

**Relationship Trajectories:
A Meta-Theoretical Framework and Theoretical Applications**

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Abstract

This article introduces a meta-theoretical framework—the Relationship Trajectories Framework—that conceptualizes how human mating relationships develop across their complete time span, from the moment two people meet until the relationship ends. The framework depicts relationships as arc-shaped evaluative trajectories that vary on five dimensions: shape (which includes ascent, peak, and descent), fluctuation, threshold, composition, and density. The framework can depict single trajectories in isolation or two partners' trajectories with respect to each other (dyadic trajectories). Two theoretical models demonstrate the generative power of the framework—the Relationship Coordination and Strategic Timing (ReCAST) Model and the Sociosexuality Trajectory Model—both of which integrate close relationships and evolutionary psychological perspectives on mating. Finally, additional examples illustrate how the framework can generate new research questions about core relationships topics.

Keywords: close relationships, evolutionary psychology, initial attraction, mating strategies, relationship length, trajectories

Relationship Trajectories:

A Meta-Theoretical Framework and Theoretical Applications

Scholars who study human mating care about time. They generate theoretical models outlining, for example, the differential time-course of passionate versus companionate love (Walster & Walster, 1978), how people confronting relational threats maintain their relationship rather than breaking up (Murray, Holmes, & Collins, 2006), and the different mating strategies people employ depending on the amount of time they anticipate being in a relationship (Buss & Schmitt, 1993). At great expense, they often conduct longitudinal studies to track the relationship dynamics of one or both partners over time.

Studies of dating, for example, regularly employ longitudinal methods to investigate how relationship quality changes over time, which couples are at elevated risk for breakup, or how certain motivations or self-presentational strategies ebb or flow depending on how long people have been dating (Clark & Beck, 2011; Le et al., 2010; Murray, Holmes, & Griffin, 1996). On occasion, they also ask individuals to offer retrospective accounts of their dating history with their partner, reporting on their likelihood of marriage at key relational events between the moment they began dating and the moment they got married (Huston, Surra, Fitzgerald, & Cate, 1981; Surra, 1985). Studies of marriage can command tremendous resources—sometimes for decades—to understand temporal dynamics (Huston et al., 2001; Karney & Bradbury, 1995; Vaillant & Vaillant, 1993). Much of this work explores trajectories of marital quality, which has revealed that relationship evaluations such as passion and satisfaction decline over time on average (Glenn, 1998; VanLaningham, Johnson, & Amato, 2001), although some individuals do sustain positive evaluations over time (Amato & James, 2018; Anderson, Van Ryzin, & Doherty, 2010; Lavner & Bradbury, 2010).

Other research investigates time by focusing on specific, meaningful transitions that couples experience (Baxter & Bullis, 1986). Some studies, for example, focus on the influence of discrete, common life events, such as the transitions to cohabitation (Rhoades, Stanley, & Markman, 2012), to marriage (Morris & Carter, 1999), to parenthood (Rholes, Simpson, Campbell, & Grich, 2001), or to a long-distance relationship status (Theiss & Knobloch, 2014). Still other studies focus on changes in the primacy of particular subjective experiences as a relationship develops, such as the transition from the primacy of hotter, more passionate forms of love to warmer, more companionate forms of love (Baumeister & Bratslavsky, 1999; Berscheid & Hatfield, 1978; Hatfield & Rapson, 1993; Hazan & Shaver, 1994; Sternberg, 1986).

Despite this extensive attention to temporal dynamics, however, there exists no general, generative framework for conceptualizing how relationships develop over their full time span—from the moment two people meet until a final breakup. To be sure, researchers have developed stage models, which posit that relationships—at least those that endure—advance through discrete stages in a particular sequence (Altman & Taylor, 1973; Levinger & Snoek, 1972; Knapp, 1978; Murstein, 1970). Although stage models have been important and influential, they are also limited. First, there is little evidence that most relationships pass through categorically distinct stages (Bradbury & Karney, 2013). Second, stage models generally posit a single normative relationship progression (e.g., from stages of increasing attraction, to interdependence, to bonding); none of the models provides ways of conceptualizing how certain people or certain relationships deviate from the average or typical one. That said, their emphasis on temporal processes that begin shortly after two individuals meet and extend into the establishment of a serious relationship (or even through its dissolution) is a major strength—and a major source of inspiration behind the development of the current “whole-relationship” framework.

The present article is divided into five sections. First, we consider two major gaps in the conceptualization of temporal dynamics in the science of human mating relationships. Second, we introduce the Relationship Trajectories Framework—a new meta-theoretical approach that presents as its central thesis that relationships can be conceptualized as evaluative arcs that begin at the moment two people meet. Third, we provide an illustration of the generative power of this framework by describing the Relationship Coordination and Strategic Timing (ReCAST) Model, which introduces falsifiable hypotheses at the intersection of close relationships and evolutionary perspectives on short-term and long-term mating. Fourth, we provide a second illustration by describing the Sociosexuality Trajectory Model, which introduces falsifiable hypotheses about the temporal dynamics linking different sociosexual orientations to relationship processes and outcomes. Fifth and finally, to illustrate the flexibility and generativity of the framework, we conclude with a discussion of several additional possible extensions.

Gaps in Time: What is Currently Missing in this Literature?

The preceding review suggests that time plays a central role in relationship science. However, most prior work suffers from two major limitations, a realization that led us to propose a new framework for conceptualizing time in the context of romantic relationships.

Limitation #1: The Gap between Models of Initial Attraction and Models of Relationship Dynamics

First, there is a major gap in our understanding of the dynamics of relationship initiation. The initial attraction literature does not intersect empirically with the literature on established romantic relationships, mainly because the initial attraction literature examines romantic evaluations over extremely short time scales. In fact, the dependent variable in nearly all studies occurs within seconds or minutes following initial exposure to a target person, with little if any

expectation of future interaction with him or her. Researchers frequently use pictures or descriptions of potential partners as stimuli rather than real people. In virtually all studies, once participants have completed an attraction measure, the “relationship” is essentially over; there is no effort to consider how it could develop over time.

Although scholars occasionally examine initial attraction longitudinally (Asendorpf, Penke, & Back, 2011; Bahns, Crandall, Gillath, & Preacher, 2016; Eastwick & Finkel, 2008b; Eastwick & Hunt, 2014; Reis, Maniaci, Caprariello, Finkel, & Eastwick, 2011; Sharabi & Coughlin, 2017; Sprecher & Duck, 1994), such studies are rare. Even rarer are studies that attempt to capture the “official” formation of a relationship—defined as the moment two people agree they are romantic partners (Campbell, Chin, & Stanton, 2016; Eastwick & Finkel, 2008a; Eastwick, Keneski, Morgan, McDonald, & Huang, 2018). Consequently, we know remarkably little about what takes place between the moment two strangers meet and the moment they form a mutually recognized, committed romantic partnership (Campbell & Stanton, 2014; Eastwick & Finkel, 2008c). Despite the fact that relationship scientists conceptualize relationships as having arcs that rise and fall (Bradbury & Karney, 2013), the actual rise of these arcs is largely missing from the current literature.

Even scholars who solely study dynamics in established relationships should be concerned about this gap, because events and patterns that occur early in a relationship may affect psychological processes that transpire later (e.g., Hunt, Eastwick, & Finkel, 2015; Joel, Teper, & McDonald, 2014). As one illustration, close relationships researchers have devoted considerable attention to the ways in which personality traits (McNulty, 2013) and other individual differences, such as attachment orientations (Simpson & Rholes, 2012), affect relationship functioning. But with very few exceptions, these personality and individual difference variables

are assessed while the relationship is unfolding or established, not before the two partners first met. Thus, in any given study, an individual's score on an "individual difference" predictor variable might be (at least in part) a consequence of events that transpired earlier in the relationship rather than a cause of current relationship functioning.

How big is the gap in time between studies of attraction between strangers and studies of established relationships? If people typically initiate relationships by meeting a stranger, asking him or her out on a date and forming an official relationship shortly thereafter, the gap might be comfortingly short (e.g., a few days). However, the available evidence suggests that such a temporally compressed sequence is rare. Instead, most relationships emerge over time from among people's networks of friends and acquaintances (Bleske-Rechek, Joseph, Williquette, & Donovan, 2016; Hunt et al., 2015; Ingham, Woodcock, & Stenner, 1991; Kaestle & Halpern, 2005; Manning, Giordano, & Longmore, 2006; Walsh, Fielder, Carey, & Carey, 2014). Indeed, the time elapsed between when two people first meet and when they officially establish a romantic relationship typically spans months or years (Eastwick et al., 2018; Hunt et al., 2015). Furthermore, sexual encounters with strangers constitute a small fraction of people's sexual experiences, even among sexually active young adults (Manning et al., 2006; Walsh et al., 2014). In other words, people typically make relationships sexual by altering acquaintanceships or friendships, not by immediately finding chemistry with strangers. For scholars interested in mapping current dating dynamics onto humans' evolved mating patterns, it bears noting that humans most likely initiated sexual relationships with well-known others during evolutionary history as well (Eibl-Eibesfeldt, 1989).

In summary, the current "trajectory gap" in the literature is large and noteworthy, and it has consequences for what scholars can conclude from their data. Greater insight regarding the

relationship dynamics that take place between first meetings and the official formation of a relationship is likely to yield considerable theoretical and practical payoffs.

Limitation #2: The Disconnect between Relationship Science and Evolved Mating Strategy Models

Second, as highlighted in prior reviews (e.g., Durante, Eastwick, Finkel, Gangestad, & Simpson, 2016), relationship science and evolutionary psychological perspectives remain disconnected with respect to the handling of time. This disconnect is partly theoretical. Close relationships studies typically treat short versus long relationship length as an *outcome* that follows from unhealthy versus healthy relationship functioning. However, the short-term versus long-term distinction is typically conceptualized as a *predictor* variable in the evolutionary psychological literature. Within this literature, people are conjectured to use different mating strategies and to pursue different kinds of partners, depending on the extent to which one's (conscious or unconscious) relationship length goal is short versus long. One might tie the concepts together by positing that short-term and long-term strategies are the *means* (i.e., predictors) that humans use to achieve short-term and long-term relationship length *goals* (i.e., outcomes). Perhaps because the crosstalk between the two disciplines has been so meager historically, there have been few if any attempts to bridge this gap empirically. For example, we know of no data showing that the use of long-term (rather than short-term) strategies leads to the formation of longer lasting relationships. In the absence of such evidence, it is often unclear whether close relationships and evolutionary scholars are referring to the same constructs when they discuss relationships that vary in the extent to which they are short versus long.

The disconnect is also partly methodological. Whereas relationship science studies of relationship trajectories often rely on longitudinal procedures (e.g., to assess whether a

relationship persists or breaks up), evolutionary psychology studies employing the short-term/long-term distinction typically rely on one-time measurement procedures (similar to the initial attraction studies described earlier). In one common study design, participants might be asked to rate their short-term and long-term attraction to opposite-sex individuals depicted in a picture (e.g., DeBruine, 2005; Little, Jones, Burt, & Perrett, 2007, Penton-Voak et al., 1999; Roney, Hanson, Durante, & Maestriperieri, 2006), in a written description (e.g., Fletcher et al., 2004), in a video-recording (Cantú et al., 2014; Gangestad, Garver-Apgar, Simpson, & Cousins, 2007; Li et al., 2009), or in person (e.g., Li et al., 2013). After participants provide these ratings, the study ends.

Without knowing much about how real-life short-term and long-term relationships form and develop, confusion emerges when the current evolutionary psychology and relationship science literatures intersect. For example, one commonly articulated assertion is that that “sexy” places (e.g., speed-dating events, bars) pull for the formation of short-term relationships, whereas long-term relationships form in other environments (Kurzban & Weeden, 2007; Li & Meltzer, 2015; Li et al., 2013; cf. Eastwick et al., 2018). This assertion can be applied in a way that renders most—or maybe even all—studies of initial attraction irrelevant to evolutionary perspectives on long-term mating (Maestriperieri, Henry, & Nickels, 2017; Schmitt, 2014; cf. Eastwick, Luchies, Finkel, & Hunt, 2014b). Additionally, one can find citations justifying the use of dating couples for testing predictions about long-term sexual strategies (presumably by comparison to short flings; Conroy-Beam & Buss, 2016) or short-term strategies (presumably by comparison to marriages; Meltzer, McNulty, Jackson, & Karney, 2014; cf. Eastwick, Neff, Finkel, Luchies, & Hunt, 2014). These confusions are grounded in broader issues: Do short-term and long-term relationships look different from their outset, or does the short-term versus long-term nature of a

relationship emerge gradually over time as it develops? At what point do people achieve insight into—or even bother to ask themselves—whether they want a short-term or a long-term relationship with a given partner? As we discuss below, answers to these basic questions likely lie somewhere between the opening evaluative moments and becoming an official couple.

In summary, the same empirical and theoretical gap that plagues the initial attraction and close relationships literatures also creates challenges for scholars working at the intersection of these literatures and evolutionary psychology. A model that attempts to map the complete time-course of human mating relationships holds tremendous integrative potential across disciplines.

The Relationship Trajectories Framework

In this section, we illustrate how scholars can overcome these shortcomings with the Relationship Trajectories Framework. The core premise of the framework is that romantic and sexual relationships—in any meaningful aggregation, and regardless of their length—can be conceptualized as arc-shaped trajectories that begin when two people meet. The framework is metatheoretical rather than theoretical (see Finkel, 2014) because it does not introduce a specific set of falsifiable predictions. Instead, it serves as a guide for the development of interesting and generative theories, models, and research questions about how different relationships develop over time. Once we have introduced the framework, we discuss two theoretical models that draw from it, both of which are theoretical in that they generate specific, falsifiable hypotheses.

Origins of the Relationship Trajectories Framework

The Relationship Trajectories Framework draws inspiration from several of the stage and transition models noted above (e.g., Altman & Taylor, 1973; Hazan & Shaver, 1994; Huston et al., 1981; Knapp, 1978; Levinger, 1980; Surra, 1985). Specifically, it depicts the entire time-course of the relationship, similar to stage models (e.g., Knapp, 1978). However, it also (a) re-

envisions stages as rising and falling subjective evaluations and motivations (e.g., Hazan & Shaver, 1994); and (b) explicitly considers both the average, normative trajectory as well as individual differences in trajectories. Similar to prior models, time (i.e., the x-axis) can be conceptualized either literally (e.g., in days, weeks, months, or years) or in terms of important relationship events (e.g., first kiss, taking a trip, moving in together).

The Relationship Trajectories Framework is broader than prior models in four major ways. First, it encompasses a large array of possible sexual or romantic relationships, not only current romantic relationships. In order for a relationship to be depicted within this framework, the minimum criterion is that a person must have evaluated another person romantically on *two or more discrete, separate occasions* (i.e., enough information to generate a trajectory across time). Thus, the Relationship Trajectories Framework is well suited to depict past or ongoing relationships of any length, ranging from days to decades. There is no requirement that specific relationship evaluations fluctuate over time, but a trajectory is unlikely to be useful or meaningful if evaluations are zero at all time-points (i.e., a person never feels any sexual or romantic interest in the partner). With regard to the endpoint, a relationship can be depicted in this framework for as long as a person can provide an evaluation of the partner (i.e., for as long as he or she can remember the partner); in practice, however, many applications of the framework will concretely represent the “end of a relationship.” For example, scholars who study relationships that are official may operationalize the end of the relationship as a mutually acknowledged, final breakup that marks the end of all romantic and sexual contact, whereas scholars who study crushes that never become official relationships may operationalize the end

of the relationship as the moment when a person permanently stops believing that his/her partner has any romantic potential (Eastwick & Finkel, 2008c).¹

Second, the process starts not with the official formation of a romantic relationship, but rather with the initial encounter, even if the first positive romantic evaluation occurred much later. Most commonly, then, the start of a relationship will be a face-to-face meeting, although it can also begin via other informational channels (e.g., an instant messaging chat; Finkel, Eastwick, Karney, Reis & Sprecher, 2012). This relatively early conceptualization of the beginning of the relationship is essential for addressing the major empirical and theoretical gap described above: Official relationship formation typically takes time and follows several important events that happen early in relationship development, and many sexual relationships may never have an official formation event. Given that trajectories apply to more than committed, exclusive partners, a person could have zero, one, or several personally significant trajectories at a given point in time.

Third, according to the Relationship Trajectories Framework, the y-axis can be any evaluative (i.e., valenced) judgment (e.g., romantic interest, relationship quality, commitment, sexual desire). In the romantic domain, evaluations are organized hierarchically: Specific constructs (e.g., satisfaction, passion, love) are encompassed by a superordinate global romantic evaluation, akin to an overall subjective positive romantic attitude (Fletcher, Simpson, & Thomas, 2000). We frequently refer to global romantic evaluations on the y-axis when illustrating our framework, but, as will become clear in the “Composition” section below, the

¹ The Relationship Trajectories Framework makes no assumptions about whether a relationship continues or ends when one partner dies; subjectively, both of these bereavement experiences are common (Stroebe, Schut, & Stroebe, 2005). It also was not developed to apply to nonromantic relationships (e.g., platonic friendships, family relationships), nor any relationship without a face-to-face meeting (e.g., parasocial relationships, paradigms in which people evaluate faces over time), primarily because we do not know whether evaluations in these cases are represented appropriately as arc-shaped trajectories.

constructs that undergird global evaluations (e.g., passion) can be depicted similarly when researchers' hypotheses are captured more appropriately at this lower level of analysis. The y-axis can also depict implicit evaluations (Lee, Rogge, & Reis, 2010), negative or aversive evaluations (Gable & Reis, 2001), or other fine-grained judgments that have an evaluative component (e.g., feeling attached, Hazan & Shaver, 1994).

Fourth, when researchers are interested in dyadic research questions, the Relationship Trajectories Framework accommodates dyadic trajectories—that is, two individuals' romantic evaluations of each other over time. As elaborated below, two trajectories are depicted side-by-side in such cases, along with an additional axis that represents partners' closeness or interdependence using nonevaluative metrics (Berscheid, Snyder, & Omoto, 1989; Kelley, 1983).

Five Dimensions of Relationship Trajectories

The Relationship Trajectories Framework characterizes relationships in terms of five independent dimensions: shape (which includes three elements—*ascent*, *peak*, and *descent*), fluctuation, threshold, composition, and density (see Table 1). The first four dimensions apply to individual trajectories; the fifth applies to the clustering of trajectories over a given period of time in a person's life. Given our assumption that romantic/sexual relationships can be conceptualized as arc-shaped trajectories, it follows that these five dimensions can apply in principle to any (reasonably sized) sample of relationships. Variability across the five dimensions can stem from actor, partner, relationship-specific, and/or external forces; all of the dimensions are reflected in existing literature, although some (e.g., the descent element of shape) are emphasized more heavily than others (e.g., thresholds).

Shape. The shape dimension leverages an analogy to the arc-shaped trajectory of rockets that rise, peak, and eventually fall. Similar to rockets, romantic trajectories differ in their ascent (i.e., a trajectory can rise quickly, slowly, or not at all), peak (i.e., the overall level or height of the trajectory can vary from high to low), and descent (i.e., the trajectory can decline quickly, slowly, or not at all). Figure 1 illustrates these three characteristics of shape and how they can, in principle, vary independently of each other.² People experience a very large number of evaluative moments during a given relationship, so the shape dimension captures something approximating a measure of central tendency of those moments, one that smooths over shorter-term perturbations. As illustrated below, there is a nearly limitless number of variables that can affect the shape of a trajectory, and these predictors can cause a trajectory to slope upwards or downwards, or make a discontinuous jump upwards or downwards (Singer & Willett, 2003). Some variables could exert their effects from the opening moments of a relationship, well before researchers manage to study it; for example, some people are more likely to rate others positively in general (Wood, Harms, & Vazire, 2010), and this disposition could lead all of their arcs to be elevated on average.

Ascent. The rise in romantic evaluations that normatively occurs at the beginning of a trajectory—whether that trajectory develops into a full-fledged, official relationship or not—may take place more quickly in some relationships than others (see Figure 1, Panel A). Many studies have examined predictors of desire for opposite-sex strangers; these initial attraction studies are analogous to the opening moments of relationship trajectories, as a trajectory progresses from time 0 (i.e., when the target is unknown) to time 1 (i.e., the first encounter). Previously identified predictors have included actor effects such as the need to belong (Joel, Eastwick, & Finkel,

² Here, we discuss the three elements of shape that are essential to arcs (ascent, peak, and descent), but of course, real-life relationship trajectories may have other shape elements that merit exploration as well (e.g., plateaus, spikes or dips around normative transitions; post-breakup rebounds).

2017), attachment anxiety (McClure & Lydon, 2014), and being male (Fletcher, Kerr, Li, & Valentine, 2014); partner effects such as being flirtatious (Back et al., 2011) and having an attractive appearance (Walster, Aronson, Abrahams, & Rottmann, 1966); relationship-specific effects such as perceiving similarity to one's current partner (Byrne, Ervin, & Lamberth, 1970) and self-disclosing with him/her (Collins & Miller, 1994); and external effects such as meeting in a physiologically arousing environment (Dutton & Aron, 1974).

Few studies have examined romantic evaluations longitudinally during the pre-official-relationship portion of trajectories (e.g., Campbell & Stanton, 2014). Relationship-specific variables that predict romantic evaluations during this phase include: perceiving that one's partner is attractive and warm (Eastwick & Finkel, 2008b); having relaxed, smooth conversations with one's partner (Sprecher & Duck, 1994); and experiencing anxiety about whether one's partner will reciprocate one's positive feelings (Eastwick & Finkel, 2008a). Like the predictors of initial attraction reviewed above, these predictors seem to operate via main effects; we are unaware of any studies that have documented predictors of the slope of romantic evaluations before the relationship becomes official.

Peak. People's romantic evaluations reach greater heights in some relationships than in others (see Figure 1, Panel B). Peak refers not to the single most positive moment in a given person's relationship, but rather to the highest level of the smoothed-out curve across the time course of the relationship. An assortment of actor, relationship-specific, and external factors are likely to predict the peak of an evaluative arc. A classic longitudinal study of dating relationships found that people eventually reached higher levels of satisfaction if they had high affiliation motives and low independence motives (Eidelson, 1980). In the absence of comprehensive assessments from a relationship's first to its final encounter, researchers must rely on theory or

normative data to make claims about when the peak occurs, as when researchers conceptualize the first wave of data collection in a newlywed study as a zenith of relationship positivity (Karney & Bradbury, 1997; Kurdek, 1999). Evaluations at this time-point tend to be higher for couples who make fewer negative attributions about each other's behaviors, display love and responsiveness toward each other, and are not experiencing stress (Huston et al., 2001; Lavner, Bradbury, & Karney, 2012; Neff & Karney, 2017).

Descent. In some relationships, romantic evaluations reach a high point and then remain stable across long stretches of time, perhaps never declining to a point where one partner becomes motivated to end the relationship (like a rocket sustaining orbit indefinitely). In many relationships, however, evaluations eventually decline (Vaillant & Vaillant, 1993; VanLaningham et al., 2001). This decline takes place more quickly in some relationships than others (see Figure 1, Panel C). One central goal of relationship science is to explain why some relationships decline and eventually end, whereas others remain strong and persist (Bradbury & Karney, 2013).

A wide variety of factors predict whether relationship evaluations remain stable or deteriorate among well established relationships (e.g., marriages). For example, some individual differences affect the intercept (e.g., actor and partner effects of neuroticism, Karney & Bradbury, 1997) and/or slope of evaluations over time (e.g., actor effects of shyness; Baker & McNulty, 2010). Many of the most robust predictors in the existing literature are relationship-specific or external, such as conflict about sex (Long, Cate, Fehsenfeld, & Williams, 1996), feelings of ambivalence about the relationship (Huston et al., 2001), rejection and criticism during interactions (Karney & Bradbury, 1997), and financial stressors (Conger, Rueter, & Elder, 1999). Other studies have

documented interactions among various features. Stress, for example, predicts steeper declines among people who express more (vs. less) anger during conflict (Cohan & Bradbury, 1997).

Fluctuation. Relationship evaluations can fluctuate on a moment-to-moment, day-to-day, month-to-month, or year-to-year basis (see Figure 2). Such fluctuations can occur at any point during a relationship and, at times, may be so dramatic that partners break up and then get back together multiple times (Birnbaum, in press; Dailey, Brody, LeFebvre, & Crook, 2013).

According to the relational turbulence model (Solomon, Knobloch, Theiss, & McLaren, 2016) and interdependence perspectives on commitment (e.g., Kelley, 1983), relationship instability (i.e., dramatically fluctuating highs and lows) can increase people's perception that their relationship is chaotic and unlikely to persist. Considerable research supports this hypothesis. For example, fluctuations in one's own relationship satisfaction on a week-to-week basis predicts lower commitment and increased likelihood of breakup, independently of the average level and slope of satisfaction (Arriaga, 2001). The perception of a partner's fluctuating commitment (Arriaga, Reed, Goodfriend, & Agnew, 2006) and fluctuations in one's own relationship-specific attachment orientation (Girme et al., 2018) are also linked to deleterious relationship outcomes over time. Additionally, people who report lower levels of trust are more likely to experience fluctuations in relationship quality across time, which in turn predicts larger fluctuations in their partners' relationship quality (Campbell, Simpson, Boldry, & Rubin, 2010).

There are few empirical findings regarding the effect of trajectory fluctuations prior to the formation of a dating relationship. However, some theoretical perspectives suggest that fluctuations may be more normative during the early moments of relationships, and may even presage positive outcomes. Tennov (1979) suggests that limerence—an especially intense form of romantic passion—emerges when people experience a blend of hope and uncertainty. Events

that inspire hope (e.g., a returned text message) and uncertainty (e.g., an unreturned text message) may produce dramatically fluctuating highs and lows, with their combination promoting greater relationship pursuit through effects on passion (Eastwick & Finkel, 2008a, 2008c). Thus, fluctuations in evaluations about desired versus established dating partners may generate different effects.

Threshold. Relationship trajectories also vary in the extent to which evaluations are linked to thresholds for the enactment of certain behaviors. Even if the two partners in a relationship experience the same sequence of events and the same rising and falling of romantic evaluations over time, each one may enact different behaviors because the partners have different thresholds for whether s/he is sufficiently romantically interested in his/her partner to perform a given behavior (see Figure 3). For example, a man might be willing to have sex with a female partner if his desire for her is 60 or higher (on a 100-point scale), but she might be willing to have sex with him only if her desire is 80 or higher. Thresholds may also shift depending on the sign of the trajectory. The threshold for making a relationship official as a trajectory is rising, for example, may be higher than the threshold for officially ending the relationship as the trajectory is falling.

Threshold values may be especially illuminating in the context of Guttman (1947) scaling techniques (e.g., Bentler, 1968a, 1968b; Garcia-Sevilla, Muntaner, Moreno, & Trullas, 1984; Podell & Perkins, 1957). Guttman scales can be applied to normative sequences of events when a person who performs an “advanced” behavior should also be willing to perform a “less advanced” behavior. For example, there may be a normative sequence among Western adults today, such that spending time together one-on-one is less advanced than kissing, which is less advanced than sexual intercourse, which is less advanced than getting engaged. Consequently, if

an individual's evaluation of a potential partner is not exceptionally high or low, it may cross a threshold for enacting some behaviors but not others.

To explore these ideas, we asked heterosexual Mechanical Turk workers (87 men and 110 women) to indicate the degree to which they would need to be romantically interested in someone (hypothetically) in order to perform some of the sexual behaviors on the Bentler (1968a, 1968b) Guttman scales. Values for “one minute continuous lip kissing” and “sexual intercourse, face-to-face” are presented in Figure 4, separately for men and women. Consistent with the Guttman scaling of these behaviors, both men and women reported that their romantic interest threshold was lower for kissing than for sex. However, these thresholds were spaced very differently for men and women. Women and men reported roughly equivalent thresholds for wanting to kiss a hypothetical partner ($d = .14, t = 0.96, p = .339$), but women reported needing to feel considerably greater romantic interest than men before they would want to have sex with a partner ($d = .56, t = 3.92, p < .001$). Thus, conflicts in heterosexual relationships about whether to engage in sex may emerge due to sex thresholds, even if the two partners are equally interested in each other.

Quantitatively-oriented scholars have also developed techniques that model between-person differences in thresholds (i.e., as a random effect). These techniques do not require people to be aware of their own thresholds (De Haan-Rietdijk, Gottman, Bergeman, & Hamaker, 2016; see also Gottman, 2005) because their thresholds are “revealed” when researchers have sufficient repeated measurements of participants' evaluations of (e.g., romantic interest in) and behaviors directed toward (e.g., initiation of sex) a partner across time. Such models are fairly new and have never been applied to relationship studies spanning more than brief interactions, but they can aid researchers who seek to document threshold effects in romantic trajectories.

Composition. Trajectories also differ in the extent to which they are assembled from various underlying constructs. As noted above, romantic evaluations have a hierarchical structure, with global positive romantic attitudes being composed of more specific constructs, such as passion, love, commitment, trust, satisfaction, and intimacy (Fletcher et al., 2000). These constructs, in turn, can be further broken down into more refined subcomponents, such as dedication commitment and constraint commitment (Stanley, & Markman, 1992). In general, higher scores on all of these relationship quality components and subcomponents predict lower likelihood of breakup (Le, Dove, Agnew, Korn, & Mutso, 2010; Rhoades, Stanley, & Markman, 2010).

Several theories in the close relationships tradition, including attachment theory (Hazan & Shaver, 1994; Mikulincer & Shaver, 2016) and the triangular theory of love (Sternberg, 1986), posit that specific constructs may have distinct time-courses. Constructs such as passion and sexual desire, for example, tend to peak early in relationship development, whereas evaluations tied to the attachment-behavioral system (e.g., feelings of intimacy and emotional bonding) do not peak until later in relationship development. As a result, each global evaluation trajectory is potentially composed of several correlated but distinct sub-trajectories, and the global evaluation may be driven by some sub-trajectories more than others earlier versus later in the relationship (Figure 5, Panel A).

Besides these normative shifts in specific constructs that rise and fall across the course of a relationship, there may also be differences across relationships in the degree to which global evaluation trajectories track specific component constructs (see Figure 5, Panel B). For example, one person's overall evaluative arc may be based largely on the level of passion, whereas another person's overall evaluative arc may be based primarily on the level of intimacy. Very few existing studies illuminate how and why people's relationship trajectories are shaped by certain

constructs rather than others. However, research on abusive relationships indicates that trajectory composition may be quite consequential for predicting relationship dissolution. Although higher satisfaction, more investments, and poorer alternatives generally predict greater relationship stability (Le et al., 2010), more investments and poorer alternatives predict greater stability among women in abusive relationships, whereas satisfaction does not (Rusbult & Martz, 1995). In sum, the underlying composition of global evaluative trajectories may have significant relational consequences, above and beyond the global evaluation itself.

Density. As we widen the aperture, a fifth dimension emerges: People also differ in the extent to which trajectories are concentrated or dispersed over a given period of time in their life (see Figure 6). If trajectories are particularly dense, they may overlap, meaning that an individual experiences a positive romantic evaluation of multiple partners at the same time (Person A). If trajectories are dispersed, individuals might have long periods of time “between trajectories” during which they are not romantically interested in anyone (Person B).

One literature that is especially relevant to the density concept is the literature on predictors of infidelity (Allen et al., 2005; Blow & Hartnett, 2005; Buss, Goetz, Duntley, Asao, & Conroy-Beam, 2017; Drigotas & Barta, 2001). These predictors include actor effects, such as being less agreeable or less conscientious (Schmitt et al., 2004), being anxiously attached (Bogaert & Sadava, 2002), and being male (Petersen & Hyde, 2010); relationship-level effects, such as being less committed (Drigotas, Safstrom, & Gentilia, 1999), less satisfied (Glass & Wright, 1985), and poorer at communicating (Allen et al., 2008); and external factors, such as having weaker ties to the partner’s social network (Treas & Giesen, 2000) and having more opportunity to meet potential partners (e.g., Traeen & Stigum, 1998). Although most of this literature conceptualizes infidelity as an event that disrupts a primary relationship, the Relationship Trajectories

Framework represents infidelity as the overlap between two dynamically unfolding arcs that exert a mutual influence on each other.

A second, smaller literature bearing on the density concept is work on the duration of singlehood (DePaulo & Morris, 2005; Slotter & Emery, 2017). Some people are likely to remain single only briefly between relationships. Extraverts, for example, are more likely than introverts to date more people within a specific period of time (Paunonen, 2003). In addition, people who report having a greater fear of being single may not want to experience dispersed trajectories. Individuals who score high on this measure are motivated to meet new people to avoid being alone (Spielmann et al., 2013), and they are especially likely to attempt to renew relationships with their exes (Spielmann, MacDonald, Joel, & Impett, 2016). On the opposite end of the continuum, some individuals deliberately remain single for most or all of their adult lives (DePaulo & Morris, 2005).

Generally speaking, the density dimension could help to broaden the typical focus of close relationships researchers beyond an individual's current romantic relationship; very few studies have collected data on people's multiple romantic partnerships over time (for exceptions, see Eastwick, Harden, Shukusky, Morgan, & Joel, 2017; Robins, Caspi, & Moffitt, 2002). Examinations of concurrent romantic partnerships, as in the case of consensual nonmonogamy (Conley, Matsick, Moors, & Ziegler, 2017), are equally rare despite their cross-cultural and evolutionary relevance (Marlowe, 2003). Moreover, scholars do not have a strong sense of the extent to which people's past romantic relationship trajectories affect events and experiences in their future trajectories. The most relevant studies are those conducted by Brumbaugh and Fraley (2006, 2007), which have explored the way in which attachment patterns toward past romantic partners affect an individual's feelings about strangers (i.e., attachment transference; see also

Fraley, Heffernan, Vicary, & Brumbaugh, 2011). However, many important questions remain about whether and the degree to which early sexual and romantic experiences impact later ones; the density dimension emphasizes the benefits of adopting a longer time horizon with respect to the way the romantic lives of individuals are conceptualized.

Dyadic Trajectories

The five features reviewed above are useful for conceptualizing trajectories from the perspective of a given individual—that is, how does one person evaluate another person across time? However, dyadic phenomena and models pervade the close relationships literature (e.g., Bolger, Zuckerman, & Kessler, 2000; Felmlee & Greenberg, 1999; Laurenceau, Barrett, & Pietromonaco, 1998; Murray & Holmes, 2009; Oriña, Wood, & Simpson, 2002; Reis & Shaver, 1988; Schoenfeld & Loving, 2013; Simpson & Overall, 2014; Wieselquist, Rusbult, Foster, & Agnew, 1999), so the Relationship Trajectories Framework also needs to represent the way that two individuals evaluate each other over time.

Figure 7 illustrates two hypothetical individuals' romantic evaluation trajectories with respect to each other across time. Placing two trajectories side-by-side allows for the straightforward visual representation of actor and partner effects (e.g., need to belong exerts an actor effect on ascent, whereas physical attractiveness exerts a partner effect, Joel et al., 2017). Also, the addition of a second trajectory necessitates a new axis—the z-axis—which represents the extent to which the two individuals have a close (i.e., interdependent) relationship (Berscheid et al., 1989; Kelley, 1983). Closeness is a structural property of the dyad, namely the strength, frequency, and diversity of interconnections that exist between two people (Kelley et al., 1983). For this reason, in dyadic applications of the Relationship Trajectories Framework, closeness (on the z-axis) is identical for the two partners (as is duration, represented on the x-axis), whereas

two partners' evaluations of each other (on the y-axis) can and typically will differ.³ For the couple represented in Figure 7, the two partners have a very close relationship as romantic evaluations peak, a moderately close relationship as romantic evaluations start to decline, and a distant (nonclose) relationship as the trajectories approach the current date. The z-axis is symmetrical around the midpoint: Trajectories toward the center of the z-axis approach the limit of closeness (e.g., complete interdependence), whereas trajectories toward the edges of the z-axis approach the limit of distance (e.g., complete independence).

Just as the Relationship Trajectories Framework does not require any particular operationalization of evaluation for the y-axis, it also does not require any particular operationalization of closeness for the z-axis (as long as that operationalization is not more appropriately conceptualized as an evaluative measure, such as "I feel close to my partner"). A researcher could, for example, operationalize closeness as *frequency* (e.g., time spent interacting face-to-face with the partner), *diversity* (e.g., number of different activities performed with the partner), *strength* (e.g., the influence of the partner on one's plans, goals, and decisions), or a blend of all three (Berscheid et al., 1989). These indicators of closeness are independent of relationship length (i.e., the x-axis) and relationship evaluations (i.e., the y-axis), both empirically and theoretically. Dyadic applications of the Relationship Trajectories Framework can address at least three types of research questions, which we discuss in further detail below.

Partner evaluations affect each other over time. Partner A's evaluation of partner B at a given point in time is likely to impact partner B's evaluation of partner A at a concurrent or subsequent point in time. In other words, $Y_A \rightarrow Y_B$, and vice versa. One clear illustration of such

³ The term "dyadic" has two distinct meanings in the close relationships literature, both of which are represented visually in Figure 7. First, romantic evaluations (i.e., the y-axes) are dyadic in the sense they reflect one person's report about another person. Second, closeness (i.e., the z-axis) is dyadic in the sense that it is a property of the dyad; it is a variable that, at the conceptual level, characterizes both partners equally.

an effect in the existing literature is reciprocity of attraction: When partner B finds out that partner A likes him, B tends to like A more in return (Backman & Secord, 1959; Kenny, 1994). The close relationships literature also contains examples of one partner's relationship evaluation predicting the other partner's relationship evaluation at a later time-point (e.g., Le, McDaniel, Leavitt, & Feinberg, 2016). Such effects can be operationalized as residualized lagged associations (e.g., Wieselquist et al., 1999) or as partner effects in longitudinal applications of the Actor-Partner Interdependence Model (e.g., Cook & Kenny, 2005). Models could also examine the lag between partners' evaluations as an autocorrelation over time (Bolger & Shrout, 2007); that is, to what extent does partner A's evaluation at time x affect partner B's evaluation at time $x + 1$? If researchers collect a sufficient number of time-points, they can estimate how long partner A's evaluation reaches into the future to affect partner B's evaluations before decaying.

Trajectory similarity affects later evaluations. Two trajectories may be similar or dissimilar with respect to one or more of the five dimensions reviewed above, and the degree of similarity may predict relationship evaluations. For example, two partners' similar patterns of ascent might predict especially positive romantic evaluations in the future, or two partners' dissimilar thresholds for sex may predict especially negative evaluations in the future. An example of dissimilar sex thresholds for men and women was discussed earlier (see the Threshold section); such threshold differences may produce mind-reading challenges, particularly during early relationship development (Haselton, 2003), which could reduce romantic evaluations over time. Nevertheless, in the close relationships literature, studies that examine similarity in relationship evaluations and trajectories are uncommon (for an exception, see Schoenfeld & Loving, 2013).

Closeness and evaluations predict one another. Dyadic applications of the Relationship Trajectories Framework highlight how closeness or interdependence (properties of the dyad) might be associated with partners' romantic evaluations of each other. In other words, $Z \rightarrow Y_A$ or B , and vice versa. Some familiarity manipulations in the attraction literature can be conceptualized as closeness manipulations (Reis et al., 2011). In these studies, greater closeness (operationalized as increasing frequency of interactions) causes romantic evaluations to become increasingly positive. In established relationships, closeness predicts positive evaluations in established romantic relationships, but not among friendships (Berscheid et al., 1989).

The Relationship Trajectories Framework: Conclusion

Many scholars generate models of romantic relationships that have implicit or explicit temporal components, and longitudinal methods are common in the close relationships literature. The Relationship Trajectories Framework is a first attempt at synthesizing this literature to delineate the major features of relationship arcs—arcs that begin when two people first meet and continue until their relationship ends. Even though most scholars will be unable to examine arcs from start to finish—much less the many meaningful arcs that a person experiences over a period of years or decades—the framework encourages scholars to consider the period of time they study within the context of entire arc. In this way, the framework offers an organizational structure and, thus, a new way of thinking about familiar concepts; scholars can draw links between different, heretofore disconnected topic areas within the study of human mating relationships by applying the Relationship Trajectories Framework.

Because the framework is meta-theoretical, the five dimensions and the dyadic applications cannot, by themselves, generate specific, falsifiable predictions—nor is that its purpose. The Relationship Trajectories Framework requires input from theoretical models regarding the likely

relevance and magnitude of specific actor, partner, relationship-specific, and/or external forces that ought to affect specific outcomes. We now turn to two theories that illustrate how scholars can use this framework to generate novel research questions that address neglected issues or resolve ambiguities associated with temporal dynamics in romantic relationships. The first draws from some of our own published and unpublished work to illustrate how researchers can deductively derive new hypotheses within the framework. The second illustrates how the framework can aid researchers in conducting a synthesis of an existing, large-scale literature in a way that generates novel predictions.

Application 1: The Relationship Coordination and Strategic Timing (ReCAST) Model

As noted previously, there is a large theoretical and empirical gap between the close relationships and evolutionary psychological literatures in terms of how short-term versus long-term relationships are conceptualized. Are short-term relationships those that simply do not last long enough for close relationships researchers to study them with their methods? Or are short-term relationships distinct from long-term relationships even during their opening moments, perhaps because they entail the use of short-term (rather than long-term) strategies? Prior studies of short-term relationships are inconclusive because they were either hypothetical or examined participants' attraction to strangers at a single point in time (for a review, see Eastwick et al., 2018). By bringing relationship trajectories to bear on this issue, one can arrive at a new theoretical synthesis—the ReCAST Model—that helps to resolve these questions.

The ReCAST Model is grounded in the Relationship Trajectories Framework. It draws on the *shape* dimension by depicting short-term and long-term relationships as arc-shaped trajectories: Short-term and long-term relationships end at different points in time, primarily because they differ in the peak of romantic evaluations. The ReCAST Model also draws on the *composition*

dimension by positing that some evaluative components of trajectories (i.e., feelings of attachment, the desire to provide care) signal the activation of the attachment-behavioral system (Hazan & Shaver, 1994), which presumably evolved to facilitate pair-bond maintenance and parental effort (Eastwick, 2009; Fletcher, Simpson, Campbell, & Overall, 2015). These evaluations should be more pronounced in long-term than short-term relationships because attachment bonds are often not fully formed until a relationship matures.

The name “Relationship Coordination and Strategic Timing Model” reflects the two scholarly literatures that influenced the development of the model. The first influence is the close relationships literature (“relationship coordination”), especially its emphasis on the way people coordinate interdependence in romantic relationships (Rusbult & Van Lange, 2003). Core to ReCAST is the idea that relationship length is largely determined by interpersonal processes and dynamics that occur within the relationship and require time to develop. The second influence is the evolutionary psychological literature (“strategic timing”), especially its distinction between reproductive strategies that correspond to *mating effort* (i.e., taking risks and expending energy and time to secure matings) and *parental effort* (i.e., taking risks and expending energy and time to produce and raise offspring; see Gangestad & Simpson, 2000; Low, 1978). According to the ReCAST Model, the normative mating process in humans often involves a *within-dyad tradeoff* between mating effort and parental effort. That is, people exert greater mating effort early on in trajectories, and if the relationship endures, mating effort begins to wane as parental effort (in the form of attachment bonds and perhaps parenting) increases.

ReCAST Model: Predicates

The model is predicated on four established empirical findings—what economists call “stylized facts” (see Table 2).

Predicate 1: Romantic evaluations predict relationship length. The positivity of people's romantic evaluations strongly predicts the likelihood of relationship dissolution. People attempt to end romantic relationships (Le et al., 2010), or fail to pursue them in the first place (Eastwick & Finkel, 2008b), when their evaluations of their partners are insufficiently positive (e.g., when their satisfaction or romantic interest is low). Indeed, a recent meta-analysis documented that the strongest predictors of breakup are evaluations of the partner and/or the relationship (e.g., positive illusions, commitment, love), with effect sizes ranging from $d = .57$ to $.85$ (Le et al., 2010). As a general rule, satisfaction and the intention to maintain a relationship are tightly interwoven, even in subsistence, non-WEIRD samples (Winking, Eastwick, Smith, & Koster, in press). Although some people do remain in unfulfilling relationships or with partners they dislike (e.g., Rusbult & Martz, 1995; Slotter & Finkel, 2009), such relationships are exceptions to this general rule. Hence, relationship length is largely a function of whether romantic evaluations reach a sufficiently high level of positivity (i.e., above some threshold of acceptance) and remain that way across time (Kelley, 1983).

Predicate 2: Relationship-specific effects on evaluations are important (i.e., large). Romantic evaluations are a function of characteristics of the actor, the partner, the relationship, and external events. The largest effect sizes tend to be associated with relationship-specific forces (and sometimes with external events). Two literatures bear on this issue. First, studies that partition romantic evaluations using the social relations model (Kenny, 1994) consistently find that the largest component is relationship-specific variance—that is, relationship uniqueness rather than features of the actor or the partner (e.g., Joel et al., 2017; Krause, Back, Egloff, & Schmukle, 2014). Furthermore, relationship-specific variance often becomes larger as potential romantic partners get to know each other better over time (Eastwick & Hunt, 2014).

Second, in the large literature that documents predictors of romantic evaluations, the largest predictors tend to be measures of people's feelings about their partner and/or the relationship. For example, a confirmatory factor analytic model found that the most commonly assessed relationship-specific constructs (e.g., satisfaction, commitment, love) are strongly associated with global relationship evaluations (e.g., item-total $r_s \approx .55$; Fletcher et al., 2000). Moreover, the positivity of couples' real-life interaction patterns robustly predicts marital satisfaction meta-analytically ($r_s \approx .30$; Karney & Bradbury, 1995). External effects, such as stress, have similar effect sizes (Karney & Bradbury, 1995; Repetti, 1989). Features of the participant him/herself (i.e., actor effects) also predict relationship evaluations, but these effects are modest in size (e.g., the average meta-analytic effect of the Big 5 personality traits on marital satisfaction is $r \approx .20$; Heller, Watson, & Ilies, 2004). Partner effects—when they emerge—are about half this size ($r \approx .10$ meta-analytically; Le, Impett, Lemay, Muise, & Tskhay, 2018; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010) or smaller (Dyrenforth et al., 2010; Watson et al., 2004).

Predicate 3: Relationship-specific effects are difficult to assess early in relationships.

Evaluating the desirability of a potential mate is an essential task that humans evolved to solve (Buss & Schmitt, 1993), and this evaluative process often takes considerable time. Although perceiver (actor) and target (partner) effects can be assessed even before two people meet, relationship-specific effects on romantic evaluations require time in order to be assessed accurately (Finkel et al., 2012; Joel et al., 2017). Thus, the largest effects on romantic evaluations (see predicate 2) should come from judgments that develop gradually over time as two people get to know each other: for example, their level of sexual chemistry (Birnbaum, in press), the way they express emotions while solving problems together (Johnson et al., 2005), how they support each other and capitalize on each other's successes (Feeney & Collins, 2015;

Lahey & Orehek, 2011), or how they coordinate their goal pursuits (Fitzsimons, Finkel, & vanDellen, 2015). Some external effects can be assessed before two people meet (e.g., living in a stressful neighborhood), but many of the strongest external predictors (e.g., network support for the relationship, desirability of alternatives; Le et al., 2010) are difficult or impossible to assess early in the relationship formation process because they require knowledge of how the partner relates to the external predictor.

Predicate 4: Attachment-related processes take time to emerge. Mating effort and its concomitant motivations (e.g., passion) and behaviors (e.g., attempts to initiate sex) often emerge in the early moments of relationships. However, features associated with attachment bonds, such as using the partner as a source of support (e.g., safe haven, secure base; Feeney & Collins, 2015) typically take years to emerge fully (Fagundes & Schindler, 2012; Fraley & Davis, 1997; Hazan & Zeifman, 1994). Given that the attachment-behavioral system probably evolved to keep mates bonded in order to increase parental investment in dependent offspring (Eastwick, 2009; Fletcher et al., 2015, Hazan & Diamond, 2000; Stewart-Williams & Thomas, 2013), pair-bonding behaviors most likely reflect a blend of mating effort and parental effort. In other words, the tendency for ancestral humans to become attached to, and provide care for, each other should have (a) maintained relationships (i.e., mating effort) and (b) reduced conflicts of interest with respect to investing in existing (or future) offspring (i.e., parental effort; Durante et al., 2016). Accordingly, if a relationship does not last long enough, attachment and other features linked to parental effort may never reach full strength, limiting the ability of the attachment-behavioral system to affect the relationship and its trajectory.

ReCAST Model: Hypotheses

The ReCAST Model (see Figure 8) addresses these four well-established findings within the Relationship Trajectories Framework. The model depicts, or recasts, short-term and long-term relationships as relationship trajectories that start out as indistinguishable, but end at different points in time. The model also recasts the mating versus parental effort distinction as a shift that takes place within a dyad over time rather than (as in some evolutionary models) a tradeoff operationalized between-persons (e.g., Belsky, Steinberg, & Draper, 1991, Del Giudice, 2009, Draper & Harpending, 1982, Ellis, Figueredo, Brumbach, & Schlomer, 2009, Figueredo et al., 2006, Mascaro, Hackett, & Rilling, 2013).

Figure 8 depicts three hypothetical global romantic evaluation trajectories over time. The double-solid line represents an ongoing romantic relationship, the double-dashed line is a long-term romantic relationship that has ended, and the single-dashed line is a short-term romantic relationship that has ended.⁴ The grey background in Figure 8 corresponds to the expenditure of mating effort (beginning in the early phases of the relationship), whereas the dotted background corresponds to parental effort (which predominates in the later phases); the two forms of effort overlap in the intermediary phases. Several novel hypotheses flow from the ReCAST Model (see Table 3).

Hypothesis 1: On average, short-term and long-term romantic evaluation trajectories are initially indistinguishable; eventually, evaluations in most long-term relationships achieve a higher peak than in most short-term relationships. Because the strongest influences on global romantic evaluations (i.e., relationship-specific effects; predicate 2) are difficult to assess until partners know each other reasonably well (predicate 3), the eventual length of a

⁴ Ongoing short-term relationships could also be depicted in this framework, but we have omitted them because they have proven empirically elusive to date. For example, in the package of studies we describe below (Eastwick et al., 2018), participants displayed a strong tendency to label their most recent short-term relationships as “ended” (~85%) rather than “ongoing” (~15%). See also Hypothesis 2 below.

relationship will often be unpredictable until it is well under way—until many relationship events and behaviors have occurred. Hence, short-term and long-term trajectories should be indistinguishable, on average, until a sufficient amount of time has passed. As a result, initial attraction and the subsequent pattern of ascent should be similar in short-term and long-term relationships. When these trajectories diverge, romantic evaluations should continue to rise to a higher peak in most long-term relationships, whereas they should plateau or decline in short-term relationships.

Recent empirical evidence supports this central hypothesis of the ReCAST Model (Eastwick et al., 2018). In five studies, participants were told to think about a real “long-term committed romantic relationship” or a “short-term romantic relationship (e.g., a fling, one-night-stand, or brief affair)” they had experienced.⁵ They then reported the dates of up to 48 memorable events that might have taken place in this relationship (e.g., first time together one-on-one, first sexual intercourse, first major disagreement/fight), beginning with the moment they first met the partner. They also reported the extent to which they experienced romantic interest (i.e., a global romantic evaluation) for the partner at each event.

Figure 9 presents the romantic interest data from the relationships that had ended ($N = 262$ long-term relationships, and $N = 443$ short-term relationships) and the ongoing long-term relationships ($N = 246$) for all five studies. The data bear a strong resemblance to the normative trajectories anticipated by the ReCAST Model (Figure 8). Ended relationships are arc-shaped, with long-term relationships having a higher arc than short-term ones. Supporting Hypothesis 1, participants reported similar levels of romantic interest at the beginning of both short-term and long-term relationships. Also, romantic interest rose at the same rate in both short-term and long-

⁵ The minimalist wording of these prompts precisely matches what is used in the existing literature on long-term and short-term mating strategies, maximizing the likelihood that participants brought to mind the same constructs assessed in prior studies.

term relationships for the first 10-12 events, which occurred in almost the same sequence in both types of relationships on average (see Table 4). This time-period often lasted for months in real time, encompassing the getting-acquainted process up through initial sexual contact (e.g., the first kiss). After that point, romantic interest in short-term relationships plateaued and then declined, whereas romantic interest in long-term relationships rose to a higher peak. Romantic interest eventually declined in long-term relationships that ended, but remained elevated in most ongoing long-term relationships.

In summary, people felt more positive about their partners when in long-term than in short-term relationships, but not until many events had unfolded. Early in relationship development, short-term and long-term relationships had very similar evaluations and sequences of events.

Hypothesis 2: In the early portion of relationship trajectories, most people do not know whether they are pursuing a short-term or a long-term relationship. In most circumstances, individuals can report their global romantic evaluation of another person they have just met or recently started dating—people know, in the moment, how romantically positive or negative they feel about someone at any time-point. Early on, however, people often lack knowledge about important relationship-specific factors (e.g., compatibility; predicate 3) that eventually may influence the outcome of the relationship. Therefore, people may not initially know where the relationship is going, making it challenging for them to form confident judgments about whether they are involved in a short-term or a long-term relationship. Given that short-term and long-term trajectories initially overlap considerably (Hypothesis 1; Figure 9), people should be more likely to express uncertainty than certainty about whether their current relationship is (or will be) short-term or long-term.

In a recent study, we found support for this idea. Specifically, we asked single undergraduate students to answer several questions about a real person in their lives who met four criteria: “(1) you are romantically interested in the person, (2) you have spent one-on-one time with the person, (3) you have not (yet) engaged in any sexual or physical intimacy with the person, and (4) you are not (yet) involved in a committed romantic relationship with the person.”

Participants, therefore, reported on fledgling romantic interests (or “crushes”) that correspond to the early portion of ReCAST trajectories, in that romantic evaluations were nonzero, but no sexual or relationship formation events had occurred. We then asked participants the type of relationship they were pursuing: long-term, short-term, or “I don’t know.” The responses (with exact wordings) are shown in Table 5. The most common response was “I don’t know,” both when participants considered what their relationship was in the moment and when they pondered what they wanted it to be. These findings indicate that people typically begin romantic relationships with a “Let’s see where it goes” strategy before they have sufficient information to determine how positively they feel about the potential partner.

Hypothesis 3: Wanting someone as a short-term partner is associated with liking him/her “a little.” People may be uncertain whether they want a short-term or a long-term relationship with a partner early on, and yet they can respond to items such as “this person is a desirable long-term partner” or “this person is a desirable short-term partner” without confusion, even when reporting on strangers or hypothetical individuals. What exactly are people thinking about when they answer these items? According to the ReCAST Model, long-term relationships reach a high evaluative peak, whereas short-term relationships only reach a middling peak (Hypothesis 1; Figure 9). If participants have these schemas in mind when they complete items assessing their desire for someone as a “short-term partner,” they might be indicating that they

like him or her a little—enough to pass a threshold in the desire for some amount of sexual contact, but not enough to want a long-term relationship that would eventually lead to attachment and pair-bonding. Accordingly, ReCAST predicts that target-specific, long-term interest items should be highest for partners whom an individual likes a great deal, but target-specific, short-term interest items should be highest for partners whom an individual likes a little.

To test this hypothesis, we asked undergraduate students to nominate three peers of their romantically-preferred sex (e.g., heterosexual women nominated three male peers). They were told that one of the targets should be someone for whom they experienced “no romantic interest,” one should be someone for whom they experienced “a little, but not a great deal” of romantic interest, and one should be someone for whom they experienced “a great deal” of romantic interest. For each target, participants reported the extent to which they desired the person as a *long-term partner* (“I would like to have a long-term, committed romantic relationship with [name]”) and a *short-term partner* (“I would like to have a short-term romantic relationship [e.g., a one-night sexual encounter or brief affair] with [name]”).

Means for these items are presented in Figure 10. With respect to the long-term item, participants rated the “strong interest” partner higher than both the “little interest” partner, $t(125) = 10.39, p < .001, d = 1.86$, and the “no interest” partner, $t(125) = 14.25, p < .001, d = 2.55$. With respect to the short-term item, participants rated the “little interest” partner higher than both the “strong interest” partner, $t(125) = 3.41, p = .001, d = .61$, and the “no interest” partner, $t(125) = 9.93, p < .001, d = 1.78$. Indeed, the short-term item revealed a strong, significant (negative) quadratic pattern across the three targets, $F(1,125) = 71.16, p < .001, \eta^2 = .36$. These data are consistent with the hypothesis that wanting someone for a short-term relationship is a

euphemism for liking him or her “a little,” whereas wanting someone for a long-term relationship means that the individual likes him or her a great deal.

Hypothesis 4: Greater mating effort typically characterizes the early portion of trajectories (both short-term and long-term), whereas greater parental effort typically characterizes the later portion of trajectories (long-term only). Global romantic evaluations must remain elevated long enough to: (a) avoid breakups (predicate 1) and (b) allow time for the attachment-behavioral system to become fully engaged (predicate 4). When they do, partners should experience a within-dyad tradeoff between the expenditure of mating effort versus parental effort (Gangestad & Kaplan, 2005; Gangestad & Simpson, 2000). That is, partners should typically devote more time and energy to mating effort (e.g., sexual overtures, attempts to attract partners and form relationships with them) early in a relationship trajectory. However, they should shift more time and energy to behaviors that are a blend of mating and parental effort (e.g., attachment, caregiving) as time passes, which in turn should presage (especially in ancestral environments) parental effort behaviors, such as investing time and resources in raising offspring. Most short-term relationships do not last long enough for parental effort to become relevant.

The Eastwick et al. (2018) studies described above provide support for this hypothesis. Participants in these studies also reported whether they experienced a variety of specific desires at each time-point. Some of these desires reflected the attachment-behavioral system—feelings of psychological attachment, strong caregiving motivation, and the desire to evaluate the partner’s potential as a parent—which were linked to parental investment in our hominid ancestors, as discussed above. These features characterized long-term more than short-term relationships, but not immediately. Long-term relationships eventually exhibited these features as

time passed, but they began at similarly low levels in both short-term and long-term relationships. Regardless of whether participants were describing a short-term or a long-term relationship, the earlier portions were characterized by features associated with greater mating effort, such as sexual desire, trying to make a favorable impression on the partner, and attempting to promote oneself. These patterns are consistent with a within-dyad tradeoff between mating and parental effort in that partners begin by exerting more mating effort in relationships, and if the relationship progresses into a long-term one, parental effort gradually increases.

The ReCAST Model: Constraints and Falsifiability

Theories and models are especially powerful when they specify findings that would be inconsistent with the model, as such findings would indicate that the model must be altered or jettisoned. We offer a few of these specifications here. For example, to the extent that scholars find evidence that information about two people obtained before their initial encounter predicts relationship-specific effects (e.g., sexual chemistry, effective support, capitalization, or goal support) with reasonable effect sizes, then short-term versus long-term relationship length would be “knowable” much earlier than depicted by the ReCAST Model. Right now, machine learning approaches have cast doubt on the possibility that relationship-specific attraction can be predicted from information assessed prior to an initial face-to-face interaction (Joel et al., 2017). Nevertheless, it is possible that future compatibility algorithms could be developed to predict long versus short-term relationship length a priori (Finkel et al., 2012). Also, some mating relationships fall outside the scope of the ReCAST Model. Like any application of the Relationship Trajectories Framework, it would not apply to cases where people are unable to evaluate their partner on two or more discrete, separate occasions. Also, the model does not apply to nonconsensual sexual relationships, such as rape.

The ReCAST Model would not be falsified by the abundant existing evidence that some people have more short-term relationships than others. As will become clear below, individuals who are higher in sociosexuality may have more short-term relationships for a variety of reasons that can all be represented within the trajectories framework. However, the current version of the ReCAST Model would require alteration if, for example, it could be demonstrated experimentally early in the acquaintance process that some tactics or mating behaviors (e.g., making subtle physical contact; Schmitt & Buss, 1996) enhance the probability of forming a short-term but not a long-term relationship. At present, no evidence supports this idea in real-life mating contexts.

The ReCAST Model: Conclusion

The ReCAST Model applies the shape and composition dimensions of the Relationship Trajectories Framework to generate novel, falsifiable hypotheses regarding short-term and long-term relationships. In doing so, it trains a spotlight on a crucial gap in the empirical literature—the period of time between an initial encounter and the formation of an official relationship—and offers a possible integration of the close relationships and evolutionary psychological perspectives concerning relationship length. The ReCAST Model is similar to prior evolutionary models of human mating in that it (a) incorporates tradeoffs between mating effort and parental effort, and (b) posits that parental effort is more characteristic of long-term than short-term relationships. However, it differs from these models by depicting short-term and long-term mating processes not as independent strategies (e.g., Buss & Schmitt, 1993), but as trajectories that differ in their progression along a normative sequence; short-term and long-term relationships are eventually categorically distinct, but they are not so initially.⁶ Some basic level

⁶ The ReCAST Model bears some similarity to Buss and Schmitt's (1993) hypothesis that people (women especially) may use short-term mating to evaluate prospective long-term mates. ReCAST differs,

of romantic interest in short-term partners is typically sufficient to inspire sexual desire, impression management, and other motivations that usually appear early in the normative romantic sequence, but insufficient to fully activate features such as attachment and caregiving, which take longer to unfold. Accordingly, higher levels of romantic interest are needed to produce meaningful levels of *both* sexual desire and, eventually, pair-bonding.

Application 2: The Sociosexuality Trajectory Model

The second theoretical model—the Sociosexuality Trajectory Model—focuses on individual differences instead of normative processes. It leverages three dimensions of the Relationship Trajectories Framework—shape, threshold, and density—along with the dyadic component of the framework to propose a new agenda for research on individual differences in sociosexuality. In what follows, we identify several robust findings within the sociosexuality literature, and then hypothesize that shape, threshold, and density can help to explain (i.e., are the mechanisms underlying) previously documented associations between sociosexuality and various relational/sexual experiences.

Sociosexuality is the degree to which individuals are willing to engage in casual sex (i.e., sex outside of a committed relationship). It is one of the most widely studied individual difference variables in the psychology of human mating, significantly advancing research in both the evolutionary and close relationship traditions. This key construct, however, has never been examined within a framework that depicts how mating relationships systematically shift and change over time. This omission is unfortunate because investigating differences in the shape, threshold, and density of the emerging relationships of unrestricted (i.e., high sociosexuality) and

however, by suggesting that mating effort and associated behaviors (e.g., sexual desire, desire to impress the partner) normatively characterize the early portions of romantic relationship development for both sexes, and that these evaluations shape short-term versus long-term motives (i.e., whether partners want the relationship to be short or long) rather than being shaped by them.

restricted (low sociosexuality) individuals could yield important insights into why they often have different experiences in sexual and romantic relationships.

Key Features of Sociosexuality

The sociosexuality construct (Gangestad & Simpson, 1990) and its measures (e.g., Simpson & Gangestad, 1991; Penke & Asendorpf, 2008) focus on variation in “sociosexual” attitudes and behaviors, as first noted by Kinsey, Pomeroy, and Martin (1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953). When responding to the revised sociosexuality orientation inventory (SOI-R; Penke & Asendorpf, 2008), for example, unrestricted (compared to restricted) individuals report more sex partners within the past year, have had more one-night stands, and more frequently engage in sex with partners without necessarily expecting to have a long-term relationship with them. Unrestricted individuals also do not require love or commitment before having sex, believe that sex without love is okay, like casual sex, have more sexual fantasies about alternative partners (including someone they just met), and feel more sexually aroused by partners to whom they are not committed. These measures of sociosexuality tend to be fairly stable over time (Simpson & Gangestad, 1991; Penke & Asendorpf, 2008).

Highly unrestricted (versus restricted) individuals tend to be more extraverted, disinhibited, and sensation-seeking, whereas highly restricted individuals typically are more agreeable and inhibited (Gangestad & Simpson, 1990; Wright & Reise, 1997). In addition, males tend to be more unrestricted than females (Penke & Asendorpf, 2008; Simpson & Gangestad, 1991), and unrestricted men have higher testosterone levels than restricted males (Puts et al., 2015).

The Sociosexuality Trajectory Model: Predicates

Several cross-sectional studies conducted within the evolutionary psychology and close relationships traditions have investigated links between sociosexuality and a wide variety of

sexual, mating, and romantic outcomes. Here, we discuss six that have received the strongest and most consistent empirical support (Table 6). These six findings are not restatements of the definition of sociosexuality—the willingness to have sex outside of a committed relationship—but rather reflect purported downstream consequences of this willingness. When discussing what unrestricted people tend to be like, the comparison group is always restricted people.

Predicate 1: Unrestricted individuals readily perceive, and behave in ways that facilitate obtaining, sexual partners. In initial attraction settings, unrestricted individuals perceive they have more access to sexual partners and behave in ways that actually facilitate greater access. For example, they over-perceive sexual interest from opposite-sex others (Howell, Etchalls, & Penton-Voak, 2012; Kohl & Robertson, 2014; Maner et al., 2005; Perilloux, Easton, & Buss, 2012), selectively attend to attractive opposite-sex others (Maner et al., 2003), and are more competitive in mating contexts with same-sex others (Ainsworth & Maner, 2012; Simpson, Gangestad, Christensen, & Leck, 1999). They also flirt more frequently and more effectively with potential romantic partners (Penke & Asendorpf, 2008; Simpson, Gangestad, & Biek, 1993). These behaviors may explain why people tend to desire unrestricted partners in initial attraction contexts (Joel et al., 2017).

Predicate 2: Unrestricted individuals are initially attracted to physically attractive partners. When individuals report their attraction to potential partners (which researchers typically depict in photographs), unrestricted individuals prefer especially physically attractive romantic partners (i.e., partners who may possess markers of “good genes”; Gangestad & Simpson, 2000; see also Gangestad, Thornhill, & Garver-Apgar, 2010; Lustgraaf & Sacco, 2015; Price, Pound, Dunn, Hopkins, & Kang, 2013; Simpson & Gangestad, 1992). Unrestricted women also place greater value on masculine physical and behavioral attributes in men (O’Connor et al.,

2014; Perilloux, Cloud, & Buss, 2013; Quist, Smith, & DeBruine, 2012; Sacco, Jones, DeBruine, & Hugenberg, 2012).

Predicate 3: Unrestricted individuals have lower quality, less stable relationships. Once a relationship has formed, unrestricted individuals report having lower quality relationships (e.g., less passion, lower satisfaction, less commitment) and are at greater risk for relationship breakup (Foster, Shira, & Campbell, 2006; Hebl & Kashy, 1995; Rodrigues & Lopes, 2017; Webster et al., 2015).

Predicate 4: Unrestricted individuals are more likely to have extra-pair relationships. In general, unrestricted individuals are more likely to engage in extra-pair relationships while being involved in an ongoing, established one (Gangestad et al., 2010; Rodrigues, Lopes, & Pereira, 2017; Rodrigues, Lopes, & Smith, 2016; Seal, Agostinelli, & Hannett, 1994).

Predicate 5: Unrestricted individuals prefer a variety of sexual experiences. Unrestricted individuals prefer to (and generally do) have sex with a wider variety of sexual partners (Penke & Asendorpf, 2008; Simpson & Gangestad, 1991). For example, they express interest in taking part in a wider array of sexual experiences (e.g., having sex with “someone I didn’t care about,” having an “illicit affair,” taking part in an orgy; see Gangestad et al., 2010).

Predicate 6: Unrestricted individuals become involved in a larger number of relationships. Unrestricted individuals become involved in more romantic relationships—both uncommitted and “official” relationships—within a given period of time (Penke & Asendorpf, 2008; Townsend & Wasserman, 2011). Moreover, when they are considering the possibility of forming a sexual relationship, they are less picky about the exact type of sexual relationship that will emerge (e.g., a one-time encounter vs. a multiple-time encounter). That is, they often “take what they can get” (Wilkey, 2016).

The Sociosexuality Trajectory Model: Hypotheses

Sociosexuality predicts the outcomes described above, but how or why do these effects occur? In what follows, we draw from the shape, threshold, and density dimensions to propose four mechanisms that could explain these effects. At present, these four hypotheses remain largely untested, partly because they have never been formally proposed and partly because longitudinal data are rare in the sociosexuality literature.

Hypothesis 1: Unrestricted individuals should experience more rapid ascent in their trajectories. With regard to the shape dimension, the current available cross-sectional evidence suggests that unrestricted individuals should have trajectories in which initial romantic evaluations, perhaps especially with respect to feelings of passion, increase more rapidly than is true of restricted individuals. Hypothesis 1 is consistent with the fact that unrestricted persons over-perceive sexual interest in potential partners, flirt more (and more effectively) with prospective romantic partners, and are more romantically desirable, on average (predicate 1). These behaviors should generate stronger initial romantic interest in both unrestricted individuals themselves (i.e., an actor effect) and in their potential partners (i.e., a partner effect). Both the actor and partner effects on ascent are depicted in Figure 12. Hypothesis 1 is also aligned with unrestricted individuals' initial attraction to more physically attractive partners (predicate 2), who might be especially desirable for passionate sexual intimacy early in relationship development (cf. Howell et al., 2012; Kohl & Robertson, 2014; Maner et al., 2005; Perilloux et al., 2012). Nevertheless, no studies thus far have examined how sociosexuality is associated with initial attraction to a particular partner over time.

Hypothesis 2: Unrestricted individuals should experience a lower peak in their trajectories. Also with regard to the shape dimension, unrestricted individuals should generally

feel less positive than restricted individuals about their official romantic partners. Accordingly, their romantic evaluations may not reach or maintain the same peak of positivity as is true of most restricted individuals. Hypothesis 2 is consistent with evidence that unrestricted individuals tend to be less satisfied with, and less committed to, their current official romantic partners (predicate 3). Additionally, unrestricted individuals are more likely to be aware of (or involved in) alternative relationships (predicate 4), which could lead them to experience less positive romantic evaluations of their current partner/relationship, especially if their alternatives are desirable and immediately available. This actor effect of sociosexuality on peak is also depicted in Figure 12.

To our knowledge, only one longitudinal study has examined the effects of sociosexuality on romantic evaluations during ongoing relationships (French, Altgelt, & Meltzer, 2017). It found that unrestricted newlyweds reported lower satisfaction when they got married (an intercept effect), which suggests a lower peak. Intriguingly, sociosexuality was unrelated to the speed at which individuals' satisfaction trajectories declined over time, suggesting that predicate 3 (see above) may primarily be a function of peak rather than descent.

Hypothesis 3: Unrestricted individuals should have lower thresholds for engaging in sexual intimacy with partners. With regard to the threshold dimension, unrestricted persons should have lower thresholds (i.e., lower standards) for engaging in physical intimacy.

Hypothesis 3 is consistent with the finding that unrestricted individuals engage in sex with romantic partners relatively sooner after first meeting them (Gangestad, Thornhill et al., 2010; Penke & Asendorpf, 2008; Simpson & Gangestad, 1991), and they are more likely to pursue alternative sexual experiences, such as having sex with people they do not necessarily like

(predicate 5). Direct tests of this hypothesis (e.g., using Guttman scaling techniques and other approaches that can identify thresholds) are likely to be fruitful.

Hypothesis 4: Unrestricted individuals should have a higher density of romantic relationships. Unrestricted persons should also have trajectories with higher densities than restricted individuals. This would be indicated by greater overlap (i.e., concurrent romantic interest in or concurrent romantic involvement) with more than one romantic partner at a time, or by shorter intervals between the ending of one relationship and the beginning of another. Several findings are consistent with Hypothesis 4. Unrestricted individuals, for example, are more likely to have extra-pair partners or be involved in multiple concurrent relationships (predicate 4). Greater trajectory density is also consistent with the fact that unrestricted individuals have not only more sex partners, but also more official relationship partners (Penke & Asendorpf, 2008; Townsend & Wasserman, 2011); they meet more people to whom they are attracted and pursue romantically (predicate 6).

Sex Differences in Sociosexuality

As noted above, men score higher than women in sociosexuality; in other words, some amount of variance in sociosexuality is due to sex. Thus, some of the hypotheses we propose above may illuminate sex differences in sociosexuality, whereas others may be independent of sex differences. Consider Hypothesis 3: Given that men have lower thresholds for sex (see Threshold section above), a lower threshold for sex among unrestricted individuals could be explained by the fact that unrestricted individuals are more likely to be men. Now consider Hypothesis 2: Given that men and women probably do not differ in their peak evaluations (Eastwick et al., 2018), a lower peak among unrestricted individuals cannot be explained by sex.

Accordingly, the Relationship Trajectories Framework may help isolate which downstream consequences of sociosexuality are due to, or independent of, participants' sex.

The Sociosexuality Trajectory Model: Constraints and Falsifiability

In formulating the Sociosexuality Trajectory Model, we inductively generated four specific hypotheses, all of which need to be tested with appropriate longitudinal data that assesses the shape, threshold, and density of the actual relationship trajectories of unrestricted and restricted individuals. Unrestricted and restricted sociosexuality might not be associated with all four of the trajectory patterns hypothesized above. It is possible, for instance, that differences in threshold and density alone might explain the distinct relationship trajectories of restricted and unrestricted people, with no need to entertain shape. Because our four sociosexuality hypotheses are inductive and, therefore, somewhat more speculative than the deductively generated ReCAST hypotheses, the disconfirmation of any one of them would not necessarily undermine the Sociosexuality Trajectory Model as a whole. However, disconfirming evidence for all four hypotheses would undermine its utility considerably.

The Sociosexuality Trajectory Model: Conclusion

In conclusion, one novel feature of the Relationship Trajectories Framework is that it allows investigators to identify a priori and then rigorously test different trajectory parameters to discern how individual differences are related to relational outcomes with respect to each of the five trajectory dimensions. Previous research has demonstrated that sociosexuality is associated with several romantic outcomes, and the Sociosexuality Trajectory Model explains these effects by identifying four possible differences between restricted and unrestricted individuals—differences that are operationalized at the level of relationship trajectories.

Additional Applications of the Framework

In this final section, we showcase the breadth and applicability of the Relationship Trajectories Framework by describing three brief applications to contexts commonly examined by scholars of human mating.

Individual Differences and Tradeoffs. Many theories and models in the close relationships and evolutionary psychological literatures posit a central role for individual difference constructs; as with the Sociosexuality Trajectory Model, applications of the framework to these constructs could generate a host of new predictions. Consider the many individual differences that reflect *tradeoffs* in evolutionary theorizing. For example, life history theory suggests that people who encounter harshness and/or unpredictability during childhood traverse a developmental pathway that results in increased pursuit of short-term mating relationships and unstable pair-bonds (i.e., fast strategies) instead of long-term mating relationships and enduring pair-bonds (i.e., slow strategies) (Belsky, 2012; Belsky et al., 1991; Del Giudice, 2009; Ellis et al., 2009; Simpson et al., 2012). Additionally, men who possessed good genes (as indicated, for example, by low fluctuating asymmetry or high testosterone) may have increased their reproductive success ancestrally by devoting more energy to mating effort rather than parenting effort (Gangestad & Simpson, 2000; Roney & Gettler, 2015).

Generally speaking, these tradeoff theories imply that an advantage conferred by an individual difference in the earlier mating effort portion of a trajectory may be offset by a disadvantage in the later parenting effort portion (and vice versa). Thus, shape differences should emerge in that individual differences in life history strategy or good genes show (a) positive actor or partner effects on ascent and (b) negative actor or partner effects on descent. Testosterone effects are consistent with this hypothesis (Roney & Gettler, 2015), although studies that better capture the entire relationship arc are needed.

Now consider the contrapositive logic: If an individual difference construct does *not* exhibit a tradeoff pattern with respect to relationship trajectories, it probably does not merit a tradeoff theoretical model. Physical attractiveness offers a case in point. Some tradeoff theoretical perspectives on attractiveness propose that attractive people should devote more effort to mating than parenting (e.g., Chu, Hardaker, & Lycett, 2007; Ma-Kellams, Wang, & Cardiel, 2017). The available evidence, however, does not support this claim. Physical attractiveness does confer an advantage in the early phases of trajectories (a meta-analytic partner effect on initial attraction $r = .37$; Eastwick, Luchies, Finkel, & Hunt, 2014a), but it carries no appreciable disadvantages during later phases (in established relationships, the actor effect $r = .03$, Meltzer, McNulty, Jackson, & Karney, 2014; the partner effect $r = .08$, Eastwick et al., 2014). At present, a trajectory framework intersects with existing findings to suggest that extant tradeoff perspectives on physical attractiveness are not tenable; it appears that being physically attractive makes individuals more appealing early in a relationship, but it does not harm the relationship later on.

Individual Differences in Attachment Orientations. The Relationship Trajectories Framework is also well-suited to clarifying how individual differences in adult attachment orientations affect how relationships develop across their full time-span. Such development should be tied to the central motives harbored by highly avoidant and highly anxious people.

According to Bowlby (1973), highly avoidant people have been rejected by their prior attachment figures, which leads them to develop cautious attitudes about becoming emotionally close to and dependent on future romantic partners and to value independence, autonomy, and self-reliance (Mikulincer, 1998). Highly anxious people, on the other hand, have experienced inconsistent care from earlier attachment figures (Bowlby, 1973), which leads them to yearn for more emotional closeness and dependence with future partners and to value actions (e.g.,

intimate self-disclosure early in a relationship) that can potentially stabilize or enhance their flagging sense of felt security (Mikulincer, 1998).

These key motivational differences are likely to influence relationship trajectories in several predictable ways, perhaps by moderating the normative process of deepening self-disclosure that causes trajectories to rise (Altman & Taylor, 1973; Collins & Miller, 1994). With respect to the shape dimension, for example, most highly avoidant people should have slower ascent, and they may even behave in ways (e.g., engaging in distancing behavior) that attempt to slow their partner's ascent. They also may have lower peaks and perhaps more rapid descent later in relationships. Given their tendency to be more unrestricted (e.g., Brennan & Shaver, 1995), highly avoidant people may also display different thresholds than less avoidant (i.e., more secure) people by engaging in sexual intercourse somewhat earlier in relationship development, but still not consider a relationship as official or exclusive when sex has occurred.

Highly anxious people should have markedly different trajectories. With respect to shape, for instance, highly anxious individuals should experience faster ascent (given that they yearn for greater emotional closeness and dependence), and they may engage in behaviors that attempt to accelerate their partner's ascent. Also, they may experience higher peaks and perhaps more fluctuating patterns of both ascent (as their relationships develop) and descent (as they end). In addition, highly anxious individuals might have different thresholds as revealed by engaging in sexual intercourse earlier during relationship development than less anxious (i.e., more secure) people, and by viewing the relationship as being official or exclusive following sex. The take-away point is that the interpersonal motives that people bring into initial and relationship formation encounters should have a bearing on the nature and patterning of their relationship trajectories over time.

Scaffolding from Micro- to Macro-Relationship Processes. One of the principal strengths of relationship science is its longstanding theoretical and empirical commitment to studying the moment-to-moment dynamics of specific interactions between partners (e.g., Bodenmann, 2005; Gottman, 1979; Kelley et al., 1983; Reis & Shaver, 1988). How exactly do second-to-second or minute-to-minute changes in relational behaviors and evaluations intersect with the macro-relational perspective made possible by considering an entire relationship trajectory arc?

First, micro-relational processes are likely to be shaped by the unique culture of each relationship—a culture that coalesces over the long stretch of time that precedes a researcher’s observations (Finkel, 2017). Crucial elements of this culture are likely to manifest in trajectory dimensions: Thresholds for engaging in particular behaviors (e.g., sex, confrontation) may shift depending on whether one’s global trajectory is ascending or descending, and entrenched habits that appear to reflect stable personality traits (e.g., neuroticism) may actually be rooted in events and trajectory patterns that occurred earlier in the relationship. Partners interacting in the laboratory bring their specific trajectory histories with them—histories that begin, we have argued, with their initial encounter.

Second, micro-relational processes can scaffold up to influence the future of a trajectory. Moment-to-moment responding can have consequences for whether a relationship remains intact or dissolves (e.g., Bodenmann & Cina, 2006; Gottman, 1994; Karney & Bradbury, 1995). However, the temporal line that connects momentary responses to partner or relationship evaluations that span days, months, or years has not been fully illuminated. Studies of reactivity have begun this endeavor by examining how momentary ups and downs affect people’s global evaluations of their relationships (e.g., Jacobson, Follette, & McDonald, 1982; McNulty, O’Mara, & Karney, 2008; Neff & Karney, 2009). This work suggests that, in some relationships,

the global trajectory has its own natural gravity that continues unaffected by momentary negativity, whereas in other relationships, negative interactions gradually accelerate a person's descent. If we expand the time horizon of this work, additional patterns may become apparent. The overall trajectory in some relationships, for example, may be affected by momentary negativity in a purely additive, gradual fashion, whereas in others it might exhibit a "catastrophic" pattern such that the trajectory shifts suddenly and strongly once many negative events accumulate (Bak, 1996). Thus, even for scholars who primarily focus on moment-to-moment relationship experiences, the Relationship Trajectories Framework emphasizes myriad possible mechanisms that might connect these experiences to the global outcomes that relationship scholars seek to understand.

Conclusion

We began this article by identifying limitations of the close relationships and evolutionary psychological literatures with respect to how both literatures conceptualize the time-course of sexual and romantic relationships. We then advanced a meta-theoretical framework—the Relationship Trajectories Framework—to begin to fill these gaps and presented two new theoretical models utilizing this framework to derive several falsifiable predictions. The ReCAST model addresses normative features of romantic relationships; it differentiates short-term and long-term relationships, and identifies how and when relationship length should be predictable. The Sociosexuality Trajectory Model illustrates how relationship trajectories can clarify individual differences in the way that people form, maintain, and end relationships.

More generally, the Relationship Trajectories Framework can aid scholars in developing novel predictions and additional models that capture the full time-course of people's relationships. This framework can be used to identify different types of mating patterns, some of which may reflect the unique ways in which women and men of different ages and from different

cultures form and end relationships over time. The breadth of a trajectory-inspired focus has the potential to generate a literature that depicts not only the processes that characterize existing romantic relationships, but also the processes that unfold as individuals initiate relationships and as people move from one relationship to the next, regardless of whether those relationships ultimately last for extended—or limited—stretches of time.

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Table 1 – Relationship Trajectory Framework Dimensions

Dimension	Definition	Example Predictor
1 Shape		
Ascent	The extent to which the normative rise in evaluations at the beginning of a trajectory is fast or slow	Familiarity (Reis et al., 2011)
Peak	The overall evaluation levels ultimately reached by a trajectory	Responsiveness (Huston et al., 2001)
Descent	The extent to which the normative decline in evaluations at the end of a trajectory is fast or slow	Stress (Conger et al, 1999)
2 Fluctuation	The extent to which evaluations are variable over time	Trust (Campbell et al., 2010)
3 Threshold	The extent to which evaluations are linked to the desire/willingness to perform particular behaviors	Participant sex (see text)
4 Composition	The extent to which global evaluations are built upon specific underlying constructs (e.g., passion, intimacy, trust)	Relationship abuse (Rusbult & Martz, 1995)
5 Density	The extent to which trajectories are concentrated or dispersed over a given period of time in a person's life	Extraversion (Paunonen, 2003)

Table 2 – Predicates Forming the Foundation of ReCAST

	Predicate	Key references
1	Romantic evaluations predict relationship length.	Eastwick & Finkel, 2008; Le et al., 2010
2	Relationship-specific effects on evaluations are important (i.e., large).	Eastwick & Hunt, 2014; Fletcher et al., 2000; Karney & Bradbury, 1995
3	Relationship-specific effects are difficult to assess early in relationships.	Finkel et al., 2012; Joel et al., 2017
4	Attachment-related processes take time to emerge.	Fagundes & Schindler, 2012; Hazan & Zeifman, 1994

Table 3 – Hypotheses Generated by ReCAST

	Hypothesis
1	On average, short-term and long-term romantic evaluation trajectories are initially indistinguishable; eventually, evaluations in most long-term relationships achieve a higher peak than in most short-term relationships.
2	In the early portion of relationship trajectories, people tend not to know whether they are pursuing a short-term or a long-term relationship.
3	Wanting someone as a short-term partner is associated with liking him/her "a little."
4	Greater mating effort typically characterizes the early portion of trajectories (both short-term and long-term), whereas greater parental effort typically characterizes the later portion of trajectories (long-term only).

Table 4 – Average Order of the First 12 Events in Long-term and Short-term Relationships

Event	Long-term order	Short-term order
first met the person	1	1
first flirted	2	2
first spent time together one-on-one	3	3
first went out together in a group (e.g., a party)	4	4
first went on a short date (e.g., coffee/drinks)	5	7
first held hands/touched	6	5
first told the person you were romantically interested	7	6
first kiss	8	10
you first met his/her friend(s)	9	8
first went on a long date (e.g., dinner, dancing, movie)	10	12
he/she first met your friend(s)	11	9
first make-out	12	11

Note: Data are an average of the five empirical studies reported in Eastwick et al. (2018).

Table 5 – Participants’ Categorization of Real-Life Romantic Interests Before the Relationship Becomes Sexual

	A short-term relationship	A long-term relationship	“I don’t know”	χ^2
My relationship with _____ is (check all that apply):	12%	11%	82%	106.28***
What type of relationship would you like to have with _____ in the future (check all that apply)?	8%	31%	60%	43.64***

Note: $N = 73$.

*** $p < .001$

Table 6 – Predicates Forming the Foundation of the Sociosexuality Trajectory Model

	Predicate	Key references
1	Unrestricted individuals readily perceive, and behave in ways that facilitate obtaining, sexual partners.	Maner et al., 2003; Simpson et al., 1999
2	Unrestricted individuals are initially attracted to physically attractive partners.	Gangestad & Simpson, 2000
3	Unrestricted individuals have lower quality, less stable relationships.	Hebl & Kashy, 1995; Webster et al., 2015
4	Unrestricted individuals are more likely to have extra-pair relationships.	Seal et al., 1994
5	Unrestricted individuals prefer a wider variety of sexual experiences.	Gangestad et al., 2010
6	Unrestricted individuals become involved in a larger number of relationships.	Penke & Asendorpf, 2008

Note: The comparison group for these effects for unrestricted individuals is restricted individuals.

Table 7 – Hypotheses Generated by the Sociosexuality Trajectory Model

Hypothesis	
1	Unrestricted individuals should experience more rapid ascent in their trajectories.
2	Unrestricted individuals should experience a lower peak in their trajectories.
3	Unrestricted individuals should have lower thresholds for engaging in sexual intimacy with partners.
4	Unrestricted individuals should have a higher density of romantic relationships.

Note: The comparison group for these effects for unrestricted individuals is restricted individuals.

Figure Captions

Figure 1: The shape dimension. Relationship trajectories can vary in ascent (Panel A), peak (Panel B), and descent (Panel C).

Figure 2: The fluctuation dimension. Relationship trajectories can exhibit little variability over time (left side of figure) or a great deal of variability (right side of figure).

Figure 3: The threshold dimension. Relationship trajectories can differ in the extent to which romantic evaluations are linked to specific behaviors. The height of each dotted line indicates the extent to which the person would need to experience a positive evaluation of the partner in order to want to perform the corresponding behavior.

Figure 4: Average romantic interest thresholds for “one minute continuous lip kissing” and “sexual intercourse, face-to-face” depicted separately for men and women. Women reported that they would need to experience considerably stronger romantic interest to have sex with a (hypothetical) partner than men did.

Figure 5: The composition dimension. Panel A depicts a normative sequence such that global evaluations are initially driven by passion more than intimacy, then later driven by intimacy more than passion. Panel B depicts how, depending on the relationship, global evaluations may be driven by some specific constructs (e.g., passion, left side) rather than others (e.g., intimacy, right side) throughout their time course.

Figure 6: The density dimension. In a person’s life, relationship trajectories can be relatively concentrated and overlapping (Person A) or relatively dispersed and nonoverlapping (Person B).

Figure 7: An illustration of dyadic trajectories, with two people reporting their romantic evaluations of each other. The closeness (i.e., interdependence) of the two partners is represented by the z-axis and is symmetrical around the midpoint, whereas evaluations (i.e., the y-axis) can differ for the two partners at a given time point.

Figure 8: The ReCAST Model. Normative long-term (double lines) and short-term (single line) romantic partner trajectories; long-term relationships are depicted separately by breakup status (current = solid lines; ended = dashed lines). Early on, relationship trajectories are characterized by more mating effort (solid gray background); later, relationships are characterized by more parental effort (dotted background).

Figure 9: Average level of romantic interest reported by participants about their real-life short-term (dotted line) and long-term (solid line) relationships at each event (data from Eastwick et al., 2018). The number of events varied across participants, so these trajectories were calculated until the point that less than half of the original N remained. Then, the second-to-last and last means depicted for each trajectory correspond to the second-to-last and last events reported by all participants who contributed to the trajectory. Bars depict 1 SE above and below the mean.

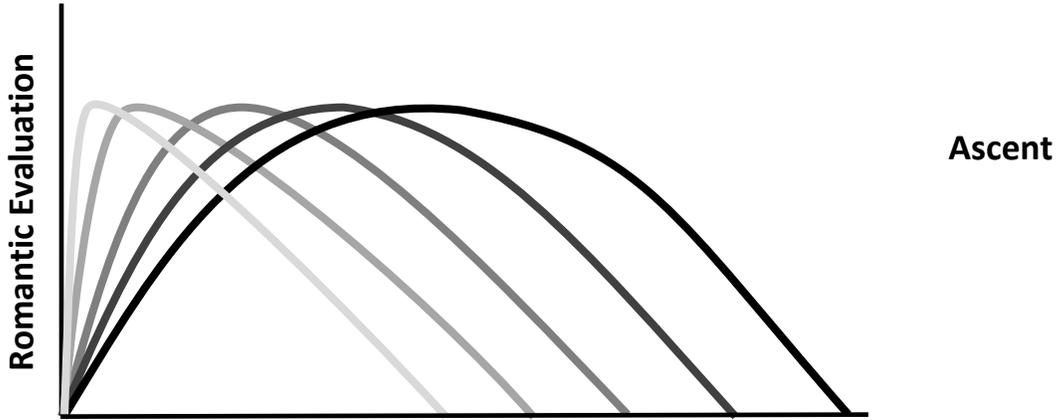
Figure 10: $N = 126$ participants’ level of interest in forming a short-term relationship (grey bars) and long-term relationship (white bars) with three targets: One for whom they experienced no romantic interest, one for whom they experienced a little romantic interest, and one for whom they experienced a great deal of romantic interest.

Figure 11: The Sociosexuality Trajectory Model. Top and bottom timelines depict the four major differences between high (unrestricted) and low (restricted) sociosexuality individuals. 1. Ascent is faster in high than low sociosexuality; 2. Peak is lower in high than low sociosexuality; 3. Threshold for sex is lower in high than low sociosexuality; 4. Density is greater in high than low sociosexuality.

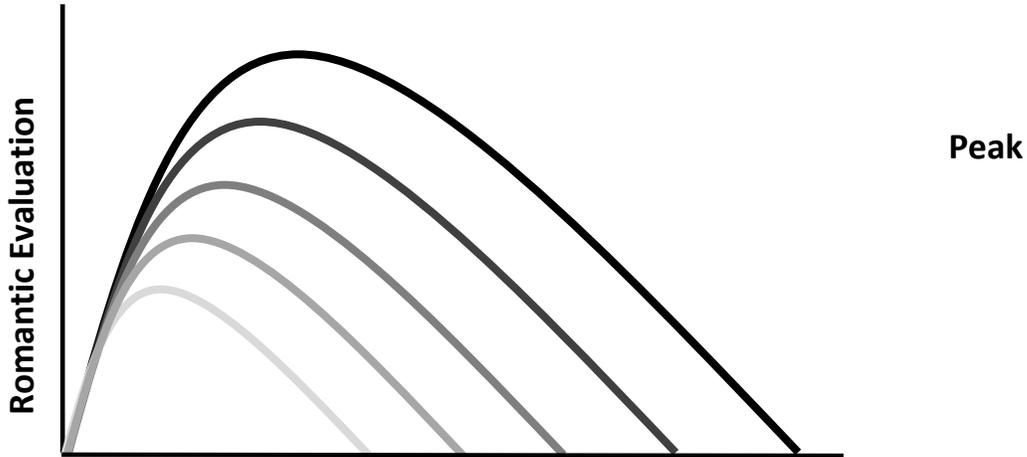
Figure 12: A dyadic illustration of the actor and partner effects predicted by Hypothesis 1 and 2 in the Sociosexuality Trajectory Model. The illustration depicts three effects that are predicted to emerge by shifting the actor (pink trajectory) from low (faded line) to high (bright line) sociosexuality. 1 = the positive actor effect of sociosexuality on the actor's own ascent; 2 = the positive partner effect of sociosexuality on the partner's (blue trajectory) ascent; 3 = the negative actor effect of sociosexuality on the actor's own peak.

Figure 1 – Dimension 1: Shape

A



B



C

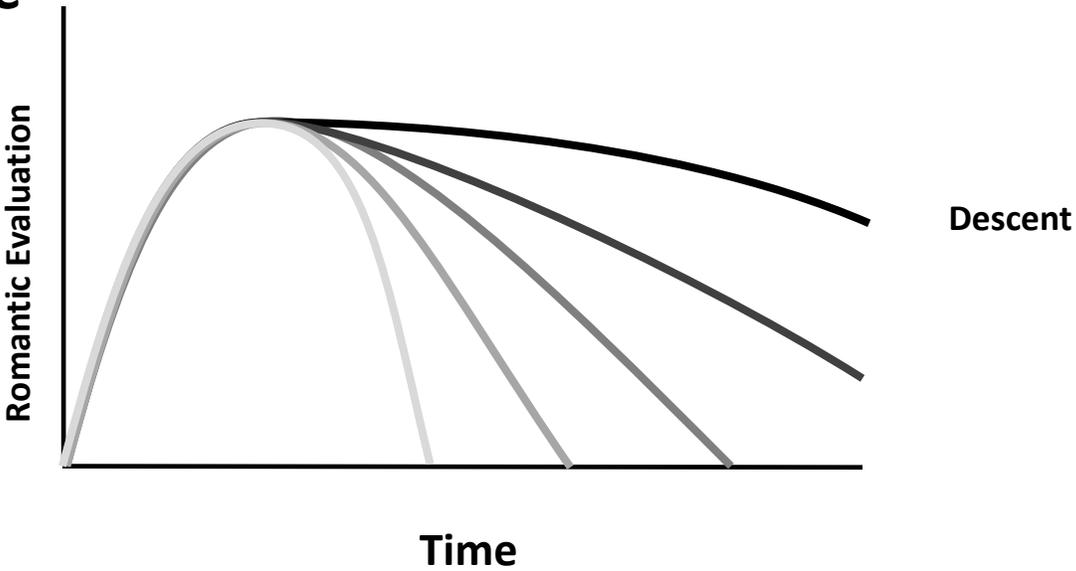


Figure 2 – Dimension 2: Fluctuation

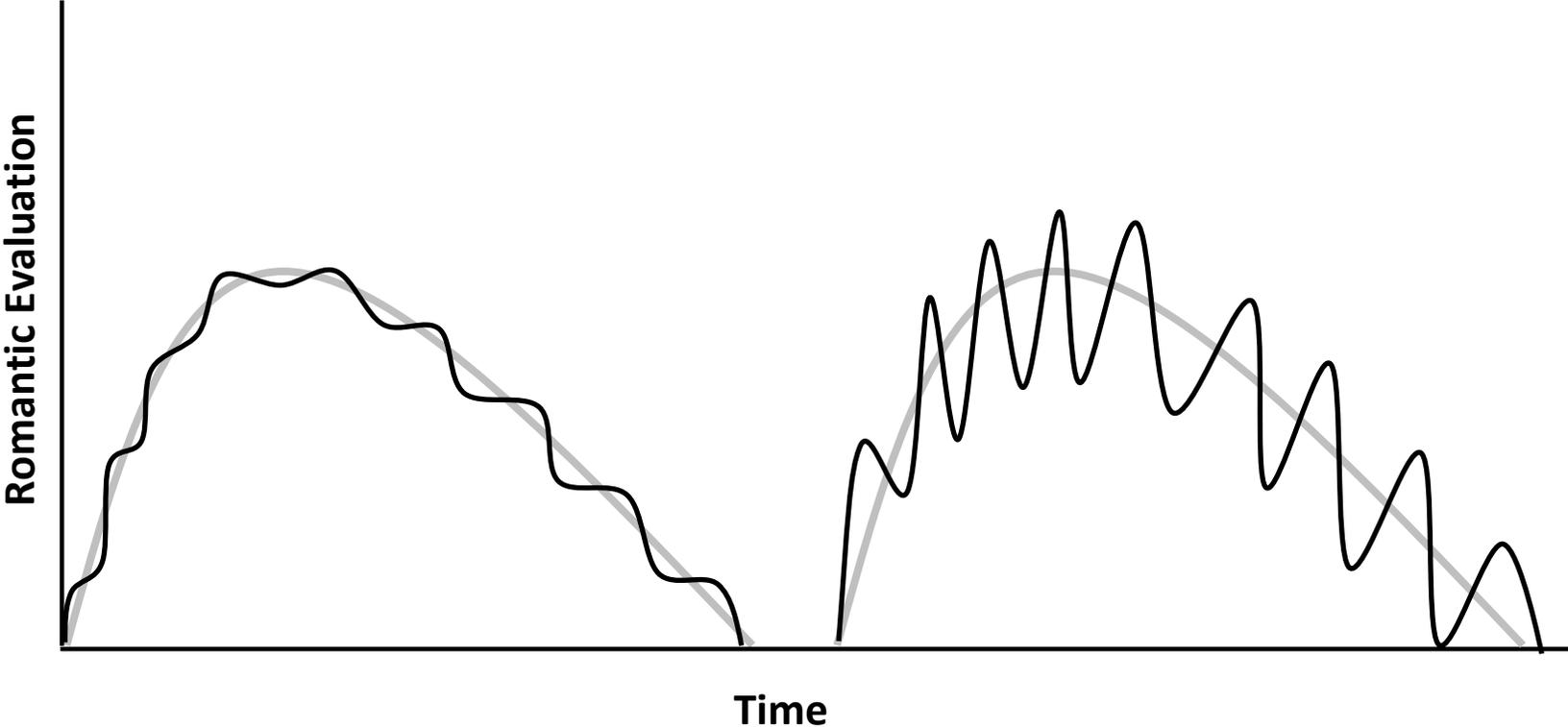


Figure 3 – Dimension 3: Threshold

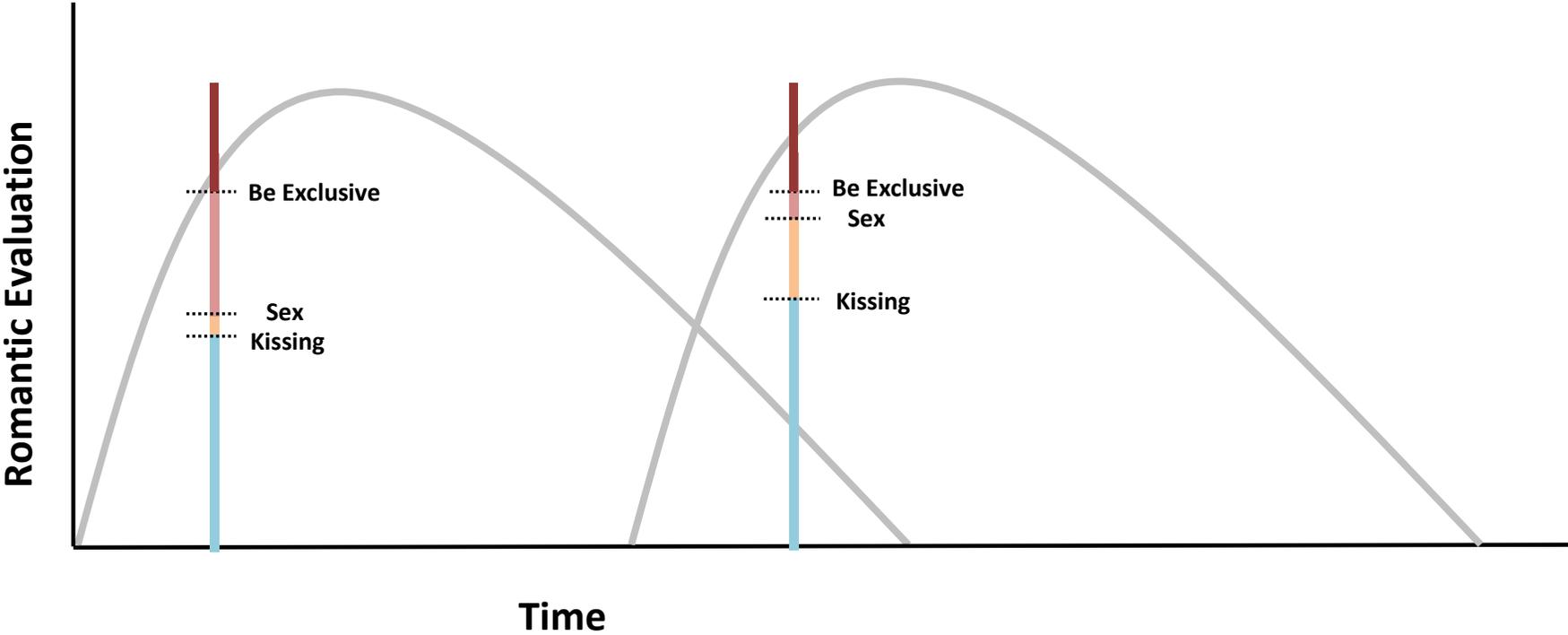


Figure 4 – Sex Differences in Thresholds

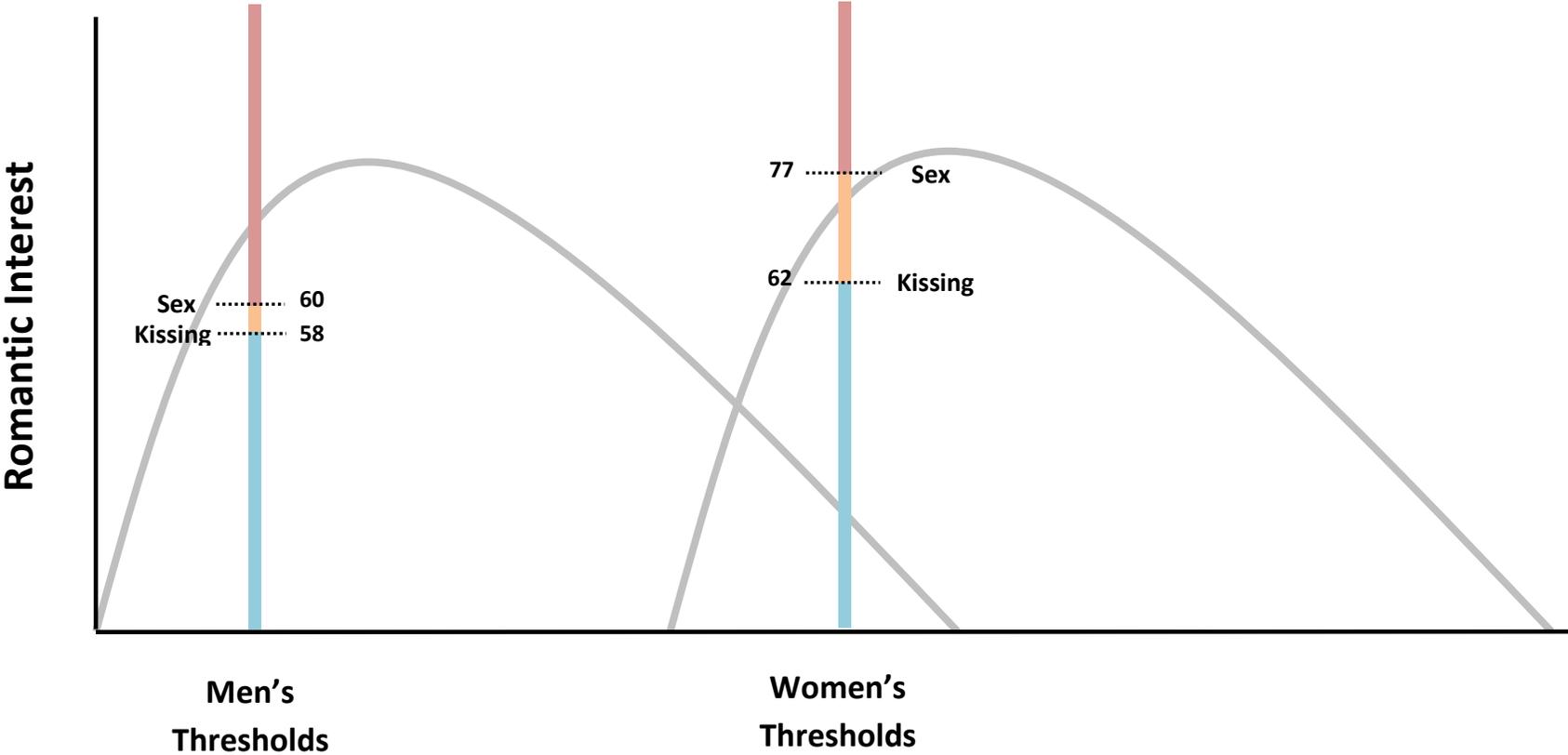
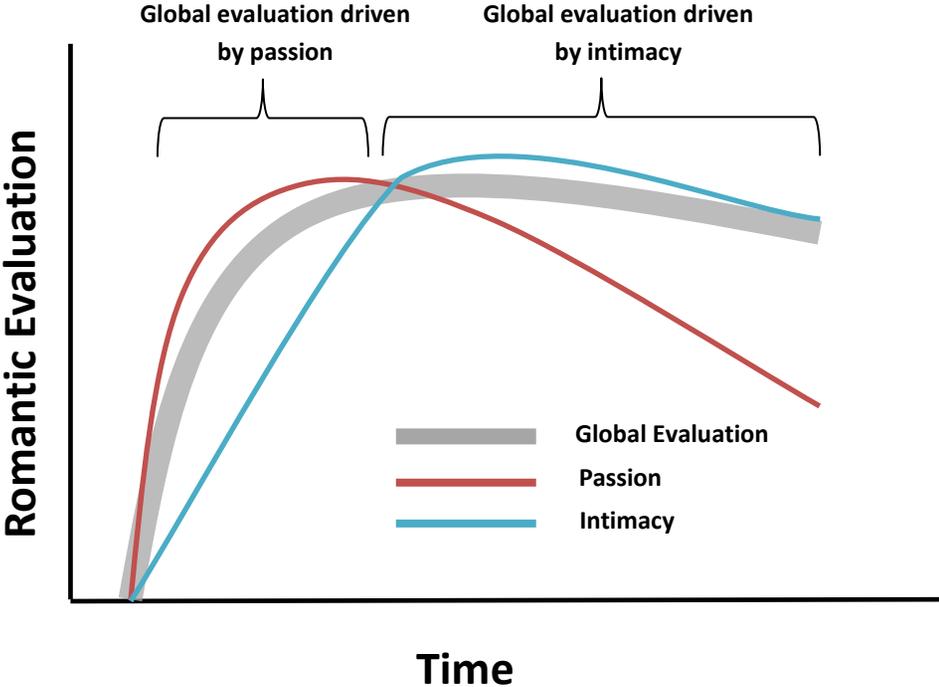


Figure 5 – Dimension 4: Composition

A



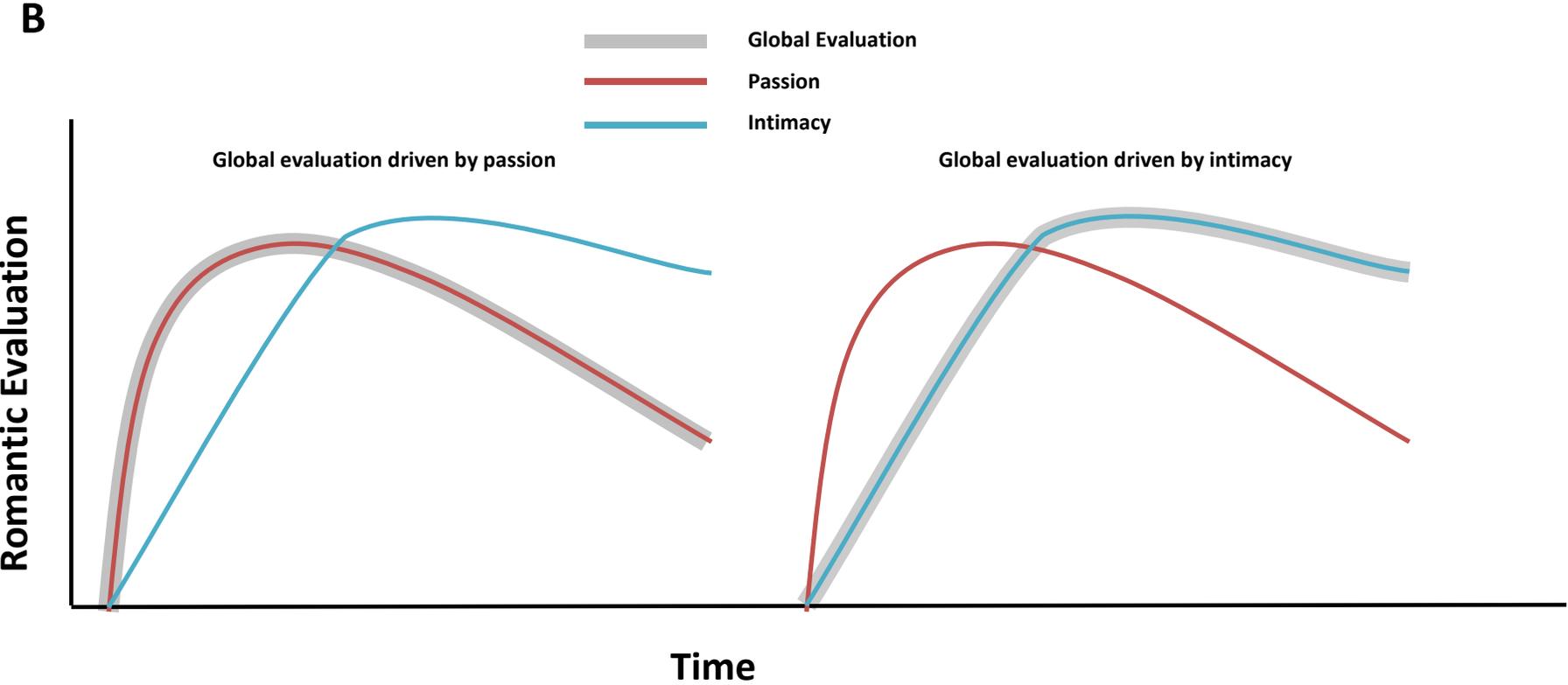


Figure 6 – Dimension 5: Density

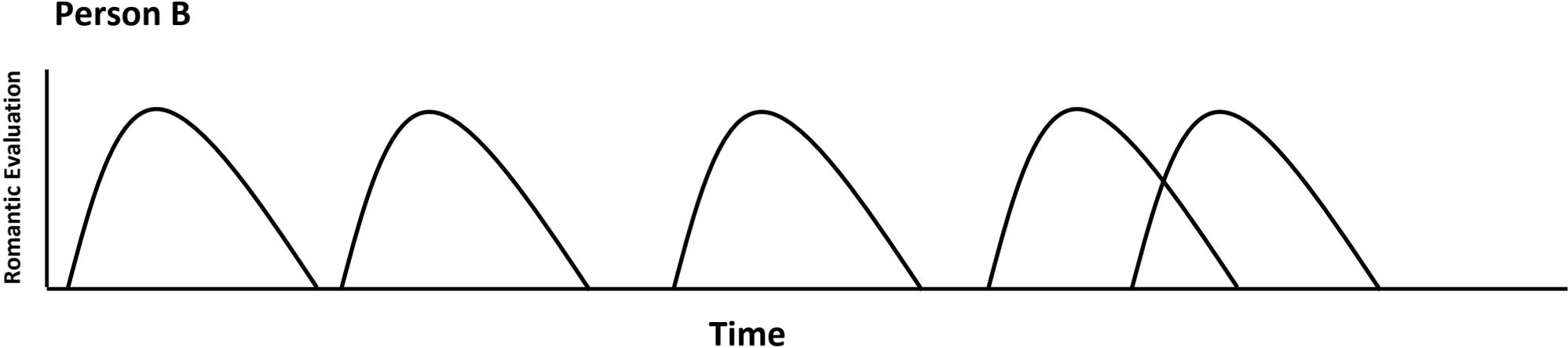
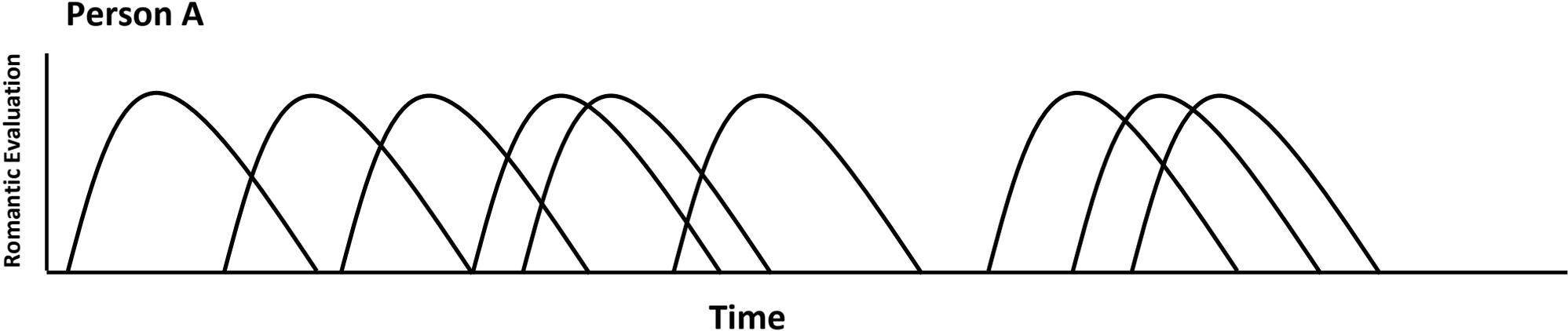


Figure 7 – Dyadic Relationship Trajectories

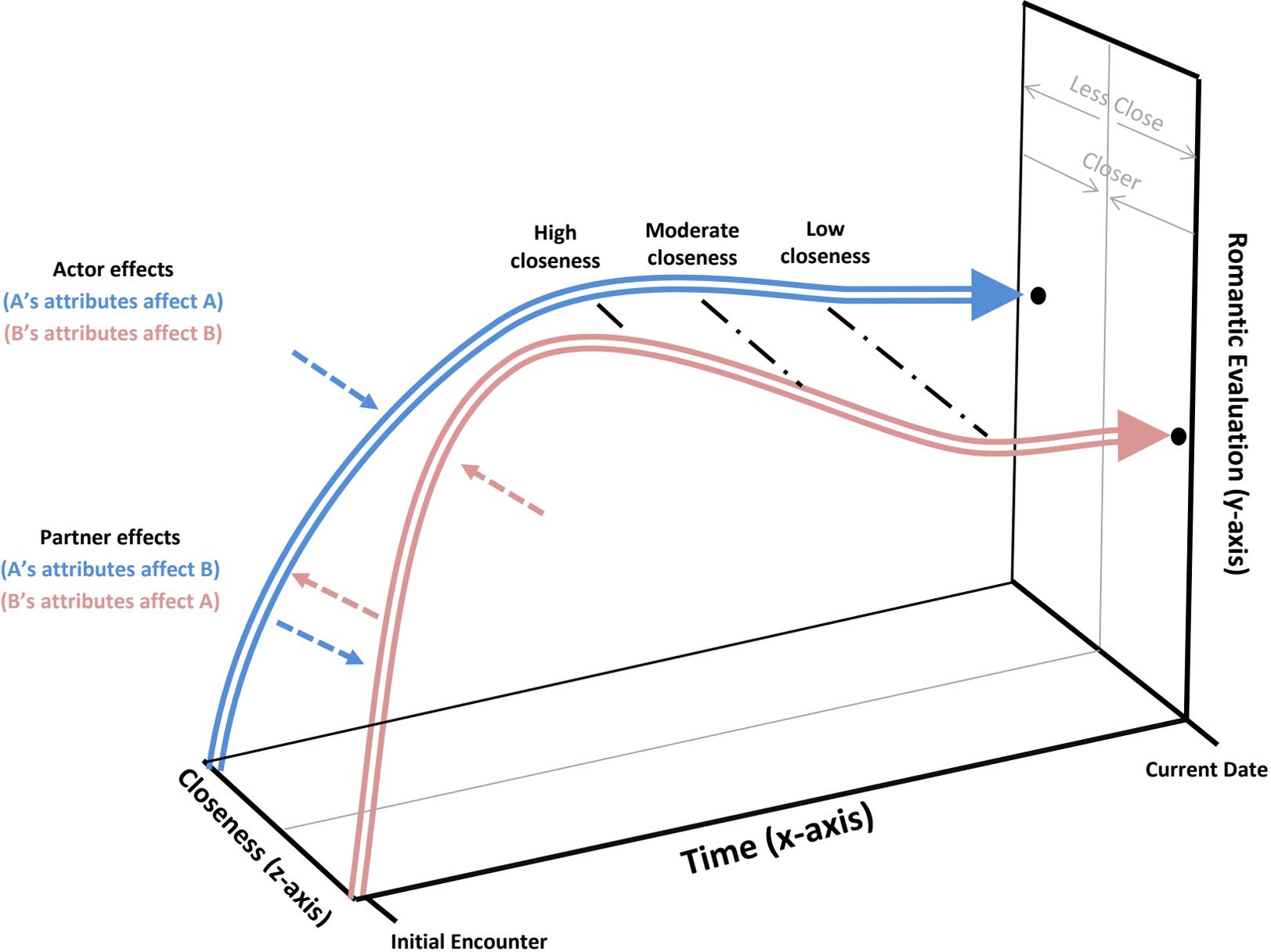


Figure 8 – The Relationship Coordination and Strategic Timing (ReCAST) Model Theoretically-derived Trajectories

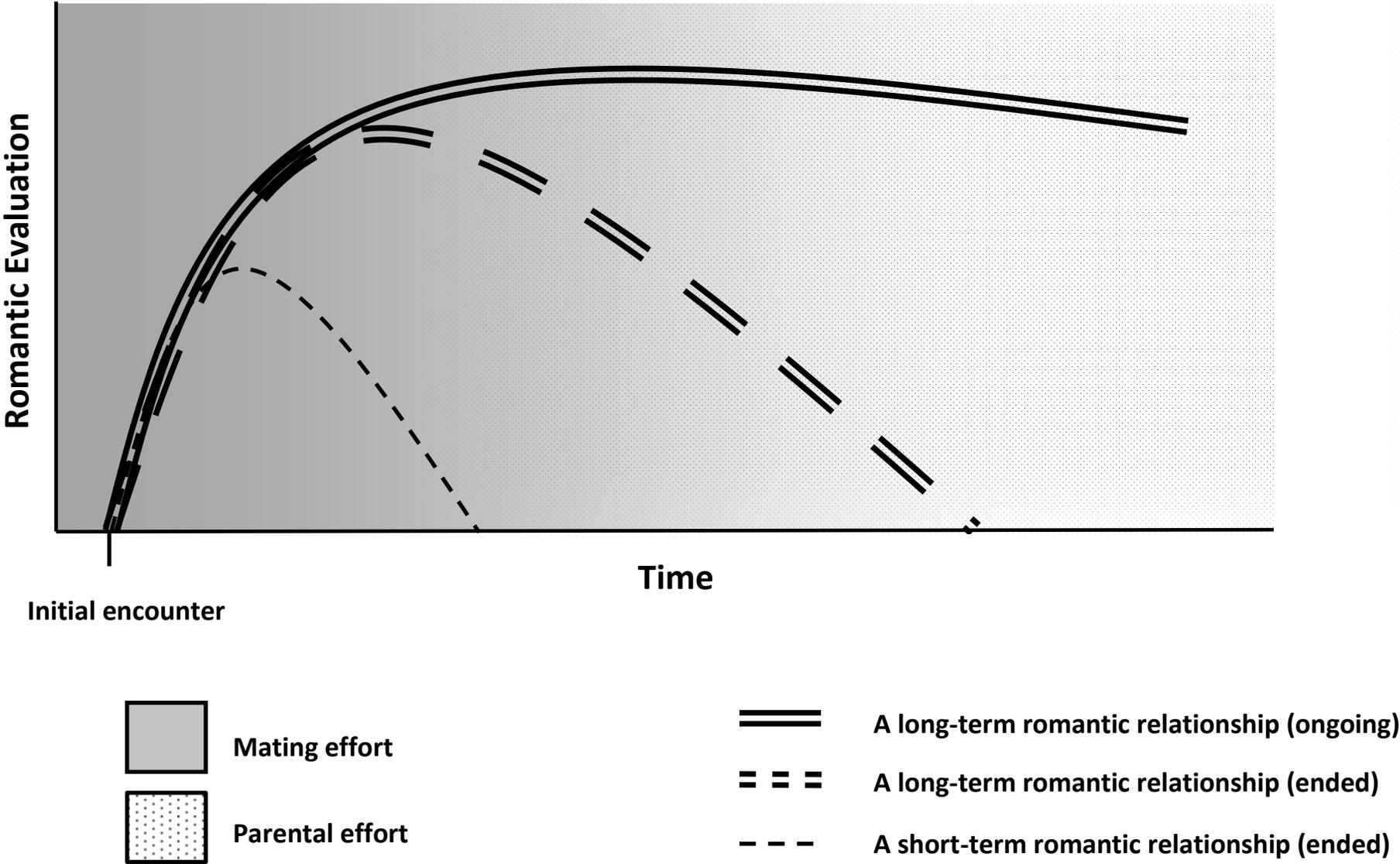


Figure 9 – Romantic Interest Data from Actual Long-term and Short-term Relationships

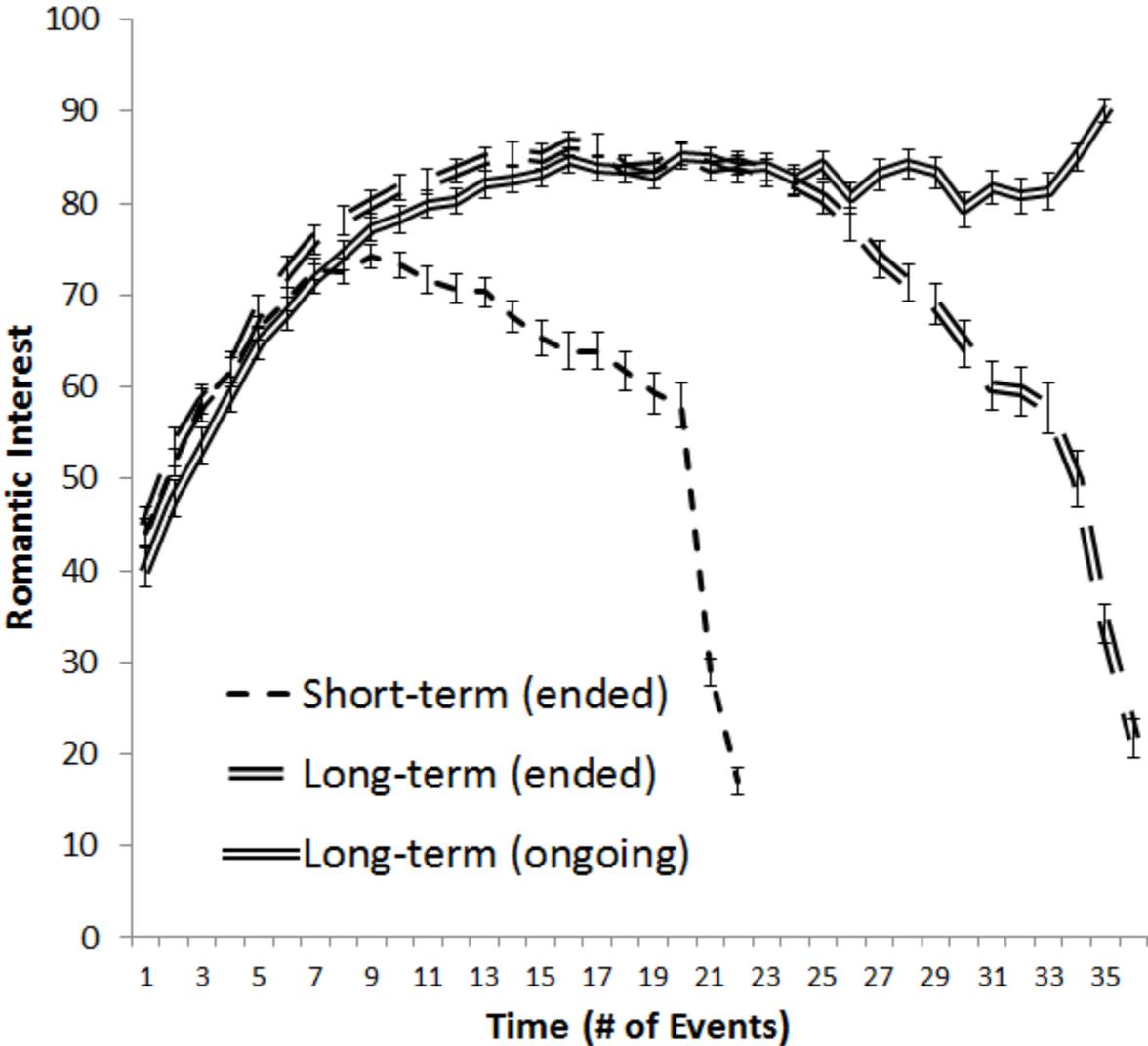


Figure 10 - Long-term and Short-term Desire for Three Real-Life Individuals

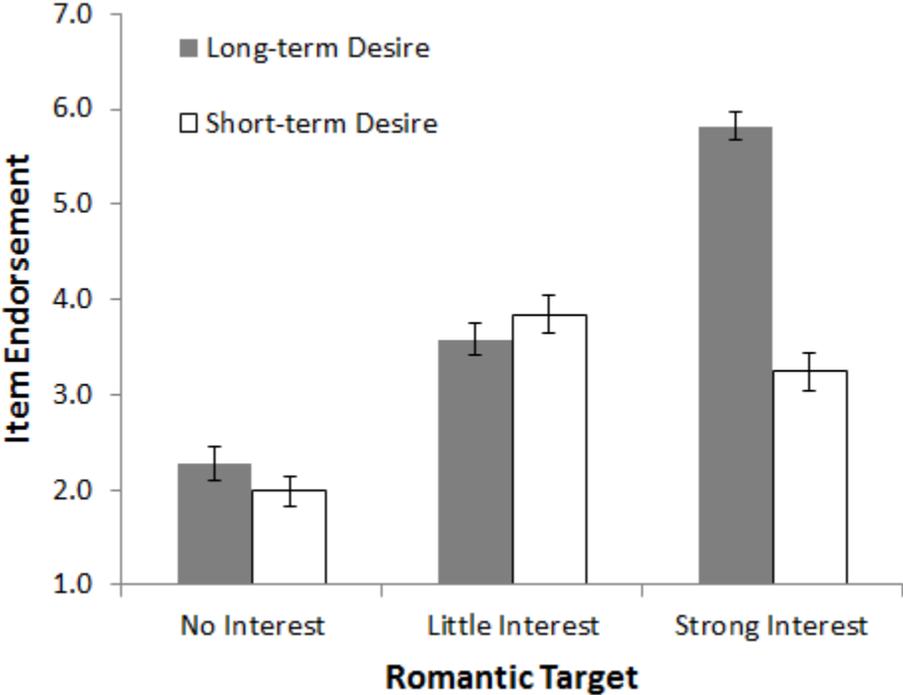
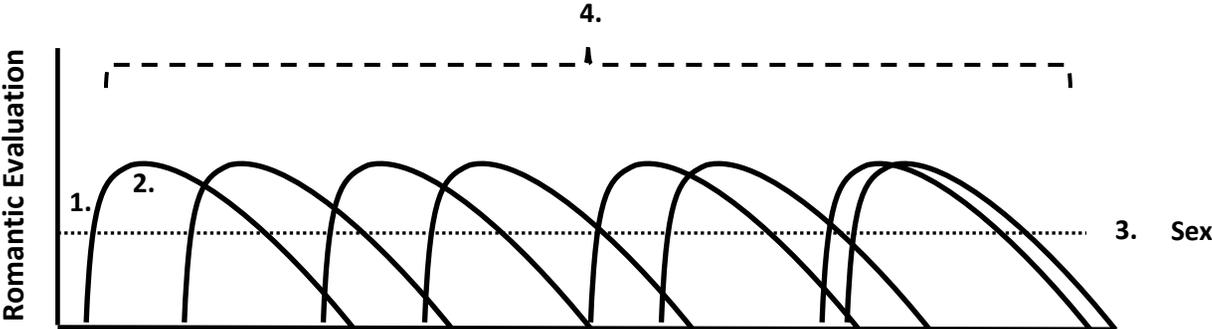


Figure 11 – Sociosexuality Trajectory Model

High Sociosexuality (unrestricted)



Low Sociosexuality (restricted)

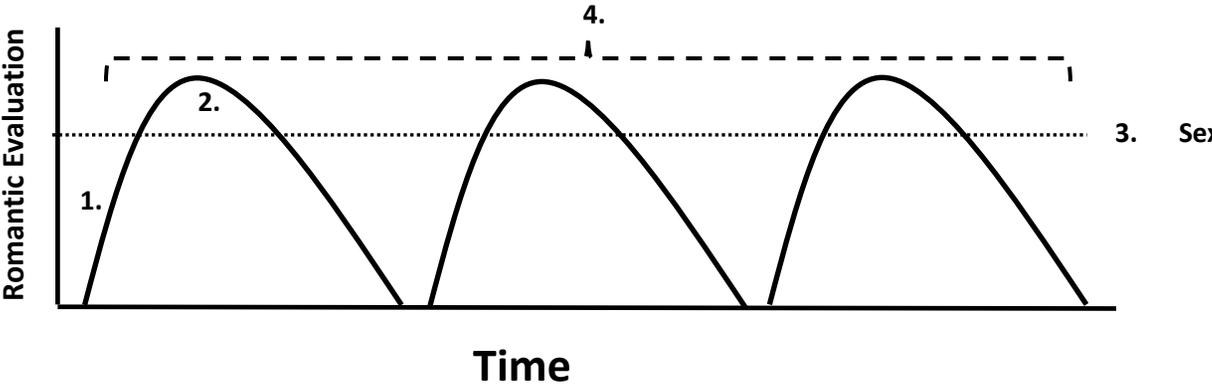


Figure 12 – Actor and Partner Effects in the Sociosexuality Trajectory Model (H1 and H2)

