outlined competing models regarding partner expectations (e.g., high expectations drive positive vs. negative changes in relationship quality, high relationship quality drives positive changes in expectations) within a single cross-lagged panel model.

In Study 1, we recruited people in romantic relationships online through Mechanical Turk. Participants each completed two surveys, both reporting on perceptions of their partner's positive relationship behaviors, their expectations of their partner's positive behaviors, and their current relationship quality. Participants completed their surveys 1 week apart (rating their partner's behaviors last week vs. next week). We used cross-lagged panel models, informed by dynamical systems, to model how perceived behaviors, expected behaviors, and relationship quality mutually influence one another over time.

Method

Participants

We recruited U.S. residents in romantic relationships online via Mechanical Turk in 2012-2013, in four separate samples that were later combined for the purposes of the current project.² Those who completed the Time 1 questionnaire were contacted 1 week later and invited to complete the second part of the study. A total of 671 participants completed the Time 1 questionnaire, and 569 participants completed the Time 2 questionnaire for a compliance rate of 85%. Two participants were excluded at Time 1 because they did not provide contact information for the second part of the study, and 51 participants were excluded at Time 1 because they had participated in one of our related online studies. Nine additional participants were excluded at Time 2 because they completed the follow-up too late (2 weeks or more following the Time 1 questionnaire). The final sample of 517 participants (197 men, 315 women, three preferred not to say), with an average age of 31 years (range = 18-68 years), and an average relationship length of 5 years (range = 1 month-43years). Participants completed the Time 1 and Time 2 questionnaires an average of 7.26 days apart (range = 6-13 days, Mdn = 7 days, SD = 1.02). We conducted a sensitivity analysis in G*Power (Faul et al., 2007) examining the R^2 increase of a single predictor in a linear regression model with five predictors. Results suggest that our current sample size allows us to detect with 80% power effects that are small in magnitude ($f^2 = .015$).

² We also had access to an undergraduate sample (N = 101) who completed the same measures 2 weeks apart. However, given the difference in time between surveys, the relatively small *N*, and the high attrition rate within this subsample (53%), we chose to exclude them from the analyses. The pattern of results remains unchanged when this subsample is included.

Procedure

Positive Relationship Behaviors. We measured positive relationship behaviors using the final version of the Positive Relationship Behaviors Scale (see Table 1, pilot research). Participants first rated how frequently they perceived their partners performed each of the 21 positive relationship behaviors during the previous week (2 weeks for the undergraduate sample) on a scale from 1 (*not at all*) to 7 (*very much*). Then, they rated how many positive relationship behaviors they expected their partners would perform during the upcoming week (2 weeks for the undergraduate sample). These measures were completed at Time 1 (perceived behaviors $\alpha = .96$, expected behaviors $\alpha = .97$) and at Time 2 (perceived behaviors $\alpha = .97$, expected behaviors $\alpha = .98$).

Relationship Quality. We measured four separate indicators of relationship quality that we deemed to be most relevant to the current hypotheses. Participants first completed the commitment and satisfaction subscales of the Perceived Relationship Quality Components Questionnaire (Fletcher et al., 2000). We used state versions of these scales to capture temporary fluctuations in satisfaction and commitment (DeWall et al., 2011): Participants were asked to report on how they felt about their relationship "right now," and "at this moment" was added to the beginning of each item. Three items captured state satisfaction (e.g., "At this moment, how happy are you with your relationship?" Time 1 α = .97; Time 2 α = .97), and three items captured state commitment (e.g., "At this moment, how dedicated are you to this relationship?" Time 1 α = .96; Time 2 α = .97). We also adapted measures (see Joel et al., 2013) to capture participants' current feelings of gratitude for their romantic partner (items originally selected from Gordon & Chen, 2010; Gordon et al., 2012), as well as feelings of trust in their romantic partner (items originally selected from Rempel et al., 1985). Three items captured gratitude (e.g., "I feel very lucky to have my partner in my life," Time 1 α = .90; Time 2 α = .92), and three items captured *trust* (e.g., "I can count on my partner to be concerned about my welfare," Time $1 \alpha = .89$; Time $2 \alpha = .92$). All relationship quality measures were completed on a 7-point scale (1 = completely disagree, 7 =completely agree).

Results

Analytic Strategy

We conducted cross-lagged panel models in which each construct of interest—expected behaviors, perceived behaviors, and relationship quality—was modeled simultaneously as a predictor and as an outcome variable. We conducted one such model for each relationship quality indicator—satisfaction, commitment, gratitude, and trust—for four models in total.

Time 1 predictors were each grand-mean centered. For each model, the data set was restructured such that the three Time 2 outcome measures—perceived behaviors, expected behaviors, and the relationship quality indicator of interest—were combined into a single dependent variable (DV) column. Thus, each participant had three rows: one for perceived behaviors at Time 2, one for expected behaviors at Time 2, and one for relationship quality at Time 2. Two dummy columns were added to indicate which row corresponded to which DV. Each of the four relationship quality models was conducted three times—once to examine the effects predicting each

dependent measure (i.e., expected, perceived, relationship quality)—with the dummy variables recoded each time so that two "0" values represented a different default column of interest. For example, the first model examined how perceived behaviors, expected behaviors, and satisfaction predicted change in one another over time. In the version of this model in which the dummy variables were coded as 1 = perceived behaviors and 1 = expected behaviors, the main effects represent the effects of each predictor on satisfaction at Time 2.

Each model was conducted using the lme4 package in R (Bates et al., 2015). We used mixed models to account for the fact that each participant had three data points: one for each DV. Each model had a total of 11 predictors: two dummy columns, three Time 1 predictors (perceived behaviors at Time 1, expected behaviors at Time 1, and relationship quality at Time 1), and their interaction terms. For example, the formula for the satisfaction model was as follows:

$$\begin{split} T_2 DV &\sim T_1 \text{perc} + T_1 \text{expected} + T_1 \text{sat} + DC1 + DC2 \\ &+ T_1 \text{perc} \times DC1 + T_1 \text{expected} \times DC1 \\ &+ T_1 \text{sat} \times DC1 + T_1 \text{perc} \times DC2 + T_1 \text{expected} \times DC2 \\ &+ T_1 \text{sat} \times DC2 + (1|\text{participant}) + \epsilon \end{split}$$

where "DV" represents either perceived behaviors, expected behaviors, or satisfaction at Time 2, "DC" represents a dummy column indicating the presence or absence of a particular DV, "perc" represents perceived behaviors, "expected" represents expected behaviors, and "sat" represents satisfaction.

Cross-Lagged Panel Results

Results of all four models can be seen in Table 2. The diagonal values (bolded) represent the effect of a given variable on itself (e.g., T_1 satisfaction predicting T_2 satisfaction). These values can be interpreted as the stability of a given variable over time, that is, how quickly the variable ebbs and flows over time. A b of 1 would indicate perfect stability from week to week, whereas a b of 0 would indicate no stability. The off-diagonal values (not bolded) represent the effect of a given variable at Time 1 on a different variable at Time 2 (e.g., T_1 satisfaction predicting T_2 perceived behaviors). These values can be interpreted as the extent to which the first variable drives changes in the second variable from week to week. Notably, because all variables are included in the model simultaneously, these off-diagonal values represent the unique directional effects that one variable exerts on the other, controlling for the other predictors. A visual depiction of the evidence for versus against the hypothesized theoretical models can be seen in Figure 5 (for simplicity, only significant paths of theoretical interest are presented).

The Role of Expected Positive Behaviors. When participants expected more positive relationship behaviors from their partners, they subsequently perceived that their partners had indeed performed more behaviors that week compared to participants who had expected less from their partners, consistent with the perceptual and behavioral confirmation models. However, expected positive behaviors were unassociated with changes in any of the four indicators of relationship quality, contrary to the construction model. Expected partner positive behaviors were also relatively stable from week to week (*bs* from .38 to .43), suggesting that people tended to expect similar levels of effort from their partners from 1 week to the next.

Table 2	
Study 1	Lagged Panel Results

		Perceived partner behaviors (T ²)			xpected part behaviors (T		Relationship quality (T ²)			
Predictor	b	SE	р	b	SE	р	b	SE	р	
Model 1										
Perceived partner behaviors (T ¹)	.31	.13	.02	.33	.13	.01	.18	.13	.16	
Expected partner behaviors (T^1)	.40	.13	.002	.38	.13	.003	.09	.12	.46	
Satisfaction (T^1)	.11	.06	.06	.20	.06	.001	.50	.06	<.001	
Model 2										
Perceived partner behaviors (T ¹)	.39	.13	.002	.43	.13	.001	.08	.10	.42	
Expected partner behaviors (T^1)	.44	.12	<.001	.43	.12	.001	.14	.10	.15	
Commitment (T ¹)	03	.06	.61	.02	.06	.78	.58	.05	<.001	
Model 3										
Perceived partner behaviors (T ¹)	.36	.13	.006	.37	.13	.006	.08	.13	.54	
Expected partner behaviors (T^1)	.43	.13	.001	.42	.13	.001	.14	.13	.28	
Gratitude (T ¹)	.02	.06	.71	.12	.06	.05	.59	.06	<.001	
Model 4										
Perceived partner behaviors (T ¹)	.32	.13	.02	.37	.13	.005	.18	.13	.19	
Expected partner behaviors (T^1)	.41	.13	.001	.40	.13	.002	.02	.13	.85	
Trust (T^1)	.13	.07	.06	.15	.07	.02	.64	.07	<.001	

Note. SE = standard error. Variables predicting themselves are bolded.

The Role of Perceived Positive Behaviors. When participants perceived that their partners had performed more positive behaviors the previous week, they expected more behaviors from their partners the following week. However, perceptions of more positive behaviors from the partner were unassociated with changes in any of the four indicators of relationship quality. Perceptions of the partner's behaviors were moderately stable from week to week (*bs* from .31 to .39).

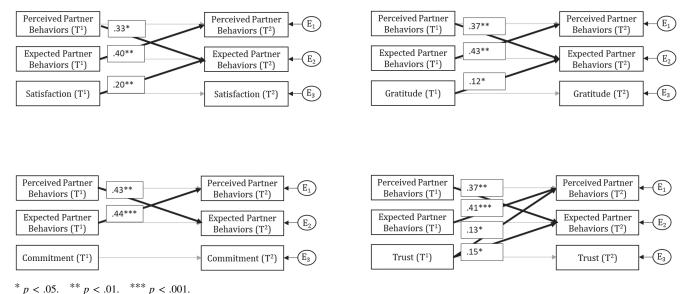
The Role of Relationship Quality. Three of the four relationship quality indicators (satisfaction, gratitude, and trust) predicted positive changes in expected behaviors from week to week. That is, when participants felt more satisfied, grateful, and trusting of their partners, they subsequently expected more positive relationship enhancing behaviors from their partners, consistent with the reflection model. Satisfaction and trust also marginally predicted positive changes in perceived behaviors. Relationship quality was highly stable from week to week (bs > .5).

Expectations as a Potential Moderator

Several prominent relationship theories assert that people evaluate their relationships relative to a set of internal standards (e.g., Finkel et al., 2015; Fletcher & Simpson, 2000; Thibaut & Kelley, 1959). These models suggest that expectations may operate as an important moderator of the association between perceived relationship behaviors and relationship quality. That is, high expectations

Figure 5

Mutual Influence of Expected Partner Behaviors, Perceived Partner Behaviors, and Relationship Quality From Week to Week in Study 1



may be beneficial when partners are able to meet those expectations, but detrimental when partners fall short of them (Finkel et al., 2014, 2015). To test this idea, we conducted each lagged panel model a second time. In these modified models, perceived behaviors at Time 2 were removed as a dependent measure, and perceived behaviors at Time 1 were replaced with perceived behaviors at Time 2 as a predictor. Further, we added an interaction term between expected behaviors at Time 1 and perceived behaviors at Time 2 predicting relationship quality.

Expectations about the partner's behaviors did not moderate the impact of perceived behaviors on relationship satisfaction (b = -.01, SE = .02, p = .34), gratitude (b = -.02, SE = .02, p = .28), or trust (b = -.02, SE = .02, p = .10). Expectations did significantly moderate the impact of perceived behaviors on relationship commitment (b = -.03, SE = .02, p = .04). Simple effects tests conducted at one standard deviation above versus below the mean (Aiken & West, 1991) showed that, in the context of this model, expectations predicted negative changes in commitment regardless of whether perceived behaviors the following week were high or low, p < .001.

Discussion

The goal of Study 1 was to examine how expectations about a romantic partner's positive relationship behaviors, perceptions of the partner's behaviors, and relationship quality mutually influence one another from week to week. Using a sample of 517 participants in romantic relationships, we conducted four cross-lagged panel models examining the associations between behavioral expectations, behavioral perceptions, and four different indicators of relationship quality. Behavioral expectations predicted changes in behavioral perceptions from week to week in all models tested. That is, the more positive relationship behaviors people expected from their partners over the next week, the more behaviors people perceived their partners to have performed during those weeks, consistent with both the perceptual and behavioral confirmation models. Further, three out of four of the relationship quality indicators tested predicted changes in expectations, supporting the reflection model. When people felt more satisfied with their relationships, grateful for their partners, and trusting of their partners, they subsequently tended to expect more positive relationship behaviors from their partners (this effect did not extend to feelings of commitment). However, neither expected nor perceived behaviors fed back to influence relationship quality in any of the models, failing to support the construction model. That is, people's perceptions of relationship quality (satisfaction, commitment, trust, and gratitude) did not change week to week as a function of either how many behaviors they either expected or perceived their partners to make. Further, expected behaviors did not generally moderate the impact of perceived behaviors on relationship quality from week to week, which is not consistent with theoretical assertions (e.g., suffocation model, ideal standards model) that high expectations should be beneficial specifically when they are met.

Overall, these results are consistent with the perceptual and behavioral confirmation hypotheses, both of which posit that people who held higher expectations of their partners 1 week should in turn perceive greater effort from their partners the next week. The results are also consistent with a reflection model of relationship quality, whereby people's expectations about their partners reflect, rather than shape, their current relationship quality. We did not find any support for a construction model of relationship quality: relationship expectations did not predict positive changes in relationship quality. We also did not find support for the suffocation model: the impact of Relationship expectations on relationship quality did not depend on whether those expectations were perceived to have been met.

Study 2

The results of Study 1 suggest that expectations shape perceptions of a partner's positive relationship behaviors. Study 2 was a replication and extension of Study 1, designed to probe the robustness of this effect in two key ways. First, does the effect extend to particularly concrete behaviors? Although some of the items used in Study 1 were highly observable (e.g., "told me she loves me"); others were arguably more subjective (e.g., "showed concern"). We further revised our relationship behaviors list in Study 2 to ensure that it included *only* concrete, observable behaviors. Second, is the effect unique to positive behaviors, or does it extend to negative behaviors as well? A goal of Study 2 was to capture and examine the entire spectrum of relationship behaviors.

To test these questions, we piloted a revised list of particularly concrete positive and negative relationship behaviors to use in Study 2 (see Supplemental Materials). We then administered these items to a sample of individuals in romantic relationships once per week for 4 weeks. We again used a dynamical systems approach to examine how relationship expectations, relationship perceptions, and relationship quality shaped each other from week to week. The design and analyses were preregistered on October 26, 2021 (https://osf.io/ jbknq).

Method

Participants

Participants in romantic relationships were recruited from social media (e.g., Reddit, Twitter, Instagram), Prolific, and Western University's mass email recruitment listserv. Participation was open to those of all sexual orientations. Participants were emailed a survey each week for up to 4 weeks, and were compensated \$5.00 CAD/\$4.00 USD/£3.00 for each survey completed, plus a bonus of \$4.00 CAD/\$3.00 USD/£2.00 for completing all four surveys, for a maximum compensation of \$24.00 CAD/\$19.00 USD/£14.00. Recruitment began on January 10, 2022 and ceased on February 15, 2022, at which point a total of 495 participants had completed the Time 1 questionnaire. Of those participants, seven were excluded because they were not in serious relationships.

The final sample included 488 participants (149 men, 315 women, six nonbinary, 18 preferred not to say) with an average age of 25 years (range = 18–59 years), and an average relationship length of 2.69 years (range = 2 weeks–14 years). Participants completed an average of 3.27 out of four waves, with the modal participant completing all four waves. We conducted a sensitivity analysis in G*Power (Faul et al., 2007) examining the R^2 increase of a single predictor in a linear regression model with five predictors. Results suggest that our current sample size allows us to detect with 80% power effects that are small in magnitude ($f^2 = .027$).

Procedure

Participants completed a survey each week for 4 weeks. Each survey was nearly identical, with the exception of baseline demographic measures included at Week 1 only, and some additional items included for other research purposes at Week 2 only. Relevant measures are described below, with reliabilities shown for Week 1 (baseline) data.

Relationship Behaviors. We modified the Positive Relationship Behaviors Scale from Study 1 to include concrete positive behaviors (e.g., "Showed support for my interests or projects") and negative behaviors (e.g., "Expressed suspicion or distrust in me"). We piloted this scale among 506 participants recruited through Mechanical Turk; please see Supplemental Document. The resulting scale was presented to participants in the current sample on a scale from 1 (*not at all*) to 7 (*very much*).

Participants rated how frequently they perceived their partners performed each of the 18 *positive relationship behaviors* ($\alpha = .93$) and 15 *negative relationship behaviors* ($\alpha = .92$) during the previous week. They also rated how many of those same behaviors they expected their partners would perform during the upcoming week, capturing their *positive expectations* ($\alpha = .92$) and *negative expectations* ($\alpha = .93$). Please see Table 3 for the exploratory factor loadings, descriptives, and wording of the behaviors version of the scale as measured on Week 1 (baseline). **Relationship Quality.** Each week, we administered the same four indicators of relationship quality described in Study 1. These included three items capturing *state satisfaction* (adapted from Fletcher et al., 2000; $\alpha = 94$), three items capturing *state commitment* (adapted from Fletcher et al., 2000; Week 1 $\alpha = .95$), three items capturing *gratitude* (adapted from Gordon & Chen, 2010; Week 1 $\alpha = .88$), and three items captured *trust* (adapted from Rempel et al., 1985; Week 1 $\alpha = .87$). All relationship quality measures were completed on a 7-point scale (1 = *completely disagree*, 7 = *completely agree*).

Perceptions and expectations regarding own behaviors were also measured each week for subsidiary purposes. Items were organized each week into five blocks: own behaviors, partner's behaviors, expectations for the self, expectations for the partner, and relationship quality measures. These blocks were presented in a randomized order for each participant.

Results

Cross-Lagged Panel Results

We employed the same analytic strategy described in Study 1. Each construct of interest—expected behaviors, perceived behaviors, and relationship quality—was modeled simultaneously as a predictor and as an outcome variable. We conducted one such model

Table 3

Modified Relationship Behavior Scale Loadings and Descriptives

Modified Relationship Behavior Scale	Positive factor	Negative factor	М	SD
1. Told me that he/she appreciates me	.61		5.62	1.68
2. Complimented me	.64		5.88	1.46
3. Been physically affectionate with me	.60		5.70	1.82
4. Been willing to try new things with me	.66		5.38	1.72
5. Expressed sexual interest in me	.63		5.79	1.67
6. Arranged fun things for us to do together	.71		4.93	1.91
7. Made an effort to clean up after him/herself	.60		5.48	1.58
8. Initiated sexual activities with me	.60		5.02	2.12
9. Done something nice for me sexually	.66		5.61	1.78
10. Told me how much I mean to him/her	.63		4.23	2.18
11. Talked to me about issues in our relationship	.55		5.01	1.89
12. Took care of things so I could relax	.72		4.96	1.81
13. Made an effort to look good for me	.68		5.29	1.73
14. Helped me solve a problem	.70		4.81	1.99
15. Initiated discussions with me to talk things over	.67		5.12	1.91
16. Helped me without being asked	.74		5.12	1.91
17. Made an effort to spend time and do things with me	.65		5.84	1.51
18. Did things to protect me from stress	.70		5.13	1.89
19. Said something that hurt my feelings		.67	2.41	1.75
20. Demanded too much of my time or energy		.72	2.12	1.70
21. Expressed suspicion or distrust in me		.81	1.68	1.52
22. Avoided sexual activities with me		.67	1.94	1.72
23. Hid his/her feelings from me		.59	2.21	1.60
24. Been distracted or disengaged when I tried to talk to him/her		.56	2.54	1.70
25. Teased me in a mean, nonjoking manner		.68	1.76	1.44
26. Refused to consider my point of view on an issue		.72	1.88	1.42
27. Been flirty with someone else		.74	1.46	1.20
28. Neglected chores that they said they would do		.56	2.01	1.49
29. Neglected my sexual needs		.62	1.91	1.56
30. Been too busy to spend quality time with me		.53	2.11	1.55
31. Been unwilling to discuss issues with me		.72	1.82	1.45
32. Done small things that irritate me		.57	2.41	1.58
33. Bored me with mundane stories		.68	1.88	1.46

Note. All cross-loadings were smaller than .30.

for each relationship quality indicator: satisfaction, commitment, gratitude, and trust. We conducted these four models first with positive relationship behaviors, and then with negative relationship behaviors, for eight cross-lagged panel models in total. Analyses were conducted using the lme4 package in R (Bates et al., 2015). We conducted three-level models to account for the nested structure of the data (multiple dependent measures as well as multiple waves of data). Results of all models examining positive and negative relationship behaviors can be seen in Tables 4 and 5, respectively. A visual depiction of the models can be seen in Figures 6 and 7.

The Role of Expected Behaviors. Expectations shaped perceptions similarly for both positive and negative behaviors. On weeks when participants expected more positive behaviors, they perceived more positive behaviors from their partners the following week. Similarly, when participants expected more negative behaviors, they perceived more negative behaviors from their partners the following week. These effects are consistent with the perceptual and behavioral confirmation models, as well as with the results of Study 1. Somewhat consistent with Study 1 and contrary to the construction model, expectations predicted changes in relationship quality in only two of the eight models tested. When people expected more positive behaviors from their partners, they experienced higher commitment the following week. Further, when people expected more negative behaviors from their partners, they experienced lower trust the following week. Expected partner behaviors were highly stable from week to week (bs from .49 to .52).

The Role of Perceived Behaviors. Perceptions also fed back to predict expectations. When people perceived that their partners had performed more positive behaviors or fewer negative behaviors 1 week, they expected more positive and or negative behaviors, respectively, the subsequent week. As with expectations, perceived behaviors only predicted changes in relationship quality in two of the eight models tested. When people perceived more positive behaviors from their partners, they experienced higher trust the following week. Further, when people perceived more negative behaviors from their partners, they experienced lower gratitude the

following week. Perceptions of the partner's behaviors were quite stable from week to week (*bs* from .39 to .49).

The Role of Relationship Quality. None of the four relationship quality indicators (satisfaction, commitment, gratitude, and trust) predicted significant changes in either expected (counter to the reflection model) or perceived behaviors from week to week, whether positive or negative. Relationship quality was highly stable from week to week (*bs* from .63 to .76).

Expectations as a Potential Moderator

As in Study 1, we next tested whether expectations moderated the association between perceived partner behaviors and relationship quality (as implied by the suffocation model). In these modified lagged panel models, this week's perceived behaviors were removed as a dependent measure, and last week's perceived behaviors were replaced with this week's perceived behaviors as a predictor. Further, we added an interaction term between last week's expected behaviors and this week's perceived behaviors predicting this week's relationship quality. We tested these models for both positive and negative behaviors.

The results examining positive behaviors were highly similar to those of Study 1. Expectations about the partner's positive behaviors did not significantly moderate the impact of perceived positive behaviors on relationship satisfaction (b = -.02, SE = .02, p =.12), gratitude (b = -.03, SE = .02, p = .08), or trust (b = -.03, SE =.02, p = .10). Expectations did significantly moderate the impact of perceived positive behaviors on relationship commitment (b = -.04, SE = .02, p = .03). However, simple effects tests indicated that results ran contrary to the suffocation model; if anything, higher expectations led to *lower* relationship commitment when perceptions of the partner's behaviors were high (b = -.15, SE = .04, p =.001) compared to low (b = -.02, SE = .04, p = .66).

A different story emerges when examining negative behaviors. Expectations about a partner's negative relationship behaviors moderated the impact of perceived negative behaviors on three out of four relationship quality indicators examined: satisfaction

Table 4

Study 2 Lagged Panel Results With Positive Relationship Behaviors

		Perceived partner behaviors (T ²)			Expected participation behaviors (Relationship quality (T ²)			
Predictor	b	SE	р	b	SE	р	b	SE	р	
Model 1										
Perceived partner behaviors (T ¹)	.41	.05	<.001	.36	.05	<.001	.06	.05	.24	
Expected partner behaviors (T^1)	45	.06	<.001	.50	.06	<.001	.06	.05	.25	
Satisfaction (T ¹)	.02	.04	.57	.03	.04	.47	.73	.04	<.001	
Model 2										
Perceived partner behaviors (T ¹)	.40	.05	<.001	.35	.05	<.001	05	.05	.35	
Expected partner behaviors (T^1)	.47	.05	<.001	.52	.05	<.001	.14	.05	.007	
Commitment (T ¹)	.06	.04	.10	.04	.04	.22	.68	.03	<.001	
Model 3										
Perceived partner behaviors (T ¹)	.39	.05	<.001	.34	.05	<.001	.09	.05	.07	
Expected partner behaviors (T^1)	.46	.05	<.001	.51	.05	<.001	.06	.05	.25	
Gratitude (T ¹)	.07	.04	.07	.06	.04	.08	.70	.04	<.001	
Model 4										
Perceived partner behaviors (T ¹)	.41	.05	<.001	.36	.05	<.001	.16	.05	.001	
Expected partner behaviors (T^1)	.46	.05	<.001	.49	.05	<.001	.00	.05	.996	
Trust (T^1)	.04	.04	.27	.06	.04	.12	.63	.04	<.001	

Note. SE = standard error. Variables predicting themselves are bolded.

Table 5				
Study 2 Lagged Pa	nel Results W	Vith Negative	Relationship	Behaviors

	Perceived partner behaviors (T ²)				pected part behaviors (T		Relationship quality (T ²)			
Predictor	b	SE	р	b	SE	р	b	SE	р	
Model 1										
Perceived partner behaviors (T ¹)	.47	.07	<.001	.36	.07	<.001	06	.07	.40	
Expected partner behaviors (T^1)	.39	.07	<.001	.52	.07	<.001	09	.07	.21	
Satisfaction (T ¹)	01	.03	.70	02	.03	.40	.76	.03	<.001	
Model 2										
Perceived partner behaviors (T ¹)	.47	.07	<.001	.36	.07	<.001	07	.07	.35	
Expected partner behaviors (T^1)	.39	.07	<.001	.51	.07	<.001	06	.07	.39	
Commitment (T^1)	02	.03	.41	05	.03	.07	.66	.03	<.001	
Model 3										
Perceived partner behaviors (T ¹)	.49	.07	<.001	.37	.07	<.001	17	.07	.01	
Expected partner behaviors (T^1)	.40	.07	<.001	.52	.07	<.001	.05	.07	.44	
Gratitude (T ¹)	.01	.03	.63	003	.03	.92	.76	.03	<.001	
Model 4										
Perceived partner behaviors (T ¹)	.47	.07	<.001	.36	.07	<.001	03	.07	.69	
Expected partner behaviors (T^1)	.39	.07	<.001	.52	.07	<.001	16	.07	.02	
Trust (T^1)	02	.03	.54	03	.03	.32	.67	.03	<.001	

Note. SE = standard error. Variables predicting themselves are bolded.

(b = .05, SE = .02, p = .01), appreciation (b = .07, SE = .02, p < .001), and trust (b = .06, SE = .02, p = .003). Only commitment was not significant (b = .01, SE = .02, p = .51). However, the simple effects show that results are not consistent with the suffocation model, or with one another. When people perceived that their partners had engaged in many negative behaviors this week, the link between last week's expectations of negative behaviors and this week's relationship quality was significant and positive (bs > .10, p < .05). That is, expecting *more* negative behaviors was associated with *greater* relationship quality, when those (negative) expectations were more strongly met. When people perceived that their partners had engaged in few negative behaviors, the link between expectations of negative behaviors of negative was significant set.

significantly positive for satisfaction (b = .15, SE = .06, p = .02) and not significant for appreciation or trust. Overall, these results are inconsistent with any of the theoretical models presented. They may be a statistical artifact driven by the inclusion of a "this week" variable as a predictor in the model. Further research is needed before these results can be interpreted with confidence.

Discussion

The goal of Study 2 was to examine whether the effects from Study 1 would extend to a sample using more time points, more concrete and observable items, and negative as well as positive relationship behaviors. Indeed, replicating Study 1, we found that behavioral

Figure 6

Mutual Influence of Expected Positive Behaviors, Perceived Positive Behaviors, and Relationship Quality From Week to Week in Study 2

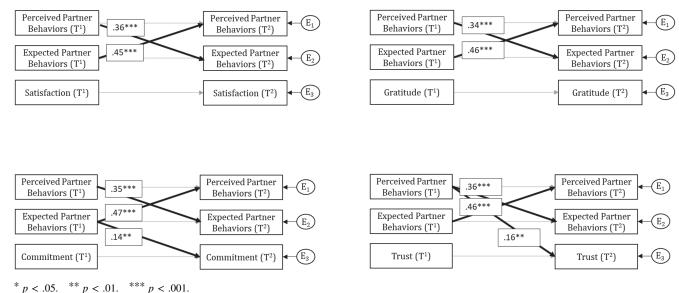
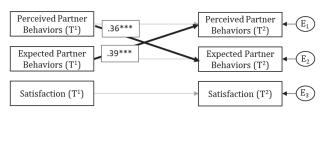
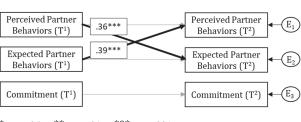
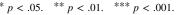


Figure 7

Mutual Influence of Expected Positive Behaviors, Perceived Negative Behaviors, and Relationship Quality From Week to Week in Study 2





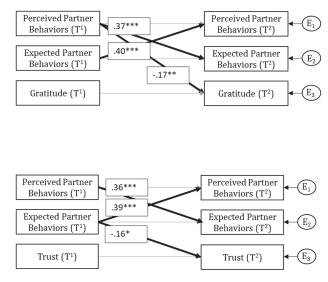


expectations predicted changes in behavioral perceptions in all eight models tested. The more positive behaviors and the fewer negative behaviors people expected from their partners over the next week, the more positive behaviors and fewer negative behaviors people perceived their partners to have performed that week, consistent with both the perceptual and behavioral confirmation models. However, unlike in Study 1, we did not find consistent support for the reflection model in Study 2: None of the relationship quality indicators predicted changes in expectations from week to week.

Expected and perceived behaviors each predicted changes in relationship quality in only two of the eight models tested, providing weak support for the construction model. That is, people's perceptions of relationship quality (satisfaction, commitment, trust, and gratitude) generally did not change week to week as a function of either how many positive or negative behaviors they either expected or perceived their partners to engage in. Finally, as in Study 1, we did not find support for the idea that high expectations are especially beneficial when they are met (e.g., consistent with the suffocation model or the ideal standards model). Overall, Studies 1 and 2 combined provide strong, consistent support for the perceptual and behavioral confirmation hypotheses, and relatively weak support for the remaining theoretical models.

Study 3

The results of both Studies 1 and 2 suggest that people's expectations can shape perceptions of the partner's behavior. What remains unclear from these studies is whether expectations drive changes in perceptions of the partner's positive relationship behaviors because the partner is striving to meet those expectations (behavioral confirmation), or because people are perceiving what they expect to perceive independent from the partner's actual behavior (perceptual confirmation). In Study 3, we recruited both members of each couple, allowing us to directly test these two competing hypotheses. We return to focusing exclusively on positive behaviors, as we suspect in relatively satisfied couples that behavioral confirmation processes will



be more salient for positive behaviors. If expectations of a partner's behaviors shape perceptions of their behaviors via behavioral confirmation, then we would expect the effect of expectations predicting perceptions to be mediated by the partner's own reports of their behavior. Alternatively, if expectations shape perceptions via perceptual confirmation, then we would expect the effect to hold above and beyond the partner's reports.

A second, related goal of Study 3 was to examine how accurately people perceive their partner's positive relationship behaviors from week to week. Behavioral confirmation and the suffocation model both assume a relatively high degree of accuracy and a low degree of bias in people's perceptions of their partner's efforts. The suffocation model suggests that people form an assessment of the partner's efforts that is at least somewhat independent from their expectations, and then compare the two to determine whether the partner's behavior has exceeded, met, or fallen short of one's expectations. Behavioral confirmation similarly supposes an accurate, unbiased perception of the partner's efforts: High expectations motivate more behaviors from the partner, which are in turn accurately perceived by the self. However, perceptual confirmation predicts that expectations shape perceptions of the partner's efforts in a biased fashion: People selectively perceive their partner's behaviors in a way that confirms their preexisting expectations. In the present study, we examined people's degree of both accuracy and bias in perceiving their partner's week-to-week relationship efforts using the truth and bias model of judgment (West & Kenny, 2011). The truth and bias model allows us to gauge whether individuals accurately perceive their partner's efforts, whether they tend to overestimate or underestimate their partner's efforts, and whether their judgments are influenced by their own efforts that week.

Method

Participants and Procedure

We recruited couples online through postings on websites such as craigslist.org and facebook.com. Couples were eligible to participate if they currently lived together, if they resided in either Canada or the United States, and if both members of the couple were at least 18 years of age. A research assistant contacted interested participants by phone to confirm eligibility. A total of 68 couples were initially recruited for the study. However, one or both members of ten of the couples withdrew from the study before completing any weekly surveys, and four couples were excluded because research assistants deduced from their timestamps on the online survey software that the same person was filling out the surveys for both members of the couple. The final sample consisted of 54 couples who had been together for an average of 3 years (range = 2 months–10 years, SD = 28.02 months). Three of the couples were same-sex couples: Each included two women. The remaining 51 couples each included one man and one woman. Participants were an average of 25 years old (range = 18–47 years; SD = 6.45).

A sensitivity analysis (conducted post hoc using Ackerman & Kenny, 2016) suggests that this sample of 54 dyads afforded us the ability to detect small to moderate actor and partner effects of r = .26 with 80% power; this estimate does not account for repeated assessments, and thus should be conservative.

Participants first completed a background questionnaire containing a variety of relational measures not included herein. Participants were then emailed a survey at 5 p.m. each evening for 15 consecutive days, beginning on the first Sunday following their completion of the background questionnaire. Each of the three questionnaires sent on a Sunday (Days 1, 8, and 15) contained a weekly survey in addition to the daily survey. The background and daily measures were collected for other research purposes; the present analyses use only measures collected at the weekly level. Compliance was high: 91% of participants completed all three weekly surveys, and 98% of individuals completed at least two weekly surveys. At the dyadic level, 80% of couples completed all six weekly surveys, and 93% of couples completed at least five weekly surveys. We compensated couples up to \$84 CAD each for their participation.

Weekly Measures

Participants completed the following measures at three weekly time points. Alphas reported are across time points.

Relationship Quality Measures. The same relationship quality measures reported in Study 1 were included in Study 3. Participants rated three items each measuring state satisfaction ($\alpha = .96$), state commitment ($\alpha = .90$), trust ($\alpha = .81$), and gratitude ($\alpha = .90$).³

Positive Relationship Behaviors. Next, positive relationship behaviors were measured with the same 21 items used in Study 1 (see Table 1). Each week, participants reported on their own behaviors the previous week ($\alpha = .95$), their partner's behaviors the previous week ($\alpha = .95$), their expectations for their own behaviors for the upcoming week ($\alpha = .97$), and their expectations for their partner's behaviors the upcoming week ($\alpha = .96$), in that order.

Results

APIM Data Structuring

We organized data at the weekly level such that each participant had a row of data for each weekly survey they completed. Lagged variables were created representing the previous week's reports of each variable, where applicable. Data were double-entered such that each participant had an "actor" version (their own reports), and a "partner" version (their partner's reports) of each variable of interest. For example, imagine that Brent and Angela participated in this study. Angela would have three rows of data, and her Week 2 row would include both actor (Angela's reports) and partner (Brent's reports) versions of each variable as reported on both this week (Week 2) and last week (Week 1). Brent's Week 2 row would contain the same data, but with his own reports as the actor variables and Angela's reports as the partner variables (i.e., person–period pairwise format; Kenny et al., 2006).

Cross-Lagged Actor-Partner Models

Analytic Strategy. We conducted cross-lagged panel models as in Studies 1 and 2, but with two key changes. First, perceptions of own behaviors were included in the models in addition to perceptions of the partner's behaviors, for a total of four constructs of interest instead of three (expected partner behaviors, perceived partner behaviors, perceived *own* behaviors, and relationship quality). Second, separate actor and partner versions of each variable were included for each construct of interest to account for the dyadic nature of the data. Again, each construct of interest was modeled simultaneously as a predictor and as an outcome variable. "Last week" versions were used as predictors (T_1) and "this week" versions were used as outcome variables (T_2). We conducted one model for each relationship quality indicator—satisfaction, commitment, gratitude, and trust—for four models in total.

We grand-mean centered predictors. We restructured data such that we combined the eight outcome measures-own behaviors, perceived partner behaviors, expected partner behaviors, and the relationship quality indicator of interest for both actor and partner-into a single dependent variable column (DV). Only rows from Weeks 2 and 3 were used, as Week 1 rows did not include "last week" predictor variables. Thus, each participant had up to 16 rows in total: one for each of the four outcome variables, each for both actor and partner, both at Week 2 and at Week 3. Seven dummy columns were created to indicate which row corresponded to which DV, as in Studies 1 and 2. Each model was conducted using the lme4 package in R, and accounted for the repeated and dyadic nature of the data. Each model had a total of 71 predictors: seven dummy columns, eight Time 1 predictors, plus each of the seven dummy columns multiplied by each of the eight Time 1 predictors. Because each participant is represented both as an actor and as a partner (with some missing data), the partner outcome effects are nearly identical to the actor outcome effects. For the sake of space, only the actor outcomes are displayed below. To generate these results, each model was conducted four times-once to examine the effects predicting each actor measure of interest-with the dummy variables recoded each time so that seven "0" values represented a different default column of interest.

Results. Results of the full models examining satisfaction, commitment, gratitude, and trust can be seen in Tables 6–9, respectively. Associations between key variables of interest for each model are depicted in Figure 8. Again, results were highly consistent across

³ Although not examined in the present article, participants also completed three items each capturing state investment, dissolution consideration, perceptions of the partner's investment, and perceptions of the partner's commitment, and five items capturing future investment intentions. See https://osf.io/dzn8r for a complete reporting of measures collected in each study.

Table 6	
Study 3 Lagged Panel Models	With Satisfaction

Own behaviors (T ² actor)								Expected partner behaviors (T ² actor)			Satisfaction (T ² actor)		
Predictor	b	SE	р	b	SE	р	b	SE	р	b	SE	р	
Own behaviors $(T^1 \text{ actor})$.61	.14	<.001	.18	.14	.21	.29	.14	.04	11	.14	.46	
Perceived partner behaviors (T ¹ actor)	50	.17	.003	15	.17	.37	31	.17	.07	08	.17	.65	
Expected partner behaviors (T ¹ actor)	.68	.16	<.001	.71	.16	<.001	.75	.16	<.001	.52	.16	.001	
Satisfaction (T ¹ actor)	.12	.07	.08	.14	.07	.04	.13	.07	.07	.43	.07	<.001	
Own behaviors (T^1 partner)	005	.14	.97	.12	.14	.41	.10	.14	.49	05	.14	.75	
Perceived partner behaviors (T ¹ partner)	30	.17	.08	34	.17	.04	35	.17	.04	29	.17	.09	
Expected partner behaviors (T ¹ partner)	.40	.16	.01	.31	.16	.05	.25	.16	.12	.24	.16	.12	
Satisfaction (T ¹ partner)	004	.07	.95	.04	.07	.54	.10	.07	.14	.13	.07	.05	

Note. SE = standard error. Variables predicting themselves are bolded.

models. The key finding from Studies 1 and 2 replicated across all Study 3 models: expected partner behaviors at Time 1 predicted positive changes in perceived partner behaviors at Time 2. That is, when people expected more behaviors from their partners, they subsequently perceived more behaviors from their partners the following week, consistent with the perceptual and behavioral confirmation models. However, unlike in Studies 1 and 2, this association did not emerge in the opposite direction: it was not the case that perceiving more behaviors from the partner 1 week drove higher expectations the following week.

Relationship quality indicators significantly predicted positive changes in perceived behaviors in two models (satisfaction and gratitude), and significantly predicted positive changes in expected behaviors in one model (gratitude), providing partial support for the reflection model. Further, expected behaviors, but not perceived behaviors, significantly predicted positive changes in three of the four relationship quality indicators. The more behaviors people expected from their partners on 1 week, the more satisfied, committed, and grateful they felt the next week, consistent with the construction model.

A key addition to Study 3, compared to Studies 1 and 2, is the inclusion of the partner's reports of their own behaviors. Partner reports did not predict changes in any key variables in any of the current models. When one partner reported engaging in more positive behaviors 1 week, the other partner did not subsequently perceive more positive behaviors, expect more positive behaviors,

or experience greater relationship quality the following week. However, expected behaviors did predict changes in the partner's own reported behaviors: the more behaviors a person expected from their partner 1 week, the more behaviors the partner reported performing the following week, consistent with the behavioral confirmation model.

One might consider reciprocity as a potential mechanism for the behavioral confirmation model. When Brent expects more of Angela, does he also do more for Angela, motivating Angela to do more for him in return? However, we did not find evidence for reciprocity in the present study. One partner's behaviors 1 week did not predict the other partner's behaviors the subsequent week. People who held higher expectations of their partners did tend to subsequently engage in more positive behaviors themselves, but this did not necessarily motivate the partner to reciprocate in kind.

Overall, the lagged panel analyses provided the strongest support for perceptual confirmation. We found that people who expected more from their partners subsequently perceived more behaviors from their partners, over and above how many behaviors the partner reported making that week.

Controlling for Partner's Own Behaviors at Time 2. One of the purposes of collecting partner reports in the present study was to be able to tease apart behavioral confirmation (expectations drive perceptions due to changes in actual behaviors from the partner) from perceptual confirmation (expectations drive perceptions independently of actual behaviors from the partner). In the models

Table 7 Study 3 Lagged Panel Models With Commitment

	Ov	Own behaviors $(T^2 \text{ actor})$			Perceived partner behaviors $(T^2 actor)$			viors (T		Commitment (T ² actor)			
Predictor	b	SE	р	b	SE	р	b	SE	р	b	SE	р	
Own behaviors (T ¹ actor)	.54	.15	<.001	.12	.15	.41	.22	.15	.15	.21	.15	.17	
Perceived partner behaviors (T ¹ actor)	41	.17	.01	03	.17	.86	17	.17	.30	27	.17	.11	
Expected partner behaviors $(T^1 \text{ actor})$.65	.16	<.001	.71	.16	<.001	.76	.16	<.001	.47	.16	.004	
Commitment (T ¹ actor)	.10	.04	.04	.06	.05	.19	.07	.05	.18	.31	.05	<.001	
Own behaviors (T ¹ partner)	03	.15	.84	.05	.15	.73	.02	.12	.86	08	.15	.61	
Perceived partner behaviors (T ¹ partner)	25	.17	.14	25	.17	.13	22	.17	.18	28	.17	.09	
Expected partner behaviors (T ¹ partner)	.37	.16	.02	.29	.16	.07	.24	.13	.05	.42	.16	.009	
Commitment (T ¹ partner)	.02	.05	.65	.05	.04	.30	.05	.05	.29	.13	.05	.01	

Note. SE = standard error. Variables predicting themselves are bolded.

Table 8	
Study 3 Lagged Panel Models With Gratitud	le

Predictor	Own behaviors (T ² actor)			Perceived partner behaviors (T ² actor)			Expected partner behaviors (T ² actor)			Gratitude $(T^2 \text{ actor})$		
	b	SE	р	b	SE	р	b	SE	р	b	SE	р
Own behaviors (T ¹ actor)	.57	.13	<.001	.10	.13	.44	.21	.13	.11	.13	.13	.32
Perceived partner behaviors (T ¹ actor)	44	.15	.003	08	.15	.60	20	.15	.17	24	.15	.11
Expected partner behaviors (T ¹ actor)	.63	.15	<.001	.66	.15	<.001	.71	.15	<.001	.30	.15	.04
Gratitude $(T^1 \text{ actor})$.14	.07	.03	.19	.07	.003	.16	.07	.02	.66	.07	<.001
Own behaviors (T ¹ partner)	03	.13	.80	.09	.13	.48	.06	.13	.67	.12	.13	.37
Perceived partner behaviors (T ¹ partner)	23	.15	.13	21	.15	.15	20	.15	.18	22	.15	.15
Expected partner behaviors (T ¹ partner)	.36	.15	.02	.28	.15	.05	.22	.15	.14	.24	.15	.11
Gratitude (T ¹ partner)	.02	.07	.78	01	.07	.88	.04	.07	.51	01	.07	.86

Note. SE = standard error. Variables predicting themselves are bolded.

reported in Figure 8, we included the partner's own reports of their behaviors at Time 1 as a predictor and at Time 2 as an outcome. However, a more direct test of the behavioral versus perceptual confirmation hypotheses would include Time 2 partner's reports as a *predictor*, and therefore a control variable. That model would directly test whether expected partner behaviors at Time 1 drive changes in perceived partner behaviors at Time 2 independently from the partner's actual behaviors at Time 2.

To test this, we conducted a follow-up cross-lagged model in which the partner's behaviors at Time 2 was included as a predictor rather than as an outcome. We restructured the data to create a dependent measure column comprised of only six dependent measures, rather than eight (actor's own behaviors and partner's own behaviors at Time 2 were removed as outcome measures, because partner's own behaviors at Time 2 were already included as a predictor). We conducted analyses with seven key predictors included in the model: expected partner behaviors, perceived partner behaviors, and satisfaction at Time 1 each for actor and for partner, plus partner's own behaviors at Time 2. Results revealed that actor's expected partner behaviors at Time 1 predicted actor's perceived partner behaviors at Time 2 even after controlling for partner's own behaviors at Time 2 (b = .66, SE = .16, p < .001). Partner's own behaviors at Time 2 also predicted actor's perceived partner behaviors at Time 2 (b = .24, SE = .11, p = .03). Replacing satisfaction with each of the other three relationship quality indicators (commitment, gratitude, and trust) did not change this pattern of results.

Table 9	
Study 3 Lagged Panel Mod	dels With Trust

These results provide stronger support for the perceptual confirmation hypothesis than the behavioral confirmation hypothesis. Although higher expectations drove positive changes in the partner's actual behaviors, the partner's behaviors did not explain why people who expected more behaviors subsequently perceived more behaviors. Rather, expected behaviors drove changes in perceived partner behaviors above and beyond the partner's actual behaviors.

Moderations. Does the impact of holding high expectations depend on whether or not the partner is perceived to have met them (as implied by the suffocation model)? We again tested for moderations between perceived and expected behaviors predicting changes in relationship quality. The six-variable lagged panel models described above were conducted a second time, with an added interaction term between perceived behaviors and expected behaviors predicting relationship quality. Expectations about the partner's behaviors did not moderate the impact of perceived behaviors on relationship satisfaction (b = -.07, SE = .04, p = .11), gratitude (b = -.06, SE = .04, p = .13), or trust (b = .04, SE = .04, p = .04).31). Expected behaviors did moderate the impact of perceived behaviors on commitment (b = -.11, SE = .05, p = .02). However, simple slopes showed that this interaction effect was in the opposite direction of what would be predicted by relevant theory, such that expectations predicted significantly higher commitment specifically when perceived behaviors were low.

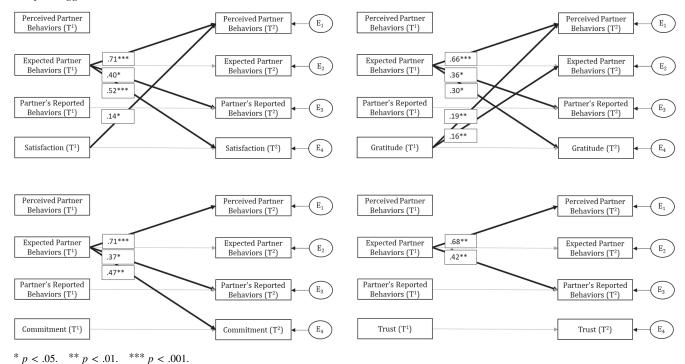
Daily Analyses. This study also included daily reports of relationship behaviors, which arguably capture relationship perceptions at

	Own behaviors $(T^2 \text{ actor})$			Perceived partner behaviors (T ² actor)			Expected partner behaviors (T ² actor)			$\begin{array}{c} \text{Trust} \\ (\text{T}^2 \text{ actor}) \end{array}$		
Predictor	b	SE	р	b	SE	р	b	SE	р	b	SE	р
Own behaviors $(T^1 \text{ actor})$.61	.12	<.001	.17	.12	.17	.27	.13	.03	.17	.15	.17
Perceived partner behaviors (T ¹ actor)	44	.14	.002	08	.14	.56	23	.14	.11	27	.14	.06
Expected partner behaviors (T ¹ actor)	.67	.15	<.001	.68	.15	<.001	.72	.15	<.001	.24	.15	.10
Trust (T ¹ actor)	.06	.07	.39	.13	.07	.07	.14	.07	.07	.62	.07	<.001
Own behaviors (T ¹ partner)	04	.12	.73	.08	.12	.54	.06	.12	.64	.21	.12	.09
Perceived partner behaviors (T ¹ partner)	26	.14	.07	28	.14	.05	25	.14	.08	17	.14	.24
Expected partner behaviors (T ¹ partner)	.42	.15	.005	.32	.15	.03	.27	.15	.07	13	.14	.37
Trust (T ¹ partner)	.01	.07	.86	.05	.07	.54	.05	.07	.47	.15	.07	.04

Note. SE = standard error. Variables predicting themselves are bolded.

Figure 8

Study 3 Lagged Panel Models



an even more concrete level than the weekly reports. At the suggestion of a reviewer, we conducted a version of our cross-lagged panel models in which the weekly relationship behavior reports were replaced with daily reports, aggregated across each week. However, because there were only 2 weeks of daily data rather than three, this approach reduced the available datapoints by one third (the analyses were conducted at the weekly level because expectations were not captured at the daily level). These analyses produced almost entirely null effects, which we suspect were due to low power. In the future, researchers interested in daily behaviors should measure all key constructs at the daily level so that daily variation can be appropriately modeled.

Alternative Explanation: Accuracy in Perceptions

The suffocation model and the behavioral confirmation hypothesis both assume that people hold relatively accurate, unbiased views of their partner's behaviors from week to week. In contrast, the perceptual confirmation hypothesis—which is most strongly supported by the analyses presented thus far—predicts that holding high expectations leads to a more charitable perception of the partner's behaviors compared to holding lower expectations. We directly tested these possibilities by examining the accuracy and bias of people's perceptions of their partner's behaviors using a truth and bias analysis strategy (West & Kenny, 2011).

Analysis Strategy. We conducted analyses using the MIXED procedure in SPSS. To account for the nested nature of our data, we tested a two-level cross model with random intercepts, in which individuals are nested within couples, and individuals and weeks are crossed to account for the fact that both partners completed the measures on the same week (Kenny et al., 2006). In the truth and

bias models, the outcome measure is the perceiver's judgment of their partner's behaviors that week (West & Kenny, 2011). All truth and bias variables, including the outcome measure, are centered around "the truth force," or the average amount of positive behaviors reported by partners in the sample across time points (see Muise, Stanton, et al., 2016; Overall et al., 2012 for similar methods). This results in the intercept of the model reflecting the average difference between individuals' perceptions and partners' true behaviors (referred to as the "directional bias"). Thus, positive values for the intercept indicate that individuals tend to overperceive their partner's positive behaviors (positive directional bias), whereas negative values for the intercept indicate that individuals tend to underperceive their partners' positive behaviors (negative directional bias). Of central interest is the coefficient of the "truth force" in the model, the partner's actual behaviors. A significant positive effect suggests that individuals accurately tracked their partner's behaviors across weeks, or tracking accuracy. Put simply, a positive truth force indicates individuals' perceptions are significantly grounded in the "truth"; their perceptions are accurate. To ensure we tap into accuracy most directly, we examine the effects of accuracy independent from the "bias force" (West & Kenny, 2011), or assumed similarity, which refers to the extent to which a person projects their own behaviors onto their partner (i.e., Brent assumes Angela did a lot for the relationship on weeks that he himself did a lot for the relationship). That is, we control for how many behaviors the perceiver reported they did that week.

Results. There was an overall tendency (i.e., significant directional bias) for individuals to underperceive their partner's behaviors (b = -.12, SE = .03, p < .001, 95% confidence interval [CI] [-.19, -.06]). Individuals tended to assume their partner enacted a similar amount of positive behaviors as themselves (i.e., significant

assumed similarity; b = .93, SE = .03, p < .001, 95% CI [.86, 1.00]) and accurately perceive their partner's behavior (i.e., a significant truth force; b = .12, SE = .03, p = .001, 95% CI [.05, .19]). Gender did not significantly moderate any of the forces/biases (p > .13). Raw differences between actor perceptions and partner reports for each item are shown in the Supplemental Table 6.

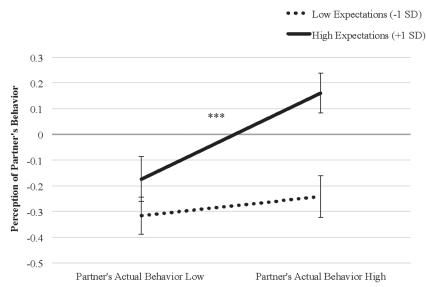
We next tested whether one's expectations moderated directional bias, assumed similarity, or accuracy. Specifically, we tested whether individuals with higher expectations perceive their partner as having completed more or fewer behaviors, regardless of the partner's true behavior, and whether individuals' expectations color their subsequent perception accuracy (see Figure 9). We centered expectations on the grand mean of expectations (across dyads and time points). In support of the perceptual confirmation hypothesis, we indeed found evidence that expectations moderated directional bias (b = .16, SE = .06, p = .005, 95% CI [.05, .27]). When individuals had lower partner expectations (1 SD below sample mean) the previous week they significantly underperceived their partner's behaviors the current week (b = -.28, SE = .06, p < .001, 95% CI [-.40, -.16]), whereas when individuals had higher partner expectations (1 SD above sample mean) they did not significantly underperceive or overperceive (b = -.007, SE = .06, p = .91, 95% CI [-.12, .10]). We failed to find evidence that expectations affected the tendency to assume a partner engaged in a similar number of behaviors (b = -.02, SE = .03, p = .56, 95% CI [-.08, .05]). Finally, there was a marginal interaction between expectations and the truth force (b = .08, SE = .05, p = .089, 95% CI [-.01, .18]; preliminarily suggesting that when people had lower expectations they did not accurately track their partner's behavior (b = .04, SE = .05, p = .43, 95% CI [-.06, .14]), whereas when they had higher expectations they did accurately track their partner's behavior (b = .18, SE = .07, p = .006, 95% CI [.05, .31]). Put differently, when a partner truly did engage in many positive behaviors on a given week, those with higher expectations perceived significantly more behaviors than those with lower expectations (b = .24, SE = .07, p = .001, 95% CI [.10, .37]); whereas when a partner truly did engage in few positive behaviors, expectations did not significantly affect perceptions of behaviors (b = .08, SE = .07, p = .25, 95% CI [-.06, .23]). These effects were not moderated by gender (p > .083).

Accuracy and Satisfaction

Analysis Strategy. We next used polynomial regression with response surface analysis (RSA) to examine whether individuals are more satisfied with their relationships when their perceptions match their expectations, as suggested by the suffocation model of marriage. The RSA analysis can provide a more in-depth exploration of this question than the aforementioned moderation analyses. RSA is an advanced tool designed to optimally test how the match between two predictor variables—expectations and perceptions in this case—associate with an outcome variable—satisfaction (see review by Barranti et al., 2017). By displaying the results in three-dimensional space, RSA provides a nuanced view of how combinations of two predictor variables are related to the outcome (Shanock et al., 2010; see also Barranti et al., 2016; Muise, Stanton, et al., 2016).

RSA analyses provide four coefficients of interest: a1-a4 in one model. The a1 coefficient provides a statistical test of whether matching at one level of a variable tends to be better (or worse) than matching at another level. For example, does satisfaction tend to be higher when a person perceives their high, rather than low, levels of expectations as being fulfilled? The a2 coefficient tests for a curvilinear effect for this phenomenon, in other words, is the association between matching and satisfaction different as expectations become increasingly extreme? That is, perhaps perceiving a moderate level of expectations (e.g., expecting an average of 4 on a 7-point scale) as being confirmed is less relevant to one's relationship than perceiving that very high/low expectations are confirmed. The a4 coefficient directly tests whether a correspondence between

Figure 9



The Effect of Expectations for a Partner's Behaviors on Perceived Behaviors

Note. Slopes across low to high actual behavior reflect tracking accuracy. *** p < .001.

expectations and perceptions is associated with satisfaction. Additionally, the a3 coefficient gives information as to whether matching in one direction is better/worse than the other: is higher satisfaction observed when a person's expectations are higher versus lower than their subsequent perceptions?⁴

We created our model following the guidelines of Shanock et al. (2010) whereby we first centered the person's expectations for their partner's behavior the previous week and their subsequent perceptions of their partner's behavior around the scale midpoint. We then created squared versions of these centered variables. Using multilevel modeling to account for the dependence in our data (as detailed above) we predicted the person's relationship satisfaction this week from: their expectations the previous week, their perceptions of their partner's behaviors the current week, the squared versions of these two variables, and the interaction between expectations and perceptions. We then inputted the coefficients, standard errors, and relevant covariances into the R package RSA (Schönbrodt & Humberg, 2016) to test the significance of the a1-a4 values and graph the surface plots (see Figure 10, for RSA plot). Given we had 300 observations, we are adequately powered to detect a medium effect (Barranti et al., 2017).

Results. The *a1* coefficient was significant and positive (.86, SE = .15, p < .001), indicating that relationship satisfaction was higher when expectations and perceptions matched at high, relative to low levels. However, coefficients a2-a4 were not statistically significant (p > .27). This means that we failed to find evidence that individuals' weekly relationship satisfaction differed as a function of the discrepancy between expectations and perceptions.

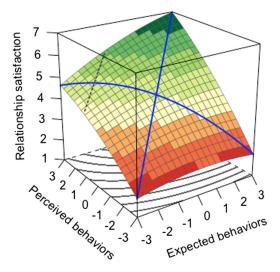
Discussion

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Study 3 followed couples across three weekly time points. Crosslagged panel models examined how expected positive behaviors from the partner, perceived positive behaviors from the partner, the partner's own reports of their behaviors, and relationship quality all

Figure 10



Response Surface Analysis of Expectations, Perceptions, and Relationship Satisfaction

Note. See the online article for the color version of this figure.

mutually influenced one another over time. Replicating the results of Studies 1 and 2, people who expected more positive behaviors from their partners subsequently perceived more positive behaviors the following week. These effects could not be explained by the partner's actual behaviors, despite the fact that higher expectations 1 week were associated with more positive behaviors from the partner the subsequent week. Failing to find a strong role of partner behavior echoes a growing body of work such as that on perception of support (e.g., Bar-Kalifa et al., 2016) and on the contribution of responsive behavior to one's well-being (Lemay, 2014).

Truth and bias analyses shed additional light on these findings. Independent of the partner's true behavior, lower expectations were associated with lower perceptions (than those with higher expectations), and these perceptions were unwarrantedly pessimistic. When individuals had low expectations, they failed to perceive differences between when a partner truly did very little, or a lot. We did not find the converse effect, in that when people had higher expectations they did not significantly overestimate their partner's behaviors, but rather were more accurately attuned to their partner's behaviors relative to those with lower expectations (although this difference should be interpreted with caution as it was not statistically significant). Finding that it was those with less positive expectations who are prone to underperceive their partners' positive actions aligns with similar patterns among those with concern-based relationship insecurities, such as high rejection sensitivity (e.g., Rajchert et al., 2022), low self-esteem (e.g., Murray et al., 2002), and high attachment anxiety (e.g., Rodriguez et al., 2019).

More generally, we found that individuals do tend to accurately track their partner's relationship behaviors, and this accuracy is independent from the individual's own behaviors. These results suggest that our Positive Relationship Behaviors Scale contains behaviors that are indeed readily verifiable by partners on a weekly basis. It is perhaps not surprising that, although individuals tend to accurately track their partner's behaviors, they do tend to underestimate them; that is, although partners recognize which weeks their partner is putting in the most effort, they still fail to miss some of their partner's behaviors. This underestimation may occur due to an egocentric bias, whereby one's own contributions are more accessible and are overestimated relative to those of one's partner (Ross & Sicoly, 1979). This underestimation is also consistent with an error management perspective (see Fletcher & Kerr, 2010 for review). That is, particularly for those with low relationship expectations, it may be more costly to overperceive a partner's positive behaviors, and be lulled into a false sense of security in one's relationship. By underperceiving a partner's positive behaviors, those with low expectations, much like those with low self-esteem (Fletcher & Kerr, 2010; Murray et al., 2001) can protect themselves and distance themselves from an unsatisfying or risky relationship.

Particularly in a concrete and verifiable domain such as week-toweek relationship behaviors, one might expect low expectations to benefit a relationship by making it easy for the partner to exceed

⁴ Researchers have recently introduced an additional coefficient, the a5, (Schönbrodt et al., 2018) that represents whether the ridge of the threedimensional surface is shifted from the line of congruence. This coefficient is beyond the scope of the present study, and was not significant (p = .929). Likewise, researchers have elaborated on the pattern of coefficients needed to determine a congruency effect (see Humberg et al., 2019); however, since only the al coefficient was significant in our results, this is not a concern for our interpretation.

expectations, whereas high expectations might be detrimental, particularly when the partner fails to meet them (as implied by the suffocation model). As in Studies 1 and 2, we did not find support for this idea. Instead, truth and bias analyses revealed that when people expected less from their partners, their perceptions of whether their partner was fulfilling their expectations were negatively skewed. Additionally, RSA analyses failed to provide evidence that perceiving one's expectations to be confirmed leads to higher relationship satisfaction. Although we observed that individuals were more satisfied on weeks when they perceived their high, rather than low, expectations as confirmed, the discrepancy between expectations and perceptions did not predict relationship satisfaction.

General Discussion

People are happier in relationships when they perceive that their partners strive to meet their emotional, sexual, and practical needs (e.g., Girme et al., 2014; Muise et al., 2019; Newkirk et al., 2017; Van Lange et al., 1997; Wieselquist et al., 1999). But how do people arrive at these perceptions? In pilot research, we selected 21 concrete, highly desirable behaviors that romantic partners can conceivably perform for each other on a regular basis, such as complimenting each other, supporting each other's interests, expressing physical affection, and arranging enjoyable activities to do together. We then conducted three studies examining the extent to which people expected versus perceived their partners to engage in these behaviors from week to week. By using a dynamical systems approach in which each variable was simultaneously treated as both a predictor and an outcome, we were able to test five different models of how expectations about the partner's relationship behaviors, perceptions of the partner's behaviors, and own relationship quality might drive changes in each other from 1 week to the next.

How Do Relationship Expectations Shape Relationship Perceptions?

We first considered possible associations between expectations and perceptions of a partner's relational behaviors. Across all three studies, when people held higher expectations of their partners for the next week, they then perceived that their partner had engaged in more positive behaviors that week, controlling for perceived behaviors on the previous week. Study 2 showed similar effects for negative relationship behaviors. The existing literature offers two possible reasons for this association: the *perceptual confirmation hypothesis* (people perceive what they expect to perceive, e.g., Darley & Gross, 1983; Kunda, 1990; Lord et al., 1979; Nickerson, 1998; Stone et al., 1997) and the *behavioral confirmation hypothesis* (people tend to behave in ways that conform to others' expectations, e.g., Rosenthal & Jacobson, 1968; Snyder, 1984; Snyder & Swann, 1978; Snyder et al., 1977).

In Study 3, the inclusion of partner reports allowed us to tease the hypotheses apart. The partner's own reports of their behaviors did not predict changes in perceived partner effort, nor did they explain the association between expected and perceived partner effort. People who expected more positive behaviors from their partners in turn perceived more positive behaviors from their partners, regardless of how many behaviors the partner reported engaging in. In sum, our data provides strong support for perceptual

confirmation, and only weak support for behavioral confirmation. People perceive what they expect to perceive.

This pattern of results underscores the importance of relationship cognitions and de-emphasizes the role of behavior. Consistent with the large body of work on positive illusions (e.g., Murray & Holmes, 1997; Murray et al., 1996a), people's more general beliefs about the relationship help to shape their specific perceptions about their partner. Yet, we do not mean to imply that committed partners with rosy illusions of one another will hold onto these illusions forever in the presence of bad behavior (or lack of positive behavior). We suspect that people may be tracking whether their partner fails to enact positive behaviors on an automatic level, but this may only relate to their explicit relationship evaluations in certain contexts. Namely, when the person lacks the opportunity and ability to override the influence of their automatic attitudes (see Hicks & McNulty, 2019 for review). That is, a partner's poor behaviors may ultimately shape relationship expectations and evaluations, but the behaviors' influence will only appear in explicit reports when a committed partner cannot (e.g., due to stress) override these negative sentiments.

Do Relationship Expectations Shape Relationship Quality, or Reflect It?

We next considered possible associations between expectations and relationship quality. The *construction model* posits that holding high expectations directly leads to higher relationship quality, likely via either perceptual or behavioral confirmation. In contrast, the *reflection model* posits that higher expectations merely *reflect* higher relationship quality, rather than actively shape it (see Lemay & Venaglia, 2016). A final hypothesis that we considered is the *suffocation model* (Finkel et al., 2014, 2015): High expectations may have deleterious effects on relationship quality, particularly if those expectations are not met.

The current data provides some support for the reflection model, weak support for the construction model, and no support for the suffocation model. In each study, we examined four indicators of relationship quality: satisfaction, commitment, gratitude, and trust. In Study 1, three out of four of those indicators predicted positive changes in expected positive behaviors from the partner. That is, when people felt more satisfied, trusting, and grateful for their partners on a given week, they had higher expectations for their partner's relationship behaviors the next week, controlling for initial expectations assessed the first week. These results did not replicate in Study 2, in which none of the quality indicators predicted changes in expectations. However, they did replicate in Study 3, in which all four quality indicators predicted positive changes in both expected and perceived behaviors. Although not entirely consistent across samples and models, these results do provide some support for the reflection model, whereby the expectations that people hold for their partners are in part a reflection of their current satisfaction with the relationship as a whole.

In Study 1, neither expected nor perceived behaviors predicted positive changes in any of the four relationship quality indicators. In Study 2, expected and perceived behaviors each predicted relationship quality in two out of eight models tested. Specifically, perceived positive behaviors predicted positive changes in trust, perceived negative behaviors predicted negative changes in gratitude, expected positive behaviors predicted positive change in commitment, and expected negative behaviors predicted negative changes in trust. In Study 3, expected positive behaviors predicted positive changes in satisfaction and commitment, but not in gratitude or trust, and perceived behaviors did not predict changes in any of the four relationship quality indicators. These results provide weak and inconsistent evidence for a construction model, whereby people actively construct the quality of their relationships via the expectations they hold.

Finally, none of the results provided support for the suffocation model, which posits that holding unrealistically high relationship expectations can be detrimental to relationship functioning. In each study, we conducted moderation analyses (expectations by perceptions) to more precisely test the suffocation model. Even in the highly powered Study 1, it was not the case that the link between expectations and relationship quality was particularly positive when those expectations were perceived to have been met. Echoing this notion, the RSA analysis found that the discrepancy between expectations and perceptions the following week did not account for relationship quality.

What Counts as a Verifiable Relationship Behavior?

Existing literature has made a distinction between global attributions, which are highly subjective, and concrete behaviors that are more verifiable (e.g., Lemay & Venaglia, 2016; Neff & Geers, 2013). Global attributions can be selectively supported by a wide range of evidence (Dunning et al., 1989). For example, if Brent expects his partner Angela to be intelligent, he could draw from a wide range of information to maintain that expectation (e.g., the fact that she is well read; her ability to perform her own car maintenance; her knack for recalling obscure movie trivia). Expectations about specific behaviors, on the other hand, may be more difficult to maintain in the face of conflicting evidence. If Brent expects Angela to perform a specific behavior next week (e.g., plan a fun activity for the couple to do together), and she does not, he should have little wiggle room to convince himself that she has in fact performed the behavior. The expectation has been disconfirmed. Thus, holding high global expectations may lead to more positive relationship outcomes compared to high specific expectations, particularly when those expectations are not met.

In the current project, we strove to develop a strong test of the current models by focusing on specific, concrete behaviors. We validated a new scale of 21 specific, desirable relationship behaviors, such as "complimented me," "shown support for my interests or projects," and "done the chores he/she said that he/she would do." We measured expectations and perceptions of these behaviors weekly, which is a relatively short time frame in which to anticipate and recall a partner's actions. Truth and bias analyses in Study 3 showed that indeed, participants could track the extent to which their partners performed these behaviors with at least some degree of accuracy.

Yet, despite this focus on specific, concrete behaviors occurring over a relatively short time frame, expectations regarding these behaviors still did not function as an objective benchmark for the partner's effort that could be confirmed or disconfirmed in an unbiased manner. In fact, in the dyadic sample (Study 3), one partner's reports of their own behaviors did not even predict the other partner's perceptions of those behaviors once expectations were entered into the model. We also found no evidence that expectations shaped relationship quality, either positively or negatively and regardless of whether the expectations were perceived to have been met. Rather, people projected their global, subjective evaluations of their relationship onto both their expectations *and* their perceptions of these behaviors. Further supporting this projection framing is the fact that the Positive Behaviors Scale consistently had a very high α (range = .95–.98), despite consisting of a broad range of behaviors that ought to pertain to distinct facets of the relationship (e.g., communication, responsiveness, sexual satisfaction, housework, novelty, and leisure time). Despite the specificity of these behaviors, participants may not have actually rated each item in an objective, concrete way, drawing primarily from their recollections of their partner's real behaviors.

These results have implications that go beyond the topic of relationship expectations, because they suggest that constructing self-report relationship measures that minimize subjectivity may be more difficult than previously assumed. The field of relationship science has amassed many self-report measures that ostensibly capture different facets of people's relationship experiences. These measures are often implemented with the assumption that people are actively thinking about each different facet of their relationship experience when rating them. However, consistent with the reflection model, the current results suggest that a nontrivial portion of the variance in these self-report relationship measures may in fact be a projection of the rater's global relationship evaluations. This would help to explain why own reports about a relationship collectively explain so much of the variance in own relationship quality, whereas the partner's reports on those same measures do not (Joel et al., 2020). Own global evaluations about a relationship may be powerfully projected onto other relationship measures (Lemay & Clark, 2008; Lemay et al., 2007, 2015; Schoebi et al., 2012), even measures that appear to be highly specific, concrete, and verifiable.

Implications for Models That Feature Relationship Standards

Many prominent relationship theories hold that we compare our partners to a set of internal relationship standards. For example, social exchange theory (Thibaut & Kelley, 1959) and the ideal standards model (Fletcher & Simpson, 2000; Simpson et al., 2001) both assert that relationship quality is shaped in part by how well the relationship and the partner measure up to one's views about how the relationship and partner ought to be. Implicit in such models is the idea that (a) relationship standards and expectations exist independently from a given relationship, (b) a partner's traits and relationship behaviors can be relatively objectively assessed, and therefore (c) the two can be meaningfully compared to one another.

The current findings suggest that these theoretical models may be deceptively difficult to test empirically, at least with self-report measures. Reality can only effectively be *compared* to one's expectations if perceptions of that reality are not *driven* by one's expectations. The current results suggest that perceptions of even supposedly concrete, verifiable behaviors are indeed shaped indeed by expectations, which are in turn shaped by relationship quality.

Limitations

We assessed a range of expected or perceived relationship behaviors. One limitation of this approach is that the aggregate scales might not capture behavior-specific accuracy or bias. To address this, future studies might also examine accuracy in profile analyses-do individuals accurately perceive the specific individual behaviors they expected or that their partner report? Or is the correlational accuracy due to perceiving general effort correctly, even if the individual behaviors are not tracked? Relatedly, the test of the link between perceived behaviors falling short of expectations and relationship quality (i.e., suffocation model) should be interpreted with caution. The model we tested invokes a broad interpretation of the suffocation model (Finkel et al., 2014, 2015). That is, we did not distinguish between higher order goals (e.g., selfactualization) and lower order goals (such as companionship), but instead viewed relationship expectations as a whole. In part, this is due to the fact that higher order goals may not vary at the weekly level and are not at the concrete verifiable level we sought to capture with our scale. Nevertheless, future research could directly tap into expectations for different levels of goals.

We examined expected and perceived behaviors by the week. This relatively short time frame might have helped participants to remember their partners' or their own actions during the targeted time frame, but it is a short time to detect shifts in relationship quality. Although there was variability in relationship quality week to week (see Table 2), more variability (and therefore, more support for the construction model or the suffocation model) might be found when examining shifts in relationship quality across longer time frames. Alternatively, there could be meaningful benefits to capturing these behaviors on a shorter time frame, such as at the daily level. Daily reports may be even more objective and less prone to bias than weekly reports, because it is easier to remember what actually happened within the past day compared to the previous week. For this reason, examining how relationship perceptions, expectations, and evaluations shape each other from week to week could offer a particularly strong test of the current findings.

Moreover, the choice to examine individuals and couples in their daily life over 3 weeks, while ecologically valid, is not without its limitations. Although we suspect that throughout a 3-week period we would capture a range of relationship contexts and situations, we did not specifically assess situations that are known to exacerbate the role of expectations on relationship functioning, such as strain-test situations (Holmes, 1981), or powerful attachment system activation (e.g., Fraley & Shaver, 1998). It is possible that in such strong situations, we may have observed effects of expectations on satisfaction, and future research is encouraged to test support for the five models in such situations. Last, our sample size of dyads for Study 3 was relatively small. Future research should be conducted before ruling out the role of partner's actual behaviors in relationship perceptions and evaluations, as it is possible small effects exist that we were underpowered to detect.

Conclusions

Using a dynamic systems approach in examining the role of expectations for positive relationship behaviors on relationship outcomes, we tested five possible models. We found support across three studies for a perceptual confirmation pattern. This result is good news for couples: Those who have established a reputation for doing a lot for their partner will be seen as performing many positive behaviors in the relationship (and few negative behaviors; Study 2) regardless of how much they actually do in a given week. Thus, these partners might not disappoint their partners even when they have an "off" week, performing fewer relationship behaviors than usual—indeed, their partner might not notice because their expectations color their perceptions of relationship contributions.

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Received January 8, 2021 Revision received August 26, 2022 Accepted September 28, 2022