## Running Head: FAMILIARTY AND INTERPERSONAL ATTRACTION

# When Does Familiarity Promote Versus Undermine Interpersonal Attraction? **An Integrative Model from Erstwhile Adversaries**

Eli J. Finkel Northwestern University

Michael I. Norton Harvard Business School

Harry T. Reis University of Rochester

> Dan Ariely **Duke University**

Peter A. Caprariello Stony Brook University

Paul W. Eastwick University of Texas at Austin

> Jeana H. Frost Vrije Universiteit

Michael R. Maniaci Florida Atlantic University

Draft Date: August 29, 2014

In Press, Perspectives on Psychological Science

#### **Abstract**

This article began as an adversarial collaboration between two groups of researchers with competing views on a longstanding question: Does familiarity promote or undermine interpersonal attraction? As we explored our respective positions, it became clear that the limitations of our conceptualizations of the familiarity-attraction link, as well as the limitations of prior research, was masking a set of higher-order principles capable of integrating these diverse conceptualizations. This realization led us to adopt a broader perspective, which focuses on three distinct relationship stages—awareness, surface contact, and mutuality—and suggests that the influence of familiarity on attraction depends on both the nature and the stage of the relationship between perceivers and targets. This article introduces the framework that emerged from our discussions and suggests directions for research to investigate its validity.

# When Does Familiarity Promote Versus Undermine Interpersonal Attraction? **An Integrative Model from Erstwhile Adversaries**

This article began as an adversarial collaboration between the Norton group (Michael Norton, Jeana Frost, and Dan Ariely) and the Reis group (Harry Reis, Michael Maniaci, Peter Caprariello, Paul Eastwick, and Eli Finkel) on whether familiarity promotes versus undermines interpersonal attraction. We planned to establish where we agreed and where we disagreed. Regarding the latter, we hoped to offer suggestions for future research that could help to determine whether, or the circumstances under which, each position was correct. In short, we had geared up for a scholarly ultimate-fighting-style battle. But a funny thing happened on the way to the octagon: We ended up agreeing on most of the major issues, and working together led us to develop a new, integrative model of the familiarity-attraction link.

This outcome was far from preordained. The Norton group had published research suggesting that the near-consensus positing that familiarity increases interpersonal attraction was wrong (Norton, Frost, & Ariely, 2007), whereas the Reis group had published research proposing that some of the Norton group's results were due to use of artificial procedures that failed to capture the essence of social interaction (Reis, Maniaci, Caprariello, Eastwick, & Finkel, 2011a). The Norton group countered with a commentary that raised serious concerns about the Reis group's findings (Norton, Frost, & Ariely, 2011), to which the Reis group responded by raising serious concerns about the Norton group's analysis (Reis, Maniaci, Caprariello, Eastwick, & Finkel, 2011b). All four of these articles appeared in a high-profile journal (Journal of Personality and Social Psychology), and the disagreement culminated in a public debate at a recent meeting of the Society of Experimental Social Psychology.

The idea for this article sprang from the value we saw in prior adversarial collaborations (e.g., Kahneman & Klein, 2009). Such collaborations can be useful in clarifying the positions of

competing camps, identifying areas of agreement and disagreement in a way that highlights the most productive paths for research that advances the state of knowledge. In discussing the framework for this piece, our initial plan of having each group advocate for its original position was superseded by a collaborative process oriented toward investigating how the two groups' findings could both be accurate. In doing so, we discovered major limitations of the existing literature (including our own contributions) that had obstructed the development a coherent answer to the question of whether, or when, familiarity promotes versus undermines attraction. In particular, conceptualizations and operationalizations of both familiarity and attraction have varied tremendously from one investigation to the next, as have the research methods employed to investigate the familiarity-attraction link.

Although methodological diversity is not inherently troubling, it has created problems in the familiarity-attraction literature because its impact has gone largely undetected. That is, scholars rarely discuss methodological variation in characterizing the literature, and they almost never seek to develop models that can integrate findings across such variation. Consequently, the literature lacks a broad framework for delineating the intrapersonal and interpersonal processes afforded by distinct operationalizations and research paradigms. Without such models, a sophisticated—or even adequate—analysis of the familiarity–attraction link is unlikely to emerge.

Once the two groups came to appreciate the limitations of the existing literature, we jettisoned the intended adversarial nature of our collaboration in favor of a broad (albeit not comprehensive) review and preliminary integration of the research relevant to the familiarity-attraction link. We generally limit our analysis to *social* measures of attraction—omitting, for example, the literatures investigating liking for music (e.g., Szpunar, Schellenberg, & Pliner, 2004), art (Cutting, 2003), and abstract shapes (de Vries, Holland, Chenier, Starr, & Winkielman, 2010)—but we otherwise adopt an expansive focus. We seek to provide an initial framework toward the development of a

broad model of the familiarity-attraction link, one that encompasses diverse operationalizations of familiarity and attraction and that can foster a new generation of research.

## **Defining "Familiarity" and "Attraction"**

Before introducing this model, we first define our two central constructs. Familiarity refers to an individual's quantitative level of exposure to the target person; it excludes the qualitative nature of the information provided during that exposure. The empirical literature encompasses a broad range of conceptualizations and operationalizations of familiarity. For example, familiarity has been operationalized in terms of: the number of times a target's face is viewed during a single experimental session (or "mere exposure"; Zajonc, 1968); the number of traits learned about an unknown target (Norton et al., 2007); the number of daily instant-messaging chats with an unknown target (Reis et al., 2011a); the duration of time living with a randomly assigned roommate (Norton et al., 2011); and even the number of days that hostages spend with their captors before developing "Stockholm Syndrome" (Bejerot, 1974). It has also been operationalized in terms of physical proximity (e.g., the physical proximity of one's home to the home of a target; Festinger, Schachter, & Back, 1950), although the conceptual analysis underlying proximity measures is that physical proximity yields a larger amount of exposure.

Attraction refers to valenced affective, cognitive, or behavioral tendencies toward the target person. The range of operationalizations of this construct is vast, although it is typically operationalized with self-report measures of constructs such as liking, romantic attraction, or relationship satisfaction. On occasion, it is operationalized in terms of implicit or behavioral measures, such as behavioral affiliation or romantic approach behaviors.

#### The Relationship Stage Model of the Familiarity-Attraction Link

Our model begins with the observation that familiarity is likely to influence attraction in different ways as a function of the stage of the relationship between the individual and the target (awareness, surface contact, or mutuality)—and, more crucially, that the psychological processes triggered by familiarity often differ depending upon the nature of this relationship. For example, the increase in familiarity between two strangers in a dangerous context, operationalized as the number of conversations they have, might promote attraction by reducing fear and uncertainty. In contrast, the increase in familiarity with one's spouse over time, operationalized in terms of the number of years of marriage, is unlikely to have fear-reducing properties.

Building on Levinger and Snoek's (1972) model, we posit three distinct stages (or levels) of relatedness; awareness, surface contact, and mutuality. These three stages allow us to impose structure on the diverse empirical paradigms scholars have used to investigate the familiarity attraction link. At the awareness stage, the individual ("A") is cognizant of the target ("B"), but the two have never interacted, and the probability of them interacting in the future is low or uncertain. At the *surface contact* stage, A and B have interacted, but their structural interdependence is minimal, and the probability of them becoming highly interdependent in the future is low or uncertain. At the *mutuality* stage, A and B have an established relationship, characterized by a (frequently substantial) history of structural interdependence, along with a strong likelihood of sustaining such interdependence in the future.

To illustrate these stages, consider how the relationship development process functions in the context of traditional online dating (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012; Frost, Chance, Norton, & Ariely, 2008). When users start dating online, they typically browse profiles to consider whether they might want to contact the person represented in each one. This profile browsing experience fits squarely in the awareness stage. Eventually, users might initiate contact and set up a lunch date with one or more of the people whose profiles they have browsed. This first-date experience fits squarely in the surface contact stage. Finally, users might develop a relationship with one of the people with whom they had gone on a lunch date, perhaps moving in

together and adopting a puppy. This co-residing/puppy-owning experience fits squarely in the mutuality stage. According to the stage model, certain intrapersonal and interpersonal processes that are crucial for understanding the familiarity-attraction link in some stages (e.g., mere exposure when browsing profiles) can be virtually meaningless in others (e.g., mere exposure when figuring out whose responsibility it is to train the puppy not to pee on the rug).

To be sure, stage models in psychology tend to gloss over nuances and subtleties, and the relationship stage model is no exception. A continuum of structural interdependence underlies the three stages: Pair relatedness is (a) essentially at zero when browsing profiles, (b) extremely low (albeit with some potential for the future) when on a coffee date, and (c) quite high when coresiding and co-puppying. There is also greater range of structural interdependence within the mutuality stage than within the two earlier stages. And, to be sure, not all of the paradigms fit quite so cleanly into one stage versus another; in particular, it's not clear exactly when people transition from surface contact to mutuality. Nonetheless, the stage model has strong heuristic value for this first attempt to integrate the diverse and unruly familiarity-attraction literature into a coherent framework. It provides the structural backbone for our conceptual integration of this literature, and it facilitates the development of novel insights into (a) those intrapersonal and interpersonal processes that are likely to influence the familiarity-attraction link across all relationship stages and (b) those that are more likely to exert influence in particular stages.

The present literature review is not exhaustive. In addition, the relationship stage model has not yet been tested empirically and is therefore speculative. In the present article, we propose an initial conceptual framework that puts to rest the oversimplified and distracting question of whether familiarity promotes versus undermines attraction in favor of (a) deeper questions regarding the *circumstances under which* familiarity is positively or negatively associated with

attraction (or exhibits no association at all) and (b) an emphasis on the psychological mechanisms at play in a given context that are likely to influence the nature of the familiarity–attraction link.

#### **Historical Perspective**

Before delving into our review of the literature on the link between familiarity and interpersonal attraction, it is important to recognize that research on this topic does not exist in a vacuum. Scholars from diverse traditions have long shown interest in this topic, including giants such as (a) Gustav Fechner, who, in 1876, became the first known experimentalist to demonstrate a positive association of familiarity with attraction (Zajonc, 1968); (b) Edward Titchener (1915, p. 179), who asserted that "recognition is always an agreeable and relaxing experience"; (c) Abraham Maslow (1937), who demonstrated that participants who had experienced plentiful rather than limited exposure to, for example, paintings and foreign names exhibited stronger liking for those objects; (d) George Homans (1950), who argued that frequency of interaction tends to create greater liking; and, most famously, (e) Robert Zajonc (1968, p. 1), who showed that "mere repeated exposure of the individual to a stimulus is a sufficient condition for the enhancement of his attitude toward it" (for reviews, see Bornstein, 1989; Zajonc, 2001).

Across these literatures, scholars have proposed three major principles to explain the familiarity-attraction link. The first, which draws upon the evolutionary and uncertainty-reduction traditions, indicates that the familiarity-attraction link should be positive because wariness of strangers should have increased our ancestors' survival likelihood and, consequently, reproductive success (e.g., Berger & Calabrese, 1975; Bornstein, 1989; Bowlby, 1969; Lee, 2001; Zajonc, 1968). The second, which draws upon cognitive psychology, suggests that the familiarity attraction link should be positive because people process familiar objects with greater fluency than unfamiliar objects (e.g., Alter & Oppenheimer, 2009; Reber, Schwarz, & Winkielman, 2004; Schwarz et al., 1991). The third, which draws upon developmental and hedonic psychology,

asserts that the familiarity-attraction link should be negative because people frequently become less interested in and even bored by a given stimulus after repeated exposure (e.g., Baillargeon, Spelke, & Wasserman, 1985; Gilbert, 2006; Tsapelas, Aron, & Orbuch, 2009). We discuss these principles (and selected others) in more detail following a review of the empirical literature.

## Reviewing the Literature Relevant to the Familiarity-Attraction Link

This review of the literature relevant to the familiarity–attraction link follows the structure of the relationship stage model, with sections on the awareness, surface contact, and mutuality stages of pair relatedness. By design, the review encompasses not only topics that are typically discussed in the familiarity–attraction literature (e.g., mere exposure, residential propinguity), but also topics that are typically neglected in that literature (e.g., liking for a randomly assigned roommate toward the beginning versus the end of the year, marital satisfaction after a smaller versus a larger number of years). Subsequently, we seek to integrate the relationship stage model with existing theoretical principles relevant to understanding the familiarity-attraction link. Finally, we suggest that although the relevance of some psychological processes to this link is comparable across the three relationship stages, the relevance of other psychological processes varies across the stages.

## **Stage 1: Awareness Paradigms**

Our review of research paradigms that investigate the awareness stage focuses on two paradigms in particular: studies predicting interpersonal attraction from (a) mere exposure processes (Zajonc, 1968) and (b) trait information processes (e.g., Norton et al., 2007).

Mere exposure. The literature investigating mere exposure processes in the familiarity attraction link dates back almost half a century—to when Zajonc (1968) became the first to investigate the effects of mere exposure on *interpersonal* attraction. In one study, undergraduates told they were participating in a study of visual memory passively viewed photographs of unknown target students from another university. Across conditions (0, 1, 2, 5, 10, and 25

exposures), greater exposure exhibited a dose-response relationship with liking (see also Brockner & Swap, 1976). Subsequent research demonstrated that repeated exposure also predicted greater zygomatic (cheek) muscle activity, a physiological marker of smiling (Harmon-Jones & Allen, 2001). In a field study in which confederates (silently) attended a class different numbers of times over the course of a semester, increased attendance led to greater liking by other students (Moreland & Beach, 1992).

**Trait information.** Norton and colleagues (2007) built upon classic trait paradigms (e.g., Asch, 1946; Hamilton & Zanna, 1974; Kelley, 1950) to develop the trait information paradigm for studying the link between familiarity and attraction. This paradigm involves exposing participants to a list of traits describing an unknown target, with the list varying from a smaller to a larger number of traits. In one study, for example, participants were randomly assigned to evaluate their liking for a target person who was characterized by 4, 6, 8, or 10 randomly selected traits. Norton and colleagues (2007) found that greater familiarity—operationalized in terms of exposure to a larger rather than a smaller number of traits regarding the target—reduced attraction to the target.

Recently, Ullrich, Krueger, Brod, and Groschumpf (2013) presented results, including a computer simulation, suggesting that familiarity is neither positively nor negatively associated with attraction in the trait information paradigm. Norton, Frost, and Ariely (2013) responded with additional evidence demonstrating that, at least under some circumstances, familiarity is indeed negatively associated with attraction in this paradigm. In their response, Norton and colleagues (2013) also pointed to an experiment demonstrating that participants liked famous movie stars more when they were provided little rather than plentiful trait-relevant information about them (Sanbonmatsu, Mazur, Pfeifer, Posavac, & Kardes, 2012; see also Kupor, Tormala, & Norton, 2014; Tormala, Jia, & Norton, 2012). Although this debate about the familiarity-attraction link in the trait information paradigm is not yet resolved, it is clear that, in contrast to mere exposure

research, some research employing trait information procedures demonstrates that familiarity decreases interpersonal liking.

**Summary: Awareness paradigms.** Even this brief review demonstrates that the familiarity attraction link does not function uniformly across awareness paradigms. Indeed, the mere exposure and trait information paradigms yield very different conclusions about this link. Whereas mere exposure studies tend to show positive links between familiarity interpersonal attraction, trait information studies tend to yield null or negative links. When we revisit these findings in the conceptual integration section below, we argue that a crucial moderator that can help to explain these divergent results is the extent to which familiarity increases versus decreases the coherence of the information regarding the target person (the extent to which the information readily integrates into a coherent whole), which helps to determine whether familiarity increases versus decreases the experience of cognitive fluency.

## **Stage 2: Surface Contact Paradigms**

Our review of the evidence from research that investigates the surface contact stage focuses on two paradigms in particular. First, we examine the literature linking get-acquainted processes to interpersonal attraction. In this literature, scholars frequently manipulate acquaintanceship by varying how long or how many times previously unacquainted individuals interact. Second, we consider a literature that tends to be neglected in discussions of the familiarity–attraction link: studies (typically conducted with nonhuman animals) that examine the effect of repeated copulatory activity with a particular conspecific on the subsequent desire for additional copulatory behavior with that conspecific.

**Get-acquainted interaction**. Scholars interested in interpersonal attraction have employed get-acquainted paradigms since at least the 1960s (e.g., Byrne, Ervin, & Lamberth, 1970; Walster, Aronson, Abrahams, & Rottmann, 1966). In such studies, strangers are introduced for a live

interaction, during which they engage in some sort of unstructured or semi-structured conversation. These studies can be used to examine the effects of the amount of self-disclosure on liking. Early experiments (using this or simple person-perception paradigms) clearly established that, all else being equal, the more a person self-discloses, the more that person is liked (see Collins & Miller, 1994, for a meta-analysis). In more recent work, the Reis group employed variations of the get-acquainted interaction procedure to manipulate familiarity (Reis et al., 2011a). In their first study, pairs of unacquainted strangers had a face-to-face conversation on a series of topics they discussed for 90-s apiece (e.g., "What are your hobbies?"; "What would you like to do after graduating from Northwestern?"). By random assignment, they discussed either 2 (low familiarity) or 6 (high familiarity) of these topics. In a follow-up study, pairs of unacquainted strangers engage in unstructured instant-messaging-based chats for 10-15 minutes apiece. By random assignment, they engaged in 1, 2, 4, 6, or 8 chats. Conceptually replicating the results from the previous study, participants in the 8-chat condition experienced the most interpersonal attraction and participants in the 1-chat condition experienced the least.

Coolidge Effect. The get-acquainted interaction literature suggests that, in surface contact paradigms, familiarity increases interpersonal attraction. But could people have so much exposure to another person that they become saturated, after which additional familiarity would cease to increase attraction—or perhaps even undermine it? Other experiential activities, such as eating, remain enjoyable only until one begins to feel full, after which additional consumption fails to increase enjoyment and can even become unpleasant or disgusting after the saturation point.

We are not aware of any research that investigates saturation processes in surface contact paradigms with humans (e.g., a study that manipulated whether people converse with a stranger

We distinguish the *amount* of self-disclosure (a reasonable operationalization of familiarity) from the *depth* of selfdisclosure. Although bearing some relevance to familiarity, depth of self-disclosure is confounded with a variety of other qualities that would obscure the impact of familiarity per se (e.g., emotionality and listener responsiveness).

for 1, 2, 5 or 10 hours). However, a robust literature on sexual behavior among nonhuman animals offers intriguing evidence for this saturation idea. Research conducted with several species of nonhuman animals has investigated males' sexual behavior with a female with whom they had repeatedly copulated to the point of sexual satiation (Dewsberry, 1981). This research has revealed support for a phenomenon known as the *Coolidge effect*, which refers to situations in which a male "that has ceased copulating and ejaculating with one estrous female may promptly resume mating if a new stimulus female is made available" (Wilson, Kuehn, & Beach, 1963, p. 641). Some scholars have speculated that the Coolidge effect also applies to humans (e.g., Symons, 1979), although others have raised questions about whether and under what circumstances it might apply to humans (e.g., Dewsberry, 1981). To date, the sorts of strict experimental tests used in nonhuman animal research have not been conducted with human participants (for obvious reasons), although some evidence, albeit with awareness-paradigm methods, is consistent with the Coolidge effect hypothesis in both men and women (Dawson, Lalumière, Allen, Vasey, & Suschinsky, 2013; Dawson, Suschinsky, & Lalumière, 2013; Laan & Everaerd, 1995; O'Donohue & Geer, 1985). It is thus possible—at least in the sexual domain and perhaps in other domains as well—for people to become sufficiently saturated with a particular type and source of social stimulation in a given time interval that additional amounts serve to decrease interpersonal attraction.

**Summary: Surface contact paradigms**. As was the case with the two awareness paradigms (mere exposure and trait information), the surface contact paradigms involving get-acquainted

<sup>&</sup>lt;sup>2</sup> The term "Coolidge effect" is derived from a fable about U.S. President Calvin Coolidge, which was articulated by Bermant (1976, pp. 76-77): "One day President and Mrs. Coolidge were visiting a government farm. Soon after their arrival they were taken off on separate tours. When Mrs. Coolidge passed the chicken pens she paused to ask the man in charge if the rooster copulates more than once each day. 'Dozens of times' was the reply. 'Please tell that to the President,' Mrs. Coolidge requested. When the President passed the pens and was told about the rooster, he asked 'Same hen every time?' 'Oh no, Mr. President, a different one each time.' The President nodded slowly, then said 'Tell that to Mrs. Coolidge.""

interaction and repeated sexual contact yield very different, perhaps even opposite, conclusions about the familiarity-attraction link. Whereas get-acquainted interaction studies tend to show positive links between familiarity and interpersonal attraction, the Coolidge effect hints at the possibility that additional familiarity beyond a saturation point can undermine interpersonal attraction. When we revisit these findings in the conceptual integration section below, we argue that a crucial moderator that can help to explain these divergent results is whether familiarity is extensive enough to exceed the individual's saturation threshold, which has implications for the extent to which increasing familiarity can foster feelings of boredom or disgust.

### **Stage 3: Mutuality Paradigms**

We next pivot to reviewing research paradigms involving pairs of individuals who are involved in some form of established relationship that has a strong likelihood of sustained mutual structural interdependence. We focus on two particular sets of conditions, illustrating each with two distinct paradigms. The first set involves moderate levels of structural interdependence, relying on paradigms that investigate physical propinguity and intergroup contact. The second set involves high levels of structural interdependence, featuring studies of roommate relationships (where two individuals share one small room that functions as both living and sleeping space) and marriage.

Moderate structural interdependence. Whereas a defining feature of relationships at the mutuality stage is that they are structurally interdependent, relationships at this stage vary substantially in the extent of this interdependence. As elaborated below, structural interdependence refers to the extent to which two people influence each other strongly and in diverse ways. For this initial integration of the familiarity-attraction literature, we conceptualize a relationship as moderately interdependent when two individuals interact over time but do not share living arrangements. Examples include (a) neighbors and (b) members of social groups who engage in repeated interaction with outgroup members over time.

**Physical propinguity.** The propinguity effect refers to the tendency for people to be especially likely to form friendships and romantic relationships with others who are in close physical proximity with them, presumably because physical proximity increases the frequency (and overall number) of social interactions over time. In a seminal study, Festinger, Schachter, and Back (1950) investigated friendship networks as a function of residential proximity in a student housing complex. Participants listed 41% of students who had been randomly assigned to live next door to them as a close companion, but only 10% of students assigned to live four doors away. That is, even though it only took a matter of seconds to walk four doors down the hall, randomly determined physical propinguity was a powerful predictor of interpersonal attraction (also see Nahemow & Lawton, 1975; Segal, 1974). Similarly, students sitting in the same row in a classroom report greater friendship intensity than students sitting in different rows (Back, Schmukle, & Egloff, 2008). Such propinquity effects are driven, at least in part, by the increased contact (a form of familiarity) that propinguity engenders (Ebbesen, Kjos, & Konečni, 1976). In this Ebbesen et al. (1976) study, however, residential propinquity also predicted "enemyship" intensity—the degree of enmity among participants who disliked each other. These results suggest that although the structural interdependence arising from residential proximity—which often includes hearing the music being played in a neighbor's home, jockeying for parking spots, and so forth—tends to promote liking on average, it can undermine liking under some circumstances.

*Intergroup contact*. A second moderate-interdependence literature that investigates mutuality processes focuses on intergroup contact. Allport's (1954) contact hypothesis suggests that increasing levels of contact between members of different groups promote liking (or reduce prejudice), especially insofar as the contact transpires under congenial circumstances, including

the possession of aligned rather than misaligned goals and the opportunity to cooperate on a shared task (Pettigrew, 1998). Increasing contact represents a reasonable operationalization of familiarity, and meta-analytic evidence demonstrates that, all else equal, greater contact predicts greater attraction (Pettigrew & Tropp, 2006). Of particular relevance to the familiarity–attraction literature is evidence demonstrating that the positive effects of intergroup contact emerge over time. In Sherif's (1966) seminal Robbers' Cave study, for example, members of formerly competitive groups who worked toward a common goal only began to like one another after repeated interactions (Pettigrew, 1991). Similarly, the positive effects of the U.S. Army's racial desegregation program only emerged after repeated interracial interactions (U.S. Department of Defense, 1955, Moscos & Butler, 1996). Such findings caused Pettigrew (1998, p. 76) to conclude that "constructive contact relates more closely to long-term close relationships than to initial acquaintanceship." This conclusion is consistent with our conceptualization of intergroup contact effects as being more relevant to the mutuality than to the surface contact stage of relationship development. Indeed, some level of structural interdependence appears to be crucial in facilitating the positive association of increased contact with interpersonal liking. As with the effects of physical propinquity, intergroup contact can undermine liking under certain circumstances, such as when groups have misaligned goals or have a history of antipathy (Amir, 1976).

**High structural interdependence**. Whereas the level of structural interdependence characterizing the relationship between neighbors or between individuals experiencing repeated contact with outgroup members tends to be moderate on average, the level characterizing the relationship between college students who share living quarters or between cohabiting spouses and partners tends to be much higher. In such studies, elapsed time, such as the number of academic terms as roommates or the number of years as a couple, is the key indicator of familiarity.

Roommate longevity. Several longitudinal studies have investigated changes over time in undergraduates' attraction to their roommate (Berg, 1984; Shook & Fazio, 2008; West, Pearson, Dovidio, Shelton, & Trail, 2009). All of these studies examined previously unacquainted roommates, most of whom had been randomly assigned to live together. These studies reliably show that undergraduates' liking for, and self-reported friendship potential with, their roommate tends to decline over time. Specifically, compared to their initial ratings, students were less attracted to their roommate toward the end of the academic term or year. In results that contrast with those from (nonresidential) intergroup contact literature discussed previously, this negative effect of roommate duration on liking was as strong, perhaps even stronger, when the roommate was of a different race (Shook & Fazio, 2008; West et al., 2009). Overall, the longer previously unacquainted roommates live together—that is, the more familiar they have become—the less they tend to like each other.

*Marriage longevity*. Might this downward trend in liking over time be an artifact of placing two unacquainted individuals in such close proximity with a randomly chosen stranger for so long, or might it also apply to cases in which two individuals have made a deliberate decision to live together and to experience high levels of structural interdependence more generally? The evidence supports the latter possibility. Indeed, one of the most robust effects in the marriage literature is that spouses' marital satisfaction on average tends to decline over time (Finkel, Slotter, Luchies, Walton, & Gross, 2013; Glenn, 1998; Kurdek, 1999; VanLaningham, Johnson, & Amato, 2001).

Some prominent scholars have long hypothesized that passionate love tends to decrease over time while companionate love tends to increase over time (e.g., Reik, 1944; Walster & Walster, 1978). There is little doubt that passionate love and sexual desire tend to decrease over time (e.g., Acker & Davis, 1992; Ahmetoglu, Swami, & Chamorro-Premuzic, 2010; Birnbaum, Cohen, & Wertheimer, 2007; Klusmann, 2002; Michael, Gagnon, Laumann, & Kolata, 1994; O'Leary,

Acevedo, Aron, Huddy, & Mashek, 2012; Sprecher & Regan, 1998; Tucker & Aron, 1993). Unfortunately, however, the evidence suggests that companionate love also tends to decrease over time. For example, Finkel et al. (2013) found that feelings of intimacy, closeness, and love also tend to decline over time (also see Hatfield, Pillemer, O'Brien, & Le, 2008).

Before concluding our discussion of the familiarity–attraction link in marriage, it is important to note that people somehow manage to marry in the first place. It is very likely that, for example, they were more in love with each other when they decided to get married than they were following their first date. Indeed, Surra (1985) interviewed newlywed partners about their experiences during courtship and observed reliable trends toward increasing dedication to the relationship (a measure that is presumably linked to attraction) throughout that period. In fact, the normative course of romantic relationships appears to be an arc, such that liking for a partner increases after an initial encounter, peaks after some length of time ranging from minutes to years, and, on average, ultimately declines. It also bears noting that the normative course is exactly that: normative. Some marriages do not decline in satisfaction or love over time (e.g., Lavner & Bradbury, 2010; O'Leary et al., 2012), just as some people like each other less as they keep dating. Further research is needed to identify the factors that predict these distinct temporal trajectories.

Summary: Mutuality paradigms. Research on the familiarity—attraction link has tended to neglect mutuality paradigms, including those that investigate interactions ranging from the intergroup to the marital. In general, as with awareness and surface contact paradigms, distinct mutuality paradigms yield different, perhaps even opposite, conclusions about the familiarity attraction link. When we revisit these findings in the conceptual integration section below, we argue that a crucial moderator that can help to explain these divergent results is the extent to which structural interdependence is moderate versus high, which has crucial implications for the extent to which increasing familiarity is likely to trigger interpersonal conflict.

### Toward a Conceptual integration of the Familiarity-Attraction Link

Although the preceding literature review was far from exhaustive, it serves both to illustrate the breadth of operationalizations used in research relevant to the familiarity-attraction link and to suggest that distinguishing among relationship stages can provide a helpful step toward the conceptual integration of this diverse literature. In this section, we begin working toward such an integration. We suggest that some principles are relevant to the familiarity-attraction link in similar ways across the three relationship stages, whereas others are differentially relevant across these three stages. Recognizing these distinctions will help scholars to avoid making global claims about processes that pertain only to a subset of familiarity–attraction contexts.

## Principles that are Likely to Apply across the Three Relationship Stages

In discussing theoretical principles that are likely to apply across the three relationship stages, we do not intend to suggest that the principles are equally relevant across the stages or that they are unmoderated at any of the stages. Rather, we simply suggest that they generally influence the familiarity-attraction link in the same direction across the three stages. Building on research suggesting that interpersonal attraction is, to a large extent, driven by how much the target person helps the individual achieve his or her goals (Finkel & Eastwick, 2015), we argue that the link between familiarity and attraction is likely to be especially positive to the degree that the target facilitates the individual's goals and especially negative to the degree that the target undermines the individual's goals. To illustrate this point, we discuss research suggesting that the familiarity attraction link is moderated by (a) the extent to which individuals believe that the target person has appealing versus unappealing core qualities and (b) the extent to which the social situation is structured in a manner that aligns or misaligns the two individuals' goals.

**Appealing versus unappealing qualities of the target person**. One principle that is likely to apply across the three relationship stages is that the association of familiarity with liking becomes less positive (or more negative) as the qualities of the target person become increasingly unappealing. In a study investigating awareness-stage relationship dynamics, undergraduates viewed photographs of target individuals 0, 1, 5, or 10 times (Perlman & Oskamp, 1971). Each target was photographed in ways that highlighted potentially neutral, appealing, and unappealing qualities (e.g., in a yearbook photo vs. wearing a graduation gown vs. in a police lineup, respectively). Although the effect of familiarity on attraction was positive on average, the effect was positive for appealing targets, intermediate (but trending positive) for neutral targets, and (nonsignificantly) negative for unappealing targets. Similar results emerged in a study in which a target's behavior added or subtracted from participants' earnings during the experiment (Swap, 1977). Participants who experienced a brief face-to-face exposure with targets 0, 1, 2, 4, or 8 times exhibited a positive effect of familiarity on liking when the target's behavior increased their earnings but a negative effect when the target's behavior decreased them.

Although the evidence is sparse and mixed, this tendency for the target's appealing versus unappealing qualities to moderate the familiarity-attraction link may not extend to pleasant versus unpleasant aspects of the immediate *context*. In one study, for example, participants experienced a brief face-to-face exposure with targets 0, 1, 2, 5, or 10 times while orthogonally consuming either delicious or disgusting liquids, such as Kool-Aid versus quinine (Saegert, Swap, & Zajonc, 1973). Regardless of which liquid was consumed, familiarity increased attraction to the target individual (but see Burgess & Sales, 1971, for different findings, albeit with nonsocial target stimuli).

We are not aware of any studies of the surface contact stage or the mutuality stage that investigate the target's appealing versus unappealing qualities. Our sense, however, is that the results from the awareness-stage studies would generalize to these more established relationship stages. They are consistent, for example, with the evidence that proximity sometimes enhances enemyship (Ebbesen et al., 1976) and that intergroup contact sometimes increases prejudice (Amir et al., 1976). If anything, it seems likely that the tendency for the target's appealing versus unappealing qualities to moderate the association of familiarity with attraction would be stronger in the surface contact and mutuality stages because the positive influence of appealing qualities and the negative influence of unappealing qualities are likely to be more consequential as structural interdependence increases. Conducting empirical tests of these ideas represents an important direction for future research.

Cooperative versus competitive social context. A second principle that is likely to apply across the three relationship stages is that the association of familiarity with liking becomes less positive (or more negative) as the context in which individuals gain familiarity with the target become increasingly competitive. The most robust literature relevant to this principle pertains to intergroup contact, which, as noted previously, typically functions as a moderately interdependent variant of the mutuality stage.

The evidence reviewed above suggests that increasing intergroup contact predicts attraction toward members of the outgroup on average (Pettigrew & Tropp, 2006). However, this effect is stronger under conditions that foster intergroup cooperation and weaker under conditions that foster intergroup competition (Amir, 1969; Sherif, 1966). For example, prolonged shared membership on a sports team tends to increase liking for members of other races (Chu & Griffey, 1985). It seems that (a) the *jigsaw classroom* technique succeeds by placing students from diverse backgrounds in work groups in which the group's success depends upon every group member's performance (Aronson & Patnoe, 1997) and that (b) a 3-week, U.S.-based camp for teenagers succeeds in increasing liking between Israelis and Palestinians by employing a similarly cooperative social context (Schroeder & Risen, in press). In contrast, the conflicting motives involved in competitive social contexts substantially increase the likelihood that the target will behave in ways that undermine individuals' well-being, a tendency that generally decreases liking for the target (Swap, 1977). We are not aware of any studies of the awareness or the surface contact stage that varied the competitiveness of the social context. Our theorizing, however, suggests that the results from the intergroup contact studies are likely to generalize to those less established relationship stages, with more cooperation leading to a relatively positive link, and more competition leading to a relatively negative link, between familiarity and attraction.

**Summary: Stage-general principles.** In this section, we introduced two principles regarding the familiarity-attraction link that seem likely to apply across the three relationship stages. The link becomes increasingly negative, or decreasingly positive, (a) as the target possesses increasingly unappealing rather than appealing qualities and (b) as the context becomes increasingly competitive rather than cooperative.

## Principles that Are Likely to Apply Differentially to the Three Relationship Stages

One strength of our relationship stage model is that its emphasis on distinct stages can focus scholars' attention on cases in which a key principle may be differentially relevant across stages. In the present section, we leverage this feature to discuss principles related to: (a) informational coherence, which we suggest is especially relevant at the awareness stage; (b) experiential saturation, which we suggest is especially relevant at the surface contact stage; and (c) structural interdependence, which we suggest is especially relevant at the mutuality stage. Figure 1 presents line graphs illustrating how research paradigms vary in ways that differentially afford the expression of these principles and, consequently, moderate the effect of familiarity on attraction. Figure 2 presents path diagrams illustrating how these principles yield mediational processes that ultimately influence attraction.

Informational coherence: When familiarity promotes attraction by increasing cognitive **fluency**. We begin with informational coherence, a principle that is, in our theorizing, especially relevant to the surface contact stage. *Informational coherence* refers to the extent to which

individuals can readily integrate the information they acquire about the target person. The reason that these effects of informational coherence and cognitive fluency are especially relevant to the awareness stage—they are much less relevant (if at all) to the surface contact stage and largely irrelevant to the mutuality stage—is that characteristics of the relationship itself tend to supersede any effects of informational coherence and cognitive fluency once people have actually started interacting.

We propose that, at the awareness stage, familiarity tends promote attraction when individuals can readily integrate additional information about the target person with the information they have previously acquired about him or her, but that it undermines attraction when individuals cannot readily integrate this information. We argue that this familiarity × informational coherence interaction effect is mediated through the experience of *cognitive fluency*, which refers to the cognitive ease with which an individual can process information. Abundant evidence has shown that individuals who experience greater fluency when processing a stimulus tend to like that stimulus more (Alter & Oppenheimer, 2009; Reber, Winkielman, & Schwarz, 1998), and research employing awareness paradigms that facilitate high informational coherence demonstrates that familiarity tends to promote liking because it increases fluency (Bornstein & D'Agostino, 1994; Winkielman, Schwarz, Fazendeiro, & Reber, 2003).

Our earlier review indicated that increasing mere exposure tends to bolster liking for the person (Zajonc, 1968), whereas increasing access to trait information (frequently) tends to undermine it (Norton et al., 2007). We hypothesize that these divergent results emerge because familiarity increases cognitive fluency in mere exposure paradigms (where new information readily coheres with existing information), whereas it decreases cognitive fluency in trait information paradigms (where new information often does not readily cohere with existing information). After all, increasing access to trait information frequently makes it more difficult for individuals to integrate all of that information into a coherent representation of a target person: It is easier to develop a coherent representation when a target is characterized by 4 qualities (e.g., ambitious, boring, bright, and critical) than when the target is characterized by 8 qualities (e.g., ambitious, boring, bright, critical, cultured, deliberate, dependable, and emotional). Indeed, trait information paradigms may be especially likely to yield cognitive disfluency because they characterize the target with traits that have been randomly selected from a broad pool rather than with traits that normatively co-occur in the population.

We provide graphical representations of these ideas in the top panels of Figures 1 and 2. The top panel of Figure 1 depicts the idea that awareness-stage paradigms exhibit positive effects of familiarity on attraction when they yield high informational coherence (e.g., mere exposure studies; Zajonc, 1968), but they (frequently) show negative effects when they yield low informational coherence (e.g., trait information studies; Norton et al., 2007). The top panel of Figure 2 depicts the hypothesized mediated-moderation process in which the familiarity × informational coherence interaction effect on attraction is mediated by cognitive fluency.

Experiential saturation: When familiarity undermines attraction by increasing boredom or disgust. A second principle that is uniquely or especially relevant to one of the three stages—in this case, the surface contact stage—is experiential saturation, which refers to the extent to which individuals have, in the current interaction episode, experienced so much exposure to the target person that additional exposure loses its ability to add anything novel or useful. We hypothesize that, across surface contact paradigms, familiarity will generally increase attraction up until the saturation point, perhaps because people tend to put their best foot forward during initial encounters with a stranger and/or because increasing familiarity with a stranger typically increases individuals' confidence that this stranger is not deviant or violent. As the interaction with a stranger reaches and passes the saturation point, however, additional familiarity ceases to increase

attraction—and, under some circumstances, might even undermine it. To be sure, just as people can become over-saturated by a 10-hour self-disclosure session with a stranger, they can become over-saturated by a 10-hour self-disclosure session with a spouse or a neighbor. However, we hypothesize that the link between familiarity-inspired saturation and liking differs across the two contexts. Whereas this saturation is likely to undermine liking in surface contact contexts (e.g., "we shouldn't be friends"), the long history of interdependence and commitment in mutuality contexts helps to buffer against an attraction-reducing effect of familiarity-induced saturation (e.g., "we need to take a break from this interaction" does not imply a reduction in liking).

Conceptually, people can become saturated with familiarity, just as they can become saturated with other experiences. As delicious as ice cream is, even a first-time ice cream eater can eat only so much in a single sitting before the prospect of eating more becomes uninteresting or, in extreme cases, even disgusting. We argue that an analogous process transpires in the familiarity-attraction domain, albeit often only at very high levels of familiarity, such as toward the end of a 10-hour conversation with a randomly selected stranger. (The exact location of the inflection point is likely to vary as a function of the individual, the target person, and the context.) We suggest that familiarity tends to promote attraction as long as it does not exceed the individual's experiential saturation threshold, but that it ceases to increase attraction, and might even undermine it, when it does exceed this threshold. We further suggest that this familiarity × experiential saturation interaction effect is likely to be mediated through the experience of negative affective experiences such as boredom or disgust. Although tests of this idea in an interpersonal attraction context have not yet been conducted, scholars have long argued that increasing levels of familiarity can eventually undermine liking if they exceed the experiential saturation threshold (Berlyne, 1970; Bornstein, 1989; Stang, 1975). The possibility of saturation suggests that the familiarity–attraction

link has an inverted-U shape: Familiarity increases attraction until individuals become saturated with exposure to the target person, after which additional exposure decreases attraction to it.

We propose that increasing familiarity tends to increase attraction in paradigms that do not exceed the individual's saturation threshold (e.g., a 10-minute conversation), whereas this positive association diminishes or perhaps even reverses in paradigms that exceed the individual's saturation threshold (e.g., a 10-hour conversation). We provide graphical representations of these ideas in the middle panels of Figures 1 and 2. The middle panel of Figure 1 depicts the idea that surface-contact-stage paradigms exhibit positive effects of familiarity on attraction when they do not exceed the saturation threshold (e.g., get-acquainted interaction studies; Reis et al., 2011), but they eventually begin to show negative effects when they exceed this threshold (e.g., Coolidge effect studies; Dewsberry, 1981). The middle panel of Figure 2 depicts the hypothesized mediatedmoderation process in which the familiarity × experiential saturation interaction effect on attraction is mediated by feelings of boredom or, potentially, disgust.

We are not aware of any surface contact studies among humans that involve extremely high levels of familiarity—levels that are high enough to exceed individuals' saturation threshold—so are not in a position to draw strong conclusions about the nature of the familiarity-attraction slope. As such, Figure 1 includes two variations of the idea the certain paradigms can, in principle, allow individuals to exceed their saturation threshold regarding the target person. In the first variation (dotted line), additional exposure beyond this threshold yields an asymptote in which the positive association of familiarity with attraction gets increasingly weak. In the second variation (dashed line), additional exposure yields an increasingly negative association of familiarity with attraction (dashed line). Our working hypothesis is that familiarity beyond the saturation point reduces the positive association of familiarity with attraction, but future research is required to determine the precise nature of this effect.

Structural interdependence: When familiarity undermines attraction by increasing **interpersonal conflict**. A third principle that is uniquely or especially relevant to one of the three stages—in this case, the mutuality stage—is *structural interdependence*, which refers to the extent to which two people have frequent, strong, and diverse influences on each other over a long period of time (Kelley et al., 1983). To ensure that this construct is not redundant with familiarity, we conceptualize structural interdependence in terms of strength and diversity (rather than in terms of frequency or longevity). Berscheid, Snyder, and Omoto (1989) conceptualized interdependence strength in terms of "the extent that relationship partners influence each other's everyday behaviors, decisions, plans, and goals," operationalizing it with self-report items like "[this person] will influence my future financial security"; "[this person] influences when I see, and the amount of time I spend with, my friends"; and "[this person] influences what I watch on TV." Berscheid et al. (1989) conceptualized interdependence diversity in terms of "the number of different activity domains in which relationship partners engage in activities together," operationalizing it with self-report items assessing how frequently the partners engaged in various activities together, such as preparing a meal, cleaning the house or apartment, and going to a movie. The reason that structural interdependence is especially relevant to the mutuality stage is that it is generally extremely low at the awareness and surface contact stages.

We propose that familiarity (operationalized in terms of relationship longevity) tends to promote attraction when structural interdependence is moderate, but that it tends to undermine attraction when structural interdependence is high. We hypothesize that familiarity generally increases (or at least reinforces already high levels of) attraction when structural interdependence is moderate because, all else equal, humans are a profoundly social species oriented toward positive social relations and emotional bonding with others (Baumeister & Leary, 1995; Beckes & Coan, 2011; Bowlby, 1969). In contrast, we hypothesize that familiarity decreases attraction on

average when structural interdependence is high because increasing longevity tends to predict conflict under those circumstances. That is, we argue that the familiarity × structural interdependence interaction effect is mediated through the experience of relationship conflict.

Building on the consensus in the relationships literature that the sorts of structural interdependence characterizing marital relationships makes some amount of conflict inevitable (e.g., Holmes & Murray, 1996), we suggest that a prime reason why marital satisfaction tends to decline over time is that greater marital longevity yields increasing opportunities for conflict (about money, sex, childrearing, housework, and so forth). Many of these conflict-affording features of structural interdependence also apply to students who share a dorm room, but these features are much less likely to apply to neighbors or outgroup members. This set of processes, we suggest, can help to explain the divergent familiarity–attraction effects across mutuality paradigms.

We provide graphical representations of these ideas in the bottom panels of Figures 1 and 2. The bottom panel of Figure 1 depicts the idea that mutuality-stage paradigms exhibit positive effects of familiarity, operationalized in terms of relationship longevity, on attraction when they foster moderate structural interdependence (e.g., between neighbors; Festinger et al., 1950), but they show negative effects of familiarity on attraction when they foster high structural interdependence (between roommates; West et al., 2009). The bottom panel of Figure 2 depicts the hypothesized mediated-moderation process in which the familiarity × structural interdependence interaction effect on attraction is mediated by the frequency or intensity of relationship conflict.

We underscore that we are describing the normative case. Not all relationships characterized by high structural interdependence exhibit a negative association between familiarity (longevity) and liking. Partners in these relationships may experience their interactions as challenging because of the high degree of coordination and attention that high levels of structural interdependence

require (Thibaut & Kelley, 1959). To the extent that partners can skillfully navigate these interactions, balancing their personal and their partners' needs and wishes in a way that minimizes destructive conflict and is rewarding for both, high levels of familiarity may be less detrimental to attraction than it is in the normative case (Rusbult, Olsen, Davis, & Hannon, 2001). In other words, because partners in relationships with high structural interdependence depend on each other so strongly (Berscheid et al., 1989), the quality of their interaction may determine whether the slope of the familiarity–attraction link is positive, flat, or negative (Lavner & Bradbury, 2010; O'Leary et al., 2012).

**Summary: Stage-specific principles.** In this section, we introduced three principles informational coherence, experiential saturation, and structural interdependence—that we hypothesize differentially influence the familiarity-attraction link at different stages: awareness, surface contact, and mutuality, respectively. Indeed, given that stage is a variable, another way of conceptualizing the effects in Figure 2 is in terms of a series of 3-way interaction effects: (a) familiarity  $\times$  informational coherence  $\times$  stage, (b) familiarity  $\times$  experiential saturation  $\times$  stage, (c) familiarity × structural interdependence × stage. The three principles we have introduced here do not yield an exhaustive list of the factors that influence the familiarity-attraction link, but even a cursory glance at the different ways they operate at different relationship stages offers novel insights into when and why we can expect familiarity to lead to liking or contempt.

#### **Discussion**

Adversarial collaborations, although relatively rare in our field, can be useful in assisting researchers in resolving conflicting data and competing theories (e.g., Kahneman & Klein, 2009). Our own adversarial collaboration—which came on the heels of our "adversarial noncollaboration" in the Journal of Personality and Social Psychology—changed us from adversaries to collaborators. Our proposed relationship stage model offers a framework that not

only helps to situate disparate research findings in a sensible (and, we hope, generative) conceptual framework, but also offers a host of novel hypotheses regarding when and why familiarity is likely to promote versus undermine attraction. At each stage of the model awareness, surface contact, and mutuality—we discuss factors that are likely to be especially influential in shaping the familiarity–attraction link. Our hope is that this article provides both (a) a useful framework for understanding the complex relationship between familiarity and liking and (b) a model for how adversarial collaborations can lead to generative theorizing that advances rather than exacerbates debates.

In presenting such a model, we have focused on reconciling and integrating findings that at first blush seem disparate and perhaps even contradictory. In so doing—and because this purpose differed from presenting a comprehensive theoretical account—we have glossed over several issues that warrant further attention. One such issue concerns nonlinear temporal or incremental effects. It seems plausible that there would be less change between the 46<sup>th</sup> and 47<sup>th</sup> year of being spouses or next-door neighbors than there would be, say, between the 1<sup>st</sup> and 2<sup>nd</sup> years, or between the 25<sup>th</sup> and 26<sup>th</sup> trait adjective compared to the difference between the 2<sup>nd</sup> and 3<sup>rd</sup> trait adjective. These changes should in theory not alter the direction of the familiarity–attraction link (unless they fall on opposite sides of the surface-contact saturation threshold, perhaps). They seem likely, however, to diminish the magnitude of observed changes so that the effects in essence flatten out.

A second idea that warrants further attention pertains to individuals' expectations about the future. For example, we defined the mutuality stage not only in terms of individuals having built a relationship characterized by a history structural interdependence, but also by a strong likelihood of sustaining such interdependence in the future. The idea that expectations about future interdependence can influence attraction is not well-researched, although a classic study by Berscheid, Graziano, Monson, and Dermer (1976) showed that expecting to go on a date with a

random stranger was sufficient to increase attraction to that person. To be sure, current and expected future interdependence are, under most circumstances, very highly correlated. As such, it seems reasonable to conflate interdependence in current circumstances and the expected future. Nevertheless, it will be important for future research to consider how familiarity influences attraction in cases where there is a divergence between past and expected future interdependence.

A third idea that warrants further attention involves disentangling the related constructs of familiarity and knowledge. Our model explicitly distinguishes familiarity from knowledge. Each time we see a movie with an old friend, we become more familiar with her, regardless of whether we acquire new information about her. Nevertheless, familiarity is often correlated with knowledge, as was the case in both Norton et al.'s (2007) and Reis et al.'s (2011a) original research. Considering how the effects of familiarity might be integrated with the effects of knowledge suggests some complex and intriguing research topics. For example, people vary in their social astuteness and attentiveness, which means that a given increment in familiarity might produce greater gains in (accurate) knowledge for some people than for others (e.g., both John and David have interacted with Sarah for one hour, but John has learned more information about her than David has). Even more intriguing is the possibility that accurate knowledge may diminish as familiarity increases, which could occur, for example, when one person changes over time (e.g., Harry knows less about Sally than he did before he became a heroin addict or she became a bornagain Christian). Indeed, relationship partners may actually monitor their partners less over time, perhaps because they feel that they know the other so well that attention is no longer necessary or because accurate knowledge of a partner's changes could be threatening to the stability of a relationship. In such cases, even as familiarity is increasing, (accurate) knowledge about the target is decreasing. Such topics have been entirely ignored vis-à-vis the familiarity-attraction link, and they call for a deep analysis of the nature of selfhood. Our present view is that it is familiarity with a target person does not decline, because both the perceiver and the target retain unique and essential identities throughout their lives. As such, as particular qualities of the perceiver or the target change over time, (accurate) knowledge of the target's qualities can decrease even as familiarity with the target, as a unitary entity, increases. Indeed, better understanding of the distinction between being familiar with another person and knowing that person will help to inform the crucial topic of what it means to "know" a relationship partner (e.g., Swann & Gill, 1997).

A fourth idea that warrants further attention pertains to the distinction between (a) total level of familiarity and (b) temporal suffusion of familiarity. Whereas the total level taps lifetime familiarity with the target person regardless of when the relevant exposure took place, the temporal suffusion taps the amount of familiarity in a given time span. Consider the case of a 22 year-old university student named Samantha who has known Maureen for 10 years and has spent 5,000 hours with her (500 per year), and has known Rachel for one year and has spent 1,000 hours with her: Samantha's total level of familiarity is higher with Maureen than with Rachel (e.g., 5,000 hours vs. 1,000 hours), but her current temporal suffusion of familiarity is higher with Rachel than with Maureen (e.g., 500 hours vs. 1000 hours over the past year). Future research is required to determine whether the total level or the temporal suffusion of familiarity is the stronger predictor of attraction. One intriguing possibility is that these two measures differentially influence attraction under different circumstances. For example, perhaps total level is the more important predictor of attraction when the individual is experiencing psychological distress, whereas temporal suffusion is the more important measure when the individual is seeking to celebrate a recent success.

#### Conclusion

The influence of familiarity on interpersonal attraction represents one of the most venerable effects in social psychology, covered by nearly every textbook, course, and general review article in the area. Our investigation of the diverse literatures relevant to this question has led us to conclude that the existing coverage is inadequate to address the full complexity of the familiarity attraction link. We are enthusiastic about the possibility that the present collaboration—among erstwhile adversaries—can breathe new life into this fascinating topic. We hope that the model we propose here can be a springboard toward the development of new theoretical principles and the pursuit of novel empirical investigations regarding this fundamental feature of social life.

#### References

- Acker, M., & Davis, M. H. (1992). Intimacy, passion and commitment in adult romantic relationships: A test of the triangular theory of love. Journal of Social and Personal Relationships, 9, 21-50.
- Ahmetoglu, G., Swami, V., & Chamorro-Premuzic, T. (2010). The relationship between dimensions of love, personality, and relationship length. Archives of Sexual Behavior, 39, 1181-1190.
- Allport, G. W. (1954). The nature of prejudice. Reading, MA: Addison Wesley.
- Alter, A. L., & Oppenheimer, D. M. (2009). Uniting the tribes of fluency to form a metacognitive nation. Personality and Social Psychology Review, 13, 219–235.
- Aronson, E., & Patnoe, S. (1997). *The jigsaw classroom* (2<sup>nd</sup> ed.). New York: Longman.
- Asch, S.E. (1946). Forming impressions of personality. *Journal of Abnormal and Social* Psychology, 41, 258-290.
- Amir, Y. (1969). Contact hypothesis in ethnic relations. *Psychological Bulletin*, 71, 319-342.
- Back, M. D., Schmukle, S. C., & Egloff, B. (2008). Becoming friends by chance. Psychological Science, 19, 439-440.
- Baillargeon, R., Spelke, E. S., & Wasserman, S. (1985). Object permanence in five-month-old infants. Cognition, 20, 191-208.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. Psychological bulletin, 117(3), 497.
- Beckes, L., & Coan, J. A. (2011). Social baseline theory: The role of social proximity in emotion and economy of action. Social and Personality Psychology Compass, 5(12), 976-988.
- Bejerot, N. (1974). The six day war in Stockholm. New Scientist, 61, 486-487.
- Berg, J. H. (1984). Development of friendship between roommates. Journal of Personality and Social Psychology, 46, 346–356.
- Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication* Research, 1, 99–112.
- Berlyne, D. E. (1970). Novelty, complexity and hedonic value. *Perception and Psychophysics*, 8, 279-286.
- Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The Relationship Closeness Inventory: Assessing the closeness of interpersonal relationships. Journal of Personality and Social Psychology, 57, 792-807.

- Birnbaum, G. E., Cohen, O., & Wertheimer, V. (2007). Is it all about intimacy? Age, menopausal status, and women's sexuality. Personal Relationships, 14, 167-185.
- Bornstein, R. F. (1989). Exposure and affect: Overview and meta-analysis of research, 1968– 1987. Psychological Bulletin, 106, 265-289.
- Bornstein, R. F., & D'Agostino, P. R. (1994). The attribution and discounting of perceptual fluency: Preliminary tests of a perceptual fluency/attributional model of the mere exposure effect. Social Cognition, 12, 103–128. doi:10.1521/soco.1994.12.2.103
- Bowlby, J. (1969). Attachment and loss: Vol. 1. Attachment. New York: Basic Books.
- Brockner, J., & Swap, W. C. (1976). Effects of repeated exposure and attitudinal similarity on self-disclosure and interpersonal attraction. Journal of Personality and Social Psychology, 33, 531-540.
- Burgess, T. D., & Sales, S. M. (1971). Attitudinal effects of "mere exposure": A reevaluation. Journal of Experimental Social Psychology, 7, 461-472.
- Byrne, D., Ervin, C. R., & Lamberth, J. (1970). Continuity between the experimental study of attraction and real-life computer dating. Journal of Personality and Social Psychology, 16, 157-165.
- Chu, D., & Griffey, D. (1985). The contact theory of racial integration: the case of sport. Sociology of Sport Journal, 2, 323-333.
- Cutting, J. E. (2003). Gustave Caillebotte, French Impressionism, and mere exposure. Psychonomic Bulletin & Review, 10 (2), 319-343.
- Dawson, S. J., Lalumière, M. L., Allen, S. W., Vasey, P. L., & Suschinsky, K. D. (2013). Can habituation of sexual responses be elicited in men and women when attention is maintained? Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement, 45(3), 274-285. DOI: 10.1037/a0032848.
- Dawson, S. J., Suschinsky, K. D., & Lalumière, M. L. (2013). Habituation of sexual responses in men and women: a test of the preparation hypothesis of women's genital responses. The *Journal of Sexual Medicine*, 10(4), 990-1000. DOI: 10.1111/jsm.12032.
- De Vries, M., Holland, R. W., Chenier, T., Starr, M. J., & Winkielman, P. (2010). Happiness cools the warm glow of familiarity: Psychophysiological evidence that mood modulates the familiarity-affect link. Psychological Science, 21, 321-328.
- Dewsbury, D. A. (1981). An exercise in the prediction of monogamy in the field from laboratory data on 42 species of muroid rodents. *Biologist*, 63, 138-162.
- Ebbesen, E. B., Kjos, G. L., & Konečni, V. J. (1976). Spatial ecology: Its effects on the choice of friends and enemies. Journal of Experimental Social Psychology, 12, 505-518.
- Fechner, G. T. (1876). Vorschule der Aesthetik. Leipzig: Breitkopf & Hartel.

- Festinger, L., Schachter, S., & Back, K. (1950). Social pressures in informal groups: A study of a housing community. Palo Alto, CA: Stanford University Press.
- Finkel, E. J., & Eastwick, P. E. (2015). Interpersonal attraction: In search of a theoretical Rosetta stone. In J. A. Simpson & J. F. Dovidio (Eds.), APA Handbook of personality and social psychology, volume 3: Interpersonal relations (pp. 179-210). Washington: American Psychological Association.
- Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. Psychology Science in the Public Interest, 13, 3-66.
- Finkel, E. J., Slotter, E. B., Luchies, L. B., Walton, G. M., & Gross, J. J. (2013). A brief intervention to promote conflict-reappraisal preserves marital quality over time. Psychological Science, 24, 1595-1601.
- Frost, J.H., Chance, Z., Norton, M.I., & Ariely, D. (2008). People are experience goods: Improving online dating with Virtual Dates. *Journal of Interactive Marketing*, 22, 51-61.
- Glenn, N. D. (1998). The course of marital success and failure in five American 10-year marriage cohorts. Journal of Marriage and the Family, 60, 569–576.
- Gilbert, D. (2006). Stumbling on happiness. New York, NY: Knopf.
- Hamilton, D.L. & Zanna, M.P. (1974). Context effects in impression formation: Changes in connotative meaning. Journal of Personality and Social Psychology, 29, 649-654.
- Harmon-Jones, E., & Allen, J. J. B. (2001). The role of affect in the mere exposure effect: Evidence from physiological and individual differences approaches. *Personality and Social* Psychology Bulletin, 27, 889–898.
- Hatfield, E., Pillemer, J. T., O'Brien, M. U., & Le, Y. C. L. (2008). The endurance of love: Passionate and companionate love in newlywed and long-term marriages. *Interpersona*, 2, 35– 64.
- Holmes, J. G., & Murray, S. L. (1996). Conflict in close relationships. In E. T. Higgins & A. Kruglanski (Eds.), Social psychology: Handbook of basic principles (pp. 622-654). New York: Guilford Press.
- Homans, G. C. (1950). The human group. New York: Harcourt, Brace, & World.
- Kahneman, D., & Klein, G. (2009). Conditions for intuitive expertise: A failure to disagree. American Psychologist, 64, 515-526.
- Kelley, H. H. (1950). The warm-cold variable in first impressions of persons. *Journal of* Personality, 18, 431-439.

- Kelley, H. H., Berscheid, E., Christensen, A., Harvey, J. H., Huston, T. L., Levinger, G., McClintock, E., Peplau, L. A., & Peterson, D. R. (1983). Close relationships. New York: Freeman.
- Kelley, H. H., Holmes, J. G., Kerr, N. L., Reis, H. T., Rusbult, C. E., & Van Lange, P. A. M. (2003). An atlas of interpersonal situations. New York: Cambridge.
- Klusmann, D. (2002). Sexual motivation and the duration of partnership. Archives of Sexual Behavior, 31, 275–287.
- Kupor, D.M., Tormala, Z.L., & Norton, M.I. (2014). The allure of unknown outcomes: Exploring the role of uncertainty in the preference for potential. Journal of Experimental Social Psychology, 55, 210-216.
- Kurdek, L. A. (1999). The nature and predictors of the trajectory of change in marital quality for husbands and wives over the first 10 years of marriage. Developmental Psychology, 35, 1283-1296.
- Laan, E., & Everaerd, W. (1995). Determinants of female sexual arousal: Psychophysiological theory and data. Annual Review of Sex Research, 6, 32-76.
- Lavner, J. A., & Bradbury, T. N. (2010). Patterns of change in marital satisfaction over the newlywed years. Journal of Marriage and Family, 72, 1171-1187.
- Lee, A. Y. (2001). The mere exposure effect: An uncertainty reduction explanation revisited. Personality and Social Psychology Bulletin, 27, 1255–1266.
- Levinger, G. K., & Snoek, J. D. (1972). Attraction in relationship: A new look at interpersonal attraction. New York: General Learning Press.
- Maslow, A. H. (1937). The influence of familiarization on preference. *Journal of Experimental* Psychology, 21, 162-180.
- Michael, R. T., Gagnon, J. H., Laumann, E. O., & Kolata, G. (1994). Sex in America: A definitive survey. New York: Warner Books.
- Moreland, R. L., & Beach, S. (1992). Exposure effects in the classroom: The development of affinity among students. Journal of Experimental Social Psychology, 28, 255–276.
- Moscos, C.C., & Butler, J.S. (1996). All that we can be. New York: Basic Books.
- Nahemow, L., & Lawton, M. P. (1975). Similarity and propinquity in friendship formation. Journal of Personality and Social Psychology, 32, 205-213.
- Norton, M.I., Frost, J.H., & Ariely, D. (2007). Less is more: The lure of ambiguity, or why familiarity breeds contempt. Journal of Personality and Social Psychology, 92, 97-105.

- Norton, M.I., Frost, J.H., & Ariely, D. (2011). Does familiarity breed contempt or liking? Comment on Reis, Maniaci, Caprariello, Eastwick, and Finkel (2011). Journal of Personality and Social Psychology, 3, 571-574.
- Norton, M.I., Frost, J.H., & Ariely, D. (2013). Less is often more, but not always: Additional evidence that familiarity breeds contempt and a call for future research. Journal of Personality and Social Psychology, 105, 921-923.
- O'Donohue, W. T., & Geer, J. H. (1985). The habituation of sexual arousal. Archives of Sexual Behavior, 14, 233-246.
- O'Leary, K., Acevedo, B. P., Aron, A., Huddy, L., & Mashek, D. (2012). Is long-term love more than a rare phenomenon? If so, what are its correlates? Social Psychological & Personality Science, 3, 241–249.
- Perlman, D., & Oskamp, S. (1971). The effects of picture content and exposure frequency on evaluations of Negroes and Whites. Journal of Experimental Social Psychology, 7, 503–514.
- Pettigrew, T. F. (1991). The importance of cumulative effects: a neglected emphasis of Sherif's work. In D. Granberg, & G. Sarup (Eds.), Social judgment and intergroup relations: Essays in honor of Muzafer Sherif (pp. 89-103). New York: Springer-Verlag.
- Pettigrew, T. F. (1998). Intergroup contact theory. Annual Review of Psychology, 49, 65–85.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal* of Personality and Social Psychology, 90, 751-783.
- Reber, R., Schwarz, N., & Winkielman, P. (2004). Processing fluency and aesthetic pleasure: Is beauty in the perceiver's processing experience? Personality and Social Psychology Review, 8, 364-382.
- Reber, R., Winkielman, P., & Schwarz, N. (1998). Effects of perceptual fluency on affective judgments. Psychological Science, 9, 45-48.
- Reik, T. (1944). A psychologist looks at love. Oxford, UK: Farrar & Rinehart.
- Reis, H. T., Maniaci, M. R., Caprariello, P. A., Eastwick, P. W., & Finkel, E. J. (2011a). Familiarity does indeed lead to attraction in live interaction. Journal of Personality and Social Psychology, 557-570.
- Reis, H. T., Maniaci, M. R., Caprariello, P. A., Eastwick, P. W., & Finkel, E. J. (2011b). In live interaction, does familiarity promote attraction or contempt? A reply to Norton, Frost, and Ariely (2011). *Journal of Personality and Social Psychology*, 575-578.
- Rusbult, C. E., Olsen, N., Davis, J. L., & Hannon, P. (2001). Commitment and relationship maintenance mechanisms. In J. H. Harvey & A. Wenzel (Eds.), Close romantic relationships: Maintenance and enhancement (pp. 87-113). Mahwah, NJ: Erlbaum.

- Saegert, S., Swap, W., & Zajonc, R. B. (1973). Exposure, context, and interpersonal attraction. Journal of Personality and Social Psychology, 25, 234-242.
- Sanbonmatsu, D. M., Mazur, D., Pfeifer, B. E., Posavac, S. S., & Kardes, F. R. (2012). The less the public knows the better? The effects of increased knowledge on celebrity evaluations. Basic and Applied Social Psychology, 34, 499–507.
- Schroeder, J., & Risen, J. L. (in press). Befriending the enemy: Outgroup friendship longitudinally predicts intergroup attitudes in a coexistence program for Israelis and Palestinians. *Group* Processes & Intergroup Relations, 1368430214542257.
- Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: Another look at the availability heuristic. Journal of Personality and Social Psychology, 61, 195-202.
- Segal, M. W. (1974). Alphabet and attraction: An unobtrusive measure of the effect of propinquity in a field setting. Journal of Personality and Social Psychology, 30, 654-657.
- Sherif, M. (1966). *In common predicament*. Boston: Houghton Mifflin.
- Shook, N. J., & Fazio, R. H. (2008). Interracial roommate relationships: An experimental field test of the contact hypothesis. Psychological Science, 19, 717–723.
- Sprecher, S., & Regan, P. C. (1998). Passionate and companionate love in courting and young married couples. Sociological Inquiry, 68, 163-185.
- Stang, D. J. (1975). Effects of "mere exposure" on learning and affect. Journal of Personality and Social Psychology, 31, 7-12.
- Surra, C. A. (1985). Courtship types: Variations in interdependence between partners and social networks. Journal of Personality and Social Psychology, 49, 357-375.
- Swap, W. C. (1977). Interpersonal attraction and repeated exposure to rewarders and punishers. Personality and Social Psychology Bulletin, 3, 248-251.
- Symons, D. (1979). The evolution of human sexuality. New York: Oxford University Press.
- Szpunar, K. K., Schellenberg, G., & Pliner, P. (2004). Liking and memory for musical stimuli as a function of exposure. Journal of Experimental Psychology: Learning, Memory, and Cognition, *30*, 370–381.
- Thibaut, J. W., & Kelley, H. H. (1959). The social psychology of groups. New York: Wiley.
- Titchener, E.B. (1915). A beginner's psychology. New York: Macmillan.
- Tormala, Z.L., Jia, J.S., & Norton, M.I. (2012). The preference for potential. *Journal of* Personality and Social Psychology, 103, 567-583.
- Tsapelas, I., Aron, A., & Orbuch, T. (2009). Marital boredom now predicts less satisfaction 9 years later. Psychological Science, 20, 543–545. doi: 10.1111/j.1467-9280.2009.02332.x

- Tucker, P., & Aron A. (1993). Passionate love and marital satisfaction at key transition points in the family life cycle. Journal of Social and Clinical Psychology, 12, 135–147.
- Ullrich, J., Krueger, J. I., Brod, A., & Groschupf, F. (2013). More is not less: Greater information quantity does not diminish liking. Journal of Personality and Social Psychology, 105, 909-920.
- U.S. Department of Defense (1955). A progress report on integration in the armed services, 1954. Washington, D.C.: U.S. Government Printing Office.
- VanLaningham, J., Johnson, D. R., & Amato, P. (2001). Marital happiness, marital duration, and the U-shaped curve: Evidence from a five-wave panel study. Social Forces, 78, 1313-1341.
- Walster, E., Aronson, V., Abrahams, D., & Rottmann, L. (1966). Importance of physical attractiveness in dating behavior. Journal of Personality and Social Psychology, 4, 508-516.
- Walster, E., & Walster, G. W. (1978). A new look at love. University Press of America.
- West, T. V., Pearson, A. R., Dovidio, J. F., Shelton, J. N., & Trail, T. (2009). Superordinate identity and intergroup roommate friendship development. Journal of Experimental Social Psychology, 45, 1266–1272.
- Wilson, J. R., Kuehn, R. E., & Beach, F. A. (1963). Modification in the sexual behavior of male rats produced by changing the stimulus female. Journal of Comparative and Physiological Psychology, 56, 636-644.
- Winkielman, P., Schwarz, N., Fazendeiro, T. A., & Reber, R. (2003). The hedonic marking of processing fluency: Implications for evaluative judgment. In J. Musch & K. C. Klauer (Eds.), *The psychology of evaluation: Affective processes in cognition and emotion* (pp. 189-217). Mahwah, NJ: Lawrence Erlbaum.
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. Journal of Personality and Social *Psychology*, *9*, 1–27.
- Zajonc, R. B. (2001). Mere exposure: A gateway to the subliminal. Current Directions in Psychological Science, 10, 224-228.

### **Figure Notes**

- Figure 1. Major examples of research paradigms that, according to the relationship stage model, moderate the familiarity–attraction link at certain stages of the relationship stage model.
  - Panel A: A prototypical paradigm yielding low informational coherence is the trait information paradigm (e.g., Norton et al., 2007a), whereas a prototypical paradigm vielding high informational coherence is the mere exposure paradigm (e.g., Zajonc, 1968).
  - Panel B: A prototypical paradigm that maxes out below the saturation threshold is the getacquainted interaction paradigm (e.g., Reis et al., 2011a), whereas a prototypical paradigm that maxes out above the saturation threshold is the Coolidge effect paradigm (e.g., Dewsberry, 1981).
  - Panel C: A prototypical paradigm that yields moderate structural interdependence is the propinquity effect paradigm (e.g., Festinger et al., 1950), whereas a prototypical paradigm that yields high structural interdependence is the randomly assigned roommate paradigm (e.g., West et al., 2009).
- Figure 2. Major examples of theoretical processes that, according to the relationship stage model, differentially influence the familiarity-attraction link across the three relationship stages. In Panel B, the positive association of familiarity with boredom/disgust only emerges after the saturation threshold has been reached.

Figure 1.

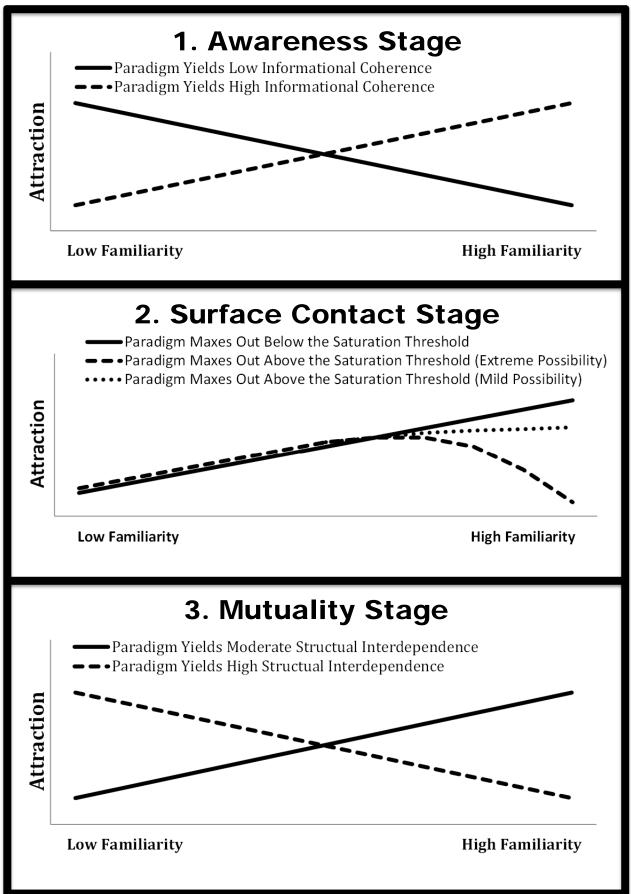


Figure 2.

