Similarity in Relationships as Niche Construction: Choice, Stability, and Influence Within Dyads in a Free Choice Environment

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A series of field studies focused on the role of similarity as niche construction in friendships. Using a free-range dyad harvest method, we collected 11 independent samples with 1,523 interacting pairs, and compared dyad members' personality traits, attitudes, values, recreational activities, and alcohol and drug use. Within-dyad similarity was statistically significant on 86% of variables measured. To determine whether similarity was primarily attributable to niche construction (i.e., selection) or social influence, we tested whether similarity increased as closeness, intimacy, discussion, length of relationship, and importance of the attitude increased. There were no effects on similarity of closeness, relationship length, or discussion of the attitude. There were quite modest effects of intimacy, and a reliable effect of the shared importance of the attitude. Because relationship length, intimacy, closeness, and discussion can all serve as markers of opportunity for, or potency of social influence, these data are consistent with the "niche construction" account of similarity. In 2 follow-up controlled longitudinal field studies, participants interacted with people they did not know from their large lecture classes, and at a later time completed a survey of attitudes, values, and personality traits. Interacting pairs were not more similar than chance, but for the 23% of dyads that interacted beyond the first meeting, there was significant similarity within dyad members. These 2 lines of inquiry converge to suggest that similarity is mainly due to niche construction, and is most important in the early stages of a relationship; its importance to further relationship development wanes.

Keywords: niche construction, relationships, personality, similarity, social influence

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When they can, people will select, construct, and transform situations to fit their needs. Outside of the laboratory, people do not receive their social environments passively, but rather actively seek out situations and build circumstances to meet their needs (Mischel & Shoda, 1998, 1999; Scarr & McCartney, 1983). This active construction of environments has been shown in work environments (Judge & Bretz, 1992), career choice (Holland, 1973), alcohol and addiction (Kahler, Read, Wood, & Palfai, 2003), and mate choice (Buss, 1984), and is based, partly, in the adaptive functions of coalition formation and pair-bonding (Carter, Lederhendler, & Kirkpatrick, 1999; Kirkpatrick, 1998). We extend this work to the domain of friendship initiation; we claim that people select friends that are similar to them (on personality, attitudes, values, and behaviors) as a means of niche construction, for the development of a safe, stable, and satisfying environment.

Some relationships people are born in to, others are thrust upon them, and yet other relationships they choose. Friendship is one type of a relationship where people often have more freedom in initiating, maintaining, and dissolving the relationship. When people have the opportunity to choose their friendships, they can select their own social environments and construct their own behavior settings; they build a social niche that suits their social needs and helps them obtain their goals. We suggest that an important pathway to niche construction is selecting friends who share one's attitudes, values, personality traits, and interests.

Friendship Choice as Niche Construction

People construct social environments to promote their goals (Mischel & Shoda, 1998, 1999; Scarr & McCartney, 1983). Family bonds, coalitions, alliances, and friendship are the building blocks of these environments, and their near-universal nature and contri-

bution to biological success make them strong candidates to be behavioral adaptations with a biological basis (Buss, 1995; Kenrick et al., 2002; Lieberman, 2013).

Niche construction theory is an approach to evolutionary biology that suggests that organisms are not merely reactive in their adaptation of environments, but can also shape their environments, both physical and social (Odling-Smee, Laland, & Feldman, 2003), and then adapt to the modified environment. Birds build nests, mammals and reptiles create burrows and tunnels, beavers create ponds, and humans make clothing, roads, and homes; all of these are examples of animals reshaping the physical environment to meet their biological needs. Niche construction theory suggests that the process of evolution stems not only from adaptation to environments, but also the *mutual* shaping of genes and environment (Laland, Odling-Smee, & Feldman, 2001).

Humans are adept at changing the environment to meet their needs. Humans are spread out over 95% of the world's land (European Commission, 2008) and use more than half of the fresh accessible runoff water available globally (Postel, Daily, & Ehrlich, 1996). Our species can live for temporary but extensive periods in outer space or on the moon. This success requires the development of an enduring social and cultural capital that persists through time. Human cultural and social environments (which includes war and weaponry, medicine and public health, home building and climate change) form the context of biological adaptation; in niche construction theory, the biological, social, cultural, and psychological contexts mutually constitute the environment of biological adaptation (Laland & Brown, 2011).

Forming congenial relationships that are fluent, rewarding, and low in conflict aids the niche construction process. One way to initiate such relationships is by seeking *similarity*; numerous studies have shown that similarity plays a central role in friendship formation (e.g., Ajzen, 1974; Berscheid & Walster, 1969; Byrne, 1971; Gans, 1967; Kandel, 1978; Urberg, Degirmencioglu, & Tolson, 1998; cf. Ansell, Kurtz, & Markey, 2008; cf. Finkel, Eastwick, Karney, Reis, & Sprecher, 2012).

From a niche construction perspective, the environments that organisms create in turn become the selection pressures for future generations. Similar others communicate, cooperate, and coordinate better than dissimilar others, whether the similarity is directly genotypic (Burnstein, Crandall, & Kitayama, 1994) or phenotypic (McPherson, Smith-Lovin, & Cook, 2001). Because a social group with shared similarities is more effective at gaining physical, social, and cultural resources, humans will be, in turn, selected for their predispositions for similarity seeking (Ackerman, Kenrick, & Schaller, 2007; Odling-Smee et al., 2003).

Finding friends that are similar and share one's beliefs and values has many advantages. It can provide protection from contradictory information and influence; this manages and stabilizes the self (e.g., Bandura, 1978; Swann & Read, 1981). Similar friends can also help construct or bolster a sense of self and identity by offering social comparison, feedback, and social identity (Campbell, Sedikides, Reeder, & Elliot, 2000; Fehr, 1996; Hogg & Hains, 1998). Caspi and Herbener (1990) have shown that selection of a similar mate helps promote consistency and stability in the organization of personality well into adulthood (cf. Luo & Klohnen, 2005). Sharing values leads to trust (Golbeck, 2009; Ziegler & Golbeck, 2007), which in turn leads to reciprocity, and provides the basis of successful interpersonal relations (Green &

Brock, 1998; Rotter, 1971; Williams, 2001). It is therefore not surprising that seeking similar others is a dominant strategy for friendship formation.

As conceptualized by social psychologists, similarity-seeking is a nomothetic process: everyone seeks similar others. But the process of choosing friends can be conceptualized more ideographically; we do not seek "similar others" but rather people who agree with *our* beliefs, share *our* values, and join us in *our* hobbies. This suggests that seeking similar others is defined by, and illustrative of individual differences. Personality is already known to be a critical variable in friendship (Cooper, 2002) and other close relationships (Donnellan, Larsen-Rife, & Conger, 2005). Investigating similarity-seeking as a process of identity construction—a process of molding the social environment to create a desirable place for the self—helps researchers conceptualize and better understand the earliest stages of friendship and other relationships.

Friendship Choice and the Construction of Rewarding Environments

Finding similar friends increases the chance for a stable, suitable environment, which can promote well-being. Personality psychologists have recognized this for decades; in selecting friends, "the person is generating his own conditions" (Mischel, 1968, p. 278). This stability is crucial to a sense of integrity, "in everyday life, individuals shape the situations they repeatedly encounter by choosing whom to interact with" (Zayas & Shoda, 2009, p. 281). This conceptualization helps resolve the "false dichotomy between the personal and situational determination of behavior" (Funder, 2006, p. 21), by conceptualizing friendship selection and environment construction as reciprocal and interactive (e.g., Tesser, 2002).

Scarr and McCartney (1983) provide one of the best models for environmental selection and construction. Their study describes how genes can shape environments; the extension to other stable characteristics of the person requires virtually no reconceptualization. After a review of different ways that genes can shape environments, they describe a genotype-to-environment effect that

> is the active, niche-picking or niche-building sort. People seek out environments they find compatible and stimulating. We all select from the surrounding environment some aspects to which to respond, learn about, or ignore. Our selections are correlated with motivational, personality, and intellectual aspects of our genotypes. The active genotype → environment effect, we argue, is the most powerful connection between people and their environments and the most direct expression of the genotype in experience. (Scarr & McCartney, 1983, p. 427)

Scarr and McCartney (1983) advance the idea that environment selection is based on a broadly defined genotype. More recently, personality psychologists further developed these ideas to incorporate the notion of niche construction (Funder, 2012). "People create, seek out, or otherwise gravitate to environments that are compatible with their traits" (Hampson, 2012, p. 318). One of the most powerful components of any environment is the people in it, and people select or construct social environments that suit their needs and further their goals. This makes the selection of people to interact with an important component of niche construction (Schneider, 1987; Zayas & Shoda, 2009).

Although we put a strong emphasis on friendship selection, friends can also be fashioned and reformed by each other. Friends socialize each other, hone social skills, and exchange information for mastery of age-related tasks (Hartup & Stevens, 1997). They teach each other good and bad habits (e.g., Kandel, 1978), and provide a context for exploration (Caron, Lafontaine, Bureau, Levesque, & Johnson, 2012). Both social influence and niche building accounts of friendship predict substantial levels of similarity among friends—the studies we report below compare the influence and niche building accounts of similarity within friends.

Similarity in Relationships: Niche Construction or Social Influence?

Similarity is a central factor in close relationships (Graziano & Bruce, 2008; McPherson et al., 2001). One critical factor in determining the comparative impact of social influence and niche construction is to see *when* in the course of a relationship similarity has its greatest effect.

If friendship formation is part of niche construction, then similarity should exist among friends at the outset—playing a central role in the *earliest* stages of friendship initiation. Providing that the similarity is stable, it should add nothing further to relationship development; its importance decays rapidly with time. If potential friends and partners do not meet a minimum standard of similarity, there would be little interest in continued interaction beyond the pair's initial encounter. Thus, similarity guides niche construction when people identify potential friends based on preexisting similarities (Urberg et al., 1998; Watson et al., 2004).

Within the niche construction model, it is important to distinguish between similarity that results solely from structural factors (i.e., social homogamy) and similarity that results from free choice (see Luo & Klohnen, 2005). Social homogamy creates similarity when friends happen to be similar *only* because they were drawn from a homogeneous population; choice plays no role. Propinquity, structural relations, and positions in social systems can create a social ecology in which similar relationships form. Homogamy simplifies niche construction; people who meet at church share religious beliefs, people who meet at the gym share fitness values, and people who meet at the welfare office share economic need—the structure of their social world puts them into contact with similar others.

Yet for most relations in individualistic cultures, homogamy affects the probability of meeting similar others, but the freedom to choose further contact determines subsequent friendship development. Niche construction can only occur in the presence of free choice, and because it represents a path of least resistance, free choice should invariably lead to similarity. As choice among potential relationships increases, so too should similarity (Bahns, Pickett, & Crandall, 2012).

To be able to choose a similar other, one must be able to recognize qualities of interest, to perceive—with some accuracy—the attributes of others. Just-acquainted individuals can make very quick assessments of whether a potential relationship is worth pursuing, which are based, in part, on similarity (Sunnafrank & Ramirez, 2004); these judgments reliably predict friendship outcomes. A great deal of information is transmitted quickly and accurately (see Ambady & Skowronski, 2008); social judgments

that rely on nonverbal information can be made even before verbal interaction has taken place (Bahns, Crandall, Gillath, & Wilmer, in press; Gillath, Bahns, Ge, & Crandall, 2012).

Research using zero acquaintance paradigms (e.g., Albright, Kenny, & Malloy, 1988) has shown that personality and attitudes can be detected early on in a first meeting, and accurate information about people can be picked up from clothing, movement, handshakes, belongings or trash (Chaplin, Phillips, Brown, Clanton, & Stein, 2000; Gillath et al., 2012; Gosling, Ko, Mannarelli, & Morris, 2002; Richeson & Shelton, 2005). Kandel (1978) found that friends who were initially more similar were more likely to maintain their friendship over the course of an academic year compared to friends who were less similar.

By contrast, a social influence approach predicts that similarity may develop over time, as relationship partners learn about and accommodate to each other's characteristics (Davis & Rusbult, 2001). In this account, similarity results from interpersonal influence; people change and become more similar to their friends over time (Bourgeois & Bowen, 2001; Cullum & Harton, 2007). Social influence increases with intimacy (Heller & Wood, 1998; cf. Duck & Miell, 1986) and attraction (Festinger, Schachter, & Back, 1950), and generally requires effort and motivation to change (Sherif & Sherif, 1953).

A social influence model need not assume that potential friends are similar at the outset of the relationship. Instead, social influence processes can create similarity in a relationship gradually over time, for example through discussion of discrepant attitudes (Aboud & Doyle, 1996; Kiesner, Maass, Cadinu, & Vallese, 2003). Laboratory research among strangers and longitudinal studies that assign roommates demonstrate that social influence is important (Newcomb, 1961; Shook & Fazio, 2008), but they represent a certain limited kind of relationship—participants do not choose to enter into them.

The tension between selection and social influence is a classic problem; it dates back to early research in social psychology (Allport, 1924; Newcomb, 1943). Although these processes have been much studied, there are few research paradigms that allow a comparison between the two—particularly on preexisting attitudes and values. Social influence has been widely shown on *developing* behaviors, particularly on addictive behaviors like drug use and binge eating (Crandall, 1988; Kandel, 1978; cf. Urberg et al., 1998), but there is rather less evidence for influence on established attitudes and values (e.g., compare Newcomb, 1943 to Newcomb, Koenig, Flacks, & Warwick, 1967) or personality (e.g., compare Agronick & Duncan, 1998 to McCrae & Costa, 1990).

Niche construction and social influence are not necessarily mutually exclusive. A certain degree of similarity may be required to elicit initial attraction; once a relationship is established, partners might grow increasingly similar over time through social influence. We compare similarity within dyad members in a free choice environment at various stages of relationship development, to determine whether similarity is a predictor or an outcome of friendship, or both. If similarity-seeking is a determinant of friendship (a niche construction account), then we can expect dyads at the earliest stages of friendship development to exhibit a substantial degree of similarity. However, if similarity is an outcome of friendship (a social influence account), then we can expect lower levels of similarity at first, and as relationships lengthen, people

communicate, and become closer and more intimate, similarity should increase (Festinger et al., 1950).[1]

Similarity in the Earliest Stages of Relationship Development

Similarity can result from choice quite quickly; social influence necessarily requires more time. How early could similarity result from choice? Filtering models of courtship or mate selection describe a similarity "screening process" as an early step in a progressive series of decisions about goodness of fit of a potential relationship partner (Kerckhoff & Davis, 1962; Lewis, 1972). These models suggest that similarity plays its greatest role in determining attraction and interest in a relationship during the acquaintanceship phase; similarity may be less important in established relationships, once partners have passed the initial screening (see Murstein, 1987, for a similar argument for romantic relationships). For example, Kerckhoff and Davis (1962) found that value similarity was related to persistence in the relationship among couples who had been dating less than 18 months, but it was no longer related to relationship outcomes among couples who had been dating 18 months or longer. Decisions such as whether or not to continue living with a college roommate are also often based on similarity and made very early in the relationship process (Berg, 1984; Bahns, Crandall, Canevello, & Crocker, 2013).

We propose that a similar filtering process takes place in the early stages of friendship formation. In the process of building an idiographically desirable social environment, people seek continued interaction with potential friends who meet a minimum standard of similarity. A niche construction account of similarity suggests that dyad members who meet the standard of similarity move on to the acquaintanceship phase (and potentially the friendship phase), whereas dissimilar (incompatible) dyad members do not. Once a desirable social environment has been constructed, other factors such as disclosure, trust, and commitment should quickly overtake the importance of similarity in relationship development and maintenance (Rusbult, 1980).

Sampling in Existing Research

The question of whether similarity results from niche construction or influence requires a method that can compare similarity within dyads at all stages of relationship development, beginning with first impressions and continuing through the acquaintanceship stage to the later stages of established relationships. There is ample work on similarity within established relationships between spouses (Caspi, Herbener, & Ozer, 1992; Humbad, Donnellan, Iacono, McGue, & Burt, 2010; Luo & Klohnen, 2005), friends (Poteat, Espelage, & Green, 2007; Ritchey & Fishbein, 2001) and roommates (Martin & Anderson, 1995; Shook & Fazio, 2008); however, very little work has been done on the earliest stages of relationships, in part because dyads in these stages are difficult to recruit as participants. It is this small window of time—beginning at the initial encounter and ending as a relationship starts to emerge—that is easily missed in research. These early stages are critical for determining how quickly similarity-based dyadic assortment happens and whether similarity continues to develop over the course of the relationship.

A large portion of the research on similarity and attraction has been conducted in laboratory settings using the bogus stranger paradigm (e.g., Aron, Steele, Kashdan, & Perez, 2006; Byrne, 1971; Byrne, London, & Griffitt, 1968; Lombardo, Weiss, & Stich, 1971), in which participants rate their attraction to a (bogus) stranger after viewing the stranger's responses to an attitude survey. This method has been criticized for its lack of generalizability to relationships in naturalistic settings (e.g., Sunnafrank & Miller, 1981). A more ecologically valid way of studying the role similarity plays in interpersonal attraction is to measure actual similarity within naturally occurring dyad members. To the extent that similarity predicts the formation of relationships, pairs of people that are found interacting, and hence are more likely to be in some sort of relationship, should be more similar to one another than randomly paired dyads drawn from the same population.

The similarity–attraction effect is larger in no-interaction or short-interaction laboratory studies with strangers or newly acquainted individuals than in research on existing relationships (Montoya, Horton, & Kirchner, 2008). Laboratory research may exaggerate the importance of similarity as a basis for attraction, as similarity-related information is often the sole basis for judgment. But these data could also mean that similarity has its greatest effect very early in the course of relationship development (such as when you meet someone for the first time). However, newer relationships may be awkward to recruit, and may not be an adequate basis for partners to do the hard work of showing up to the laboratory. Because research on similarity in existing relationships has oversampled more longstanding relationships and often entirely missed early stage relationships, it is impossible to differentiate between these two possibilities on the basis of existing evidence.

Overview of Studies

We designed this research to test two alternative hypotheses about the origins of similarity in close relationships—the social influence hypothesis and the niche construction hypothesis. If similarity in existing relationships is attributable to social influence, then we can expect that similarity should be higher within dyads that are more intimate, closer, and longer standing, and whose members observe and potentially discuss each other's attitudes, values, personality traits, or behaviors. If similarity in existing relationships is attributable to selection-based niche construction, then we can expect that similarity should occur early in relationships, prior to the development of closeness or intimacy (and perhaps independently of it), and without extensive discussion. Finally, similarity should be higher on those attitudes that are considered important by dyad members (Byrne et al., 1968; Tesser, 1993); this should occur regardless of whether similarity derives from influence or niche construction.

We tested these predictions in three studies. In Study 1 we investigated similarity within acquaintance and friendship dyad members using 11 separate, independent samples and a free-range dyad harvest method (Crandall, Schiffhauer, & Harvey, 1997) where relationships are observed in natural settings (Barker, 1968).

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[1] One might expect that older, more intimate friends might be more similar in a niche construction model as well, because of differential drop-out among low similarity dyads, and the effects of shared experiences. However, the *absence* of increased similarity would point directly to selection processes, and away from influence processes.

In Studies 2 and 3 we used a short-term longitudinal field method to measure similarity within newly acquainted dyad members with two samples that met in a classroom exercise in a large lecture course. We measured similarity near the beginning (Wave 1) and near the end of the semester (Wave 2), and compared the similarity within dyad members who reported continued interaction after the initial activity to dyad members who did not interact again. If similarity is particularly important in the earliest stages of a relationship (the niche construction hypothesis), dyad members who choose to continue interacting after the initial meeting should be more similar to each other early in the semester compared with dyad members who are not interested in future contact. If, however, similarity comes from growth over the course of the relationship (the social influence hypothesis), then we would expect to see little difference in similarity within dyad members who seek out future interaction and those who do not at Wave 1 (soon after first meeting), but we would expect that dyad members who continue interacting will exhibit higher similarity than dyad members who do not interact again at Wave 2 (several months later).

Study 1

Study 1 represents 11 independent samples from 11 different data collection waves. Although the dimensions of similarity that we measured varied across the samples, the method for these many studies was similar enough to collapse the reporting into a single "study."

The free-range dyad harvest method (Crandall et al., 1997) samples relationships of various kinds, but we discuss our findings using the language of "similarity within friends." This is because in the samples that measured relationship type, the overwhelming majority of dyad members reported being "friends," "very good friends," or "best friends" (89%). A small number of dyad members were romantic couples (3.5%) or family members (1%); excluding these dyads does not change our results in any important way. The method also captured some dyads at the earliest stages of relationship development—as it is designed to do—including a few dyad members that barely knew each other (1.5%) or identified themselves as acquaintances (5%). Across all samples, about 10% of the dyad members had known each other for three months or less and 25% had known each other 9 months or less.

We used the strategy of measuring a wide range of personality traits, attitudes, values, prejudices, and behaviors because an ideographic rather than nomothetic conception of friendship similarity suggests it is impossible to know a priori on what topics dyad members will show the greatest assortment. Similarity can be seen as a sign of group value (Crandall et al., 1997); shared characteristics within dyad members should reflect what is important to the dyad. Thus we expected to find greater assortment for important attitudes, values, and behaviors and lesser assortment for domains considered inconsequential to the dyad members (Festinger et al., 1950). In some of our samples, we measured attitude or topic importance directly.

The analysis of these data proceeds in two phases. The first task is to demonstrate similarity within the dyads on the various personality traits, attitudes, values, prejudices, and behaviors. The second task is to test for predictors of similarity; to evaluate the social influence hypothesis and the niche construction hypothesis we compare the degree of similarity within dyads according to

levels of intimacy, closeness, length of relationship, time spent discussing an attitude or value, and the rated importance of an attitude or value.

Method

Research assistants approached naturally occurring dyads in public spaces on our campus or off-campus in surrounding communities; dyads were asked to fill out a brief survey. The total sample consisted of 1,523 dyads, or 3,046 unique participants collected in 11 different samples.

Recruitment procedure. Dyad recruitment was carried out by undergraduates trained by the authors. Dyads were defined to the undergraduates as "any group of exactly two people who appear to be interacting in some way." When harvesting dyads on campus, researchers went to several different locations where people were commonly found in public (e.g., the library, student union, food courts, outdoor "open spaces"). When a researcher entered the location, they first checked whether any dyads were present. If only one dyad was present, the dyad was immediately recruited. If more than one dyad was present, the researchers had a sheet of compass points in random order (e.g., "north," "southeast," "south," "northwest," etc.) to define the order of recruitment. Researchers were often able to collect data from all dyads present. Members of the dyads were told of the nature of the study, described as a "study of how people who know each other are similar or different." They were shown the questionnaires (one side of a single sheet of paper). Most dyads approached agreed to participate (averaging 80% on campus; 70% off campus). Members of the dyads were explicitly asked to fill out their questionnaires separately and to not discuss their answers until after they handed their questionnaires back to the experimenter.

Materials. We used nine versions of the questionnaire to measure a total of 81 unique attitudes, values, prejudices, personality traits, and behaviors and 6 relationship variables (Appendix A displays the text of all items measured). Each version included between 10 and 20 variables, and participants in each wave of data collection completed only one version of the questionnaire. Two of the versions were each used twice—once with a college sample and once with a community sample. We used this approach to keep the length of the questionnaire short, to encourage voluntary participation. All variables were single-item measures, with the exception of the personality scales. The first version (used in Sample 1) included the Big Five personality dimensions, attachment avoidance and anxiety, and four social and political attitudes. We used the Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003) to measure the Big Five[2] and the 12-item version of the Experiences in Close Relationships Scale (Wei, Russell, Mallinckrodt, & Vogel, 2007) to measure attachment avoidance ($\alpha = .63$) and anxiety ($\alpha = .72$). The second version (used in Sample 2) included 10 social and political attitudes, along with either (a) ratings of importance or (b) how often the dyad had talked about each attitude. A third version (used in Sample 3) included 12 social and political attitudes, with importance and discussion ratings for each attitude. A fourth version (used in Samples 4 and 7) included

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[2] Inter-item correlations for the five dimensions were as follows: extraversion $r = .69$, agreeableness $r = .20$, conscientiousness $r = .23$, emotional stability $r = .23$, openness $r = .07$.

feeling thermometers for 20 social groups, representing a range of acceptability of prejudice (from Crandall, Eshleman, & O'Brien, 2002). A fifth version (used in Sample 5) measured frequency of 12 recreational activities. A sixth version (used in Sample 10) assessed alcohol and drug use in the past 30 days with 10 items. The seventh (used in Samples 6 and 8) and eighth (used in Sample 11) versions included feeling thermometers toward 15 social groups, and the seventh version also measured how often the dyad had talked about each group attitude. A ninth version (used in Sample 11) included 10 attitudes along with ratings of attitude importance for each item. All versions measured political ideology, age in years, and sex; some versions measured relationship type (barely know, acquaintance, friend, very good friend, romantic partners, family), liking, relationship length in months, closeness ("How well do you know the person you are with right now?"), and intimacy (e.g., "Do you feel that you can confide in this person about virtually everything?"). Length, closeness, and intimacy were significantly correlated in the college sample (mean of the three bivariate correlations = .41) and in the community sample (mean of the three bivariate correlations = .54). The intercorrelation of closeness, intimacy, and length, and the high level of agreement on these variables within dyads (quite high intraclass correlations) is an indicator of the validity of these relationship variables.

Campus samples.   Sample 1 (N = 93 dyads), Sample 2 (N = 143 dyads), Sample 3 (N = 250 dyads), Sample 4 (N = 268 dyads), Sample 5 (N = 175 dyads), Sample 6 (N = 107 dyads), Sample 10 (N = 102 dyads), and part of Sample 11 (N = 93 dyads) were collected on the University of Kansas campus. All campus samples included both same-sex and opposite-sex dyads. We report the descriptive statistics for all campus samples combined. In all, 1,231 dyads completed questionnaires on campus, including 266 male dyads, 469 female dyads, 373 opposite-sex dyads, and 123 dyads that did not report sex. Dyad members ranged from 16 to 68 years old (median = 20); dyad members' reports of relationship length ranged from very short (min = 5 min) to long (max = 21.25 years, M = 42 months, median = 28 months, SD = 42.83 months, skew = 1.85).

Community samples.   Sample 7 (N = 99 dyads), Sample 8 (N = 50 dyads), Sample 9 (N = 116 dyads) and part of Sample 11 (N = 27 dyads) were collected off campus in surrounding communities. Samples 8 and 9 included only same-sex dyads; Samples 7 and 11 included both same-sex and opposite-sex dyads. We report the descriptive statistics for all community samples combined. In all, 292 dyads completed questionnaires off campus, including 108 male dyads, 121 female dyads, 49 opposite-sex dyads, and 14 dyads that did not report sex. Dyad members ranged from 13–88 years old (median = 28), relationship length ranged from short (min = 1 day) to long (max = 77 years, M = 113.7 months, median = 48 months, SD = 150.85 months, skew = 2.29).

Results and Discussion

Similarity.   To measure similarity, we calculated intraclass correlation coefficients (ICC) for indistinguishable dyads (Kenny, Kashy, & Cook, 2006, p. 34). ICCs represent the proportion of variance explained by being in the dyad compared to the overall variance in the sample. The formula we used is as follows:

$$ICC = \frac{MS_B - MS_W}{MS_B + MS_W}$$

where MS_B is defined as the mean square between dyads and MS_W is defined as the mean square within dyads. A significant, positive ICC indicates that the naturally occurring dyads we sampled are more similar than randomly paired cases from the same sample.

Members of dyads were similar across a variety of personality traits, attitudes, values, prejudices, behaviors, and relationship variables; ICCs were positive and statistically significant[3] at $p <$ .05 on 178 of 206 hypothesis tests (personality dimensions, 71%; attitudes, values and prejudices, 85%; recreational activities and addictive behaviors, 77%; relationship variables, 100%). The measurement of similarity was relatively stable across the 11 different samples and 81 unique variables; this suggests the effects are not dependent on the location or time of data collection, experimenter, or dimension of similarity. Table 1 presents descriptive statistics and ICCs for a representative campus sample in which we measured social and political attitudes (Sample 2); a complete list of descriptive statistics and ICCs for all 11 samples is found in Appendix A. For samples in which we measured prejudice, we recalculated ICCs after removing from the analysis dyad members who reported being a member of that particular social group; this had virtually no effect on similarity (i.e., similarity on prejudices could not be explained by ingroup favoritism). We also compared z-transformed ICCs for same-sex (mean ICC = .28) and opposite-sex (mean ICC = .26) dyads. Same-sex dyads were significantly more similar than opposite sex-dyads in two of the samples measuring prejudice (Sample 4 $t(19)$ = 2.60, p = .02, and Sample 7, $t(19)$ = 4.50, $p <$ .001); there were no other significant differences between same- and opposite-sex dyads.

Comparing niche construction and influence.   If social influence is occurring within the dyads, similarity should be higher within closer or more intimate dyads, within more longstanding dyads, within dyads that discuss the attitude, and on attitudes that are important. If similarity is primarily a function of selection-based niche construction, then similarity should be constant across all of these variables (except importance, which should affect selection).

Similarity within dyads can be represented as a slope, in the following way. Separately for each dependent variable (personality trait, attitude, value, or behavior), we created a dummy coded variable such that the dyad member with the lower score on the dependent variable was assigned "0," and the member with the higher score was assigned "1." The dependent variable was then regressed on this dummy code in a multilevel model (MLM) treating individuals as nested within dyads. If both members report the same score on the dependent variable, the slope is zero—perfect similarity; the greater the discrepancy between members' scores, the greater the slope. Thus, this approach models similarity as a slope; all slopes are positive, as the lower-scoring member was always coded "0."

We then tested whether relationship length, closeness, intimacy, attitude discussion, and attitude importance moderate (predict) the similarity of within-dyad attitudes, values, personality traits and behaviors (Kenny et al., 2006, Chapter 4). We averaged across the two dyad members' reports of these variables to create dyad-level

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[3] The significance for ICC is based on the F distribution for $MS_{between}/MS_{within}$ with $N - 1$ and N degrees of freedom (where N is the number of dyads), multiplied by two to render the test two-tailed.

Table 1

Descriptive Statistics and Intraclass Correlations for Sample 2

Attitude or value	N	Attitude or value Mean (SD)	Attitude discussion Mean (SD)	Attitude importance Mean (SD)	ICC
My overall attitude toward abortion on demand is . . .	114	3.99 (1.79)	1.81 (1.04)	4.90 (1.48)	.31***
The death penalty is barbaric and should be abolished.	135	3.79 (1.78)	1.48 (.71)	4.09 (1.54)	.12
My overall attitude toward the death penalty for murder is . . .	115	3.96 (1.77)	1.44 (.70)	4.38 (1.57)	.34***
People should realize that their greatest obligation is to their family.	135	5.25 (1.32)	1.88 (.88)	5.15 (1.50)	.22***
My overall attitude toward exercising is . . .	115	5.47 (1.52)	2.19 (.89)	4.85 (1.79)	.53***
My overall attitude toward gays is . . .	250	4.99 (1.75)	1.97 (.88)	4.63 (1.83)	.48***
My overall attitude toward separate roles for men and women is . . .	115	3.37 (1.57)	1.61 (.77)	4.35 (1.73)	.34***
The average person can live a good enough life without religion.	135	4.38 (2.04)	1.85 (.87)	4.73 (1.66)	.43***
My overall attitude toward loud music is . . .	115	5.01 (1.49)	1.80 (.85)	3.87 (1.76)	.31***
The so-called underdog deserves little sympathy or help from successful people.	135	3.57 (1.72)	1.54 (1.91)	4.21 (1.47)	.17**
Birth control, except when recommended by a doctor should be made illegal.	135	1.78 (1.38)	1.70 (.91)	5.06 (1.91)	.52***
In general, how would you describe your political views?	250	4.44 (1.69)	a	a	.37***
Age (years)	246	21.06 (4.81)	a	a	.56***
Length (months)	244	34.19 (48.78)	a	a	.98***
How well do you know the person you are with right now? (closeness)	248	5.26 (1.72)	a	a	.80***
How close (intimate) would you say is your relationship with this person? (intimacy)	134	4.07 (2.12)	a	a	.71***

Note. Table 1 reports descriptive statistics and ICCs for a representative campus sample on social and political attitudes, along with discussion and importance of each attitude (Sample 2). Complete text of the items, descriptive statistics, and ICCs for all eleven samples can be found in Appendix A. Higher means represent more agreement, more favorable attitudes, and more liberal politics. N = number of dyads.
[a] Moderator variable not measured for this item.
** $p < .01$.   *** $p < .001$.

predictor variables. These models were estimated in SPSS using the MIXED command with random intercepts and fixed slopes. A significant interaction term for the dummy-coded slope variable and the dyad-level moderator variable with a negative coefficient would indicate that similarity increases (slope decreases) with increasing values of the moderator. This analysis is conceptually similar to testing the correlation between relationship length and the distance between dyad members on attitudes, but where the unit of analysis is the dyad rather than the individual.[4]

We calculated MLM moderator analyses across all 11 samples, 81 unique personality, attitude, and behavior variables, and five dyad-level moderator variables, summarized in Table 2. A complete listing of results from the moderator analyses can be found in Appendix B. Of 147 MLM analyses testing for moderation by *relationship length*, only 4.8% of all significance tests reached the 5% level, which is what one would expect under the null hypothesis of no moderation. Of 111 MLM analyses testing for moderation by *closeness*, only 8.1% of all significance tests reached the 5% level. Of 50 MLM analyses testing for moderation by attitude *discussion*, only 4% of all significance tests reached the 5% level. Of 67 MLM analyses testing for moderation by *intimacy*, 10.4% of all significance tests reached the 5% level, which is slightly above what one would expect under the null hypothesis of no moderation. Of 30 MLM analyses testing for moderation by *attitude importance*, 26.7% of all significance tests reached the 5% level, which is substantially more than one would expect by chance.[5]

One can conclude that similarity within dyads was *not* significantly moderated by friendship length, closeness, or amount of discussion. Dyad members who had known each other for a long time and/or reported having closer relationships were just as similar as dyad members that had just recently met. The amount of discussion[6] was unimportant in determining how similar dyad

members were. There was no discernible pattern to the small number of significant moderator effects for length, closeness, and

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[4] We also conducted a MLM analysis testing the similarity of dyads across multiple items in a given domain as an alternative to using separate hypothesis tests for single-item measures. These models estimated the attitudes, personality traits, or behaviors for one dyad member from the attitudes, personality traits or behaviors for the other dyad member, a dyad-level moderator variable such as length, and the interaction term. The interaction was significant in 9 of 29 hypothesis tests, indicating significant moderation. However, probing the interactions revealed that dyads showed significant levels of similarity for all observed values of the moderator variables, with one exception. In Sample 11, within-dyad similarity was not significant for the 3% of dyads reporting the very lowest levels of closeness and intimacy; within-dyad similarity was statistically significant for the remaining 97% of dyads. This means that even dyads who had known each other a very short time, and who reported low levels of intimacy and closeness, showed statistically significant levels of similarity. The slope of the line between dyad members' attitudes (indicating the degree of similarity) increases very modestly when moving from the lowest values of the moderator to the highest values of the moderator, but the amount of increase is surprisingly small. These findings are consistent with the single-item analysis presented above; similarity is equally present in newly developed and more longstanding relationships. Growth in the degree of similarity attributable to social influence is negligible.
[5] The use of the $p < .05$ level of significance is routine, habitual, and famously arbitrary. We repeated the "significance level" count with $p < .10$, which gives an opportunity for "somewhat less significant" effects to be counted. The .10-level analysis replicated the .05-level analysis in every way, which helps reduce the apparent arbitrariness of using .05 in our analysis.
[6] That amount of attitude discussion does not moderate similarity helps to rule out anticipatory accommodation as an alternative explanation for our findings. One might reasonably assume that it is difficult for dyads to temporarily adapt their responses to match their current partner for an attitude that participants agree has never been discussed (for all attitudes, the percent of dyads reporting "no discussion" ranged from 11% to 67%).

Table 2
MLM Analysis Summary: Evidence for Social Influence?

Sample	Length	Closeness	Intimacy	Discussion	Importance
Personality					
1	0/7	1/7	[a]	[a]	[a]
Attitudes and values					
1	0/3	0/3	[a]	[a]	[a]
2	[a]	0/9	[a]	1/9	2/9
3	0/12	1/12	1/7	1/11	3/11
11	0/10	1/10	1/10	[a]	3/10
Prejudice					
4	4/20	2/20	2/20	[a]	[a]
5	0/8	1/8	[a]	[a]	[a]
6	0/15	[a]	[a]	0/15	[a]
7	3/20	1/20	2/20	[a]	[a]
8	0/15	[a]	[a]	0/15	[a]
9	0/15	[a]	[a]	[a]	[a]
Behaviors					
5	0/12	2/12	[a]	[a]	[a]
10	0/10	0/10	1/10	[a]	[a]
All samples measuring personality					
	0/7	1/7	—	—	—
All samples measuring attitudes and values					
	0/25	2/34	2/17	2/20	8/30****
All samples measuring prejudice					
	7/93	4/48	4/40	0/30	—
All samples measuring behaviors					
	0/22	2/22	1/10	—	—
Summary across all domains					
	7/147	9/111	7/67*	2/50	8/30****

Note.   Tabled values represent the number of tests that resulted in statistically significant ($p < .05$) moderation of dyad similarity by relationship length, closeness, intimacy, discussion of attitudes, and attitude importance. Asterisks indicate the results of binomial probability tests, which give the probability of finding at least the same number of significant effects by chance alone.
[a] Moderator variable not measured on this version of the questionnaire.
* $p < .05$.   **** $p < .0001$.

discussion. These findings are most consistent with the niche construction hypothesis.

We also ran these moderator analyses separately for same-sex and opposite-sex dyads, and found a very similar pattern of results. For both same-sex and opposite-sex dyads, similarity within dyads was best predicted by attitude importance and was *not* significantly moderated by friendship length or amount of discussion. There were a small number of significant moderator effects for closeness and for intimacy, but these effects emerged only for same-sex dyads.

Intimacy.   We did find fairly modest evidence of moderation by intimacy. Dyads—particularly same-sex dyads—that reported having more intimate relationships were somewhat likely to be more similar than dyads with less intimate relationships. These findings are consistent with the social influence hypothesis and with previous research on social influence in close relationships (Cullum & Harton, 2007; Davis & Rusbult, 2001). Intimacy is usually considered a critical component in accounts of mutual influence (e.g., Miller, 1990; Prager, 1995), but our cross-sectional analysis finds only a modest importance of the effect of intimacy on similarity. This in no way demotes intimacy in terms of its importance to friendship or other relationships, but it pares down the attention it receives in terms of calculating similarity of personality, attitudes, values, prejudices, and behaviors within these relationships.

The importance of importance.   We found statistically significant evidence of moderation by attitude importance. It is essential to point out that the importance of the attitude was an attribute not of the attitude itself, but rather of the *dyad*. That is, for any given attitude, when dyad members rated that particular attitude important, then the similarity was higher than it was within dyads that rated the same attitude as relatively unimportant. The more the *dyad jointly felt* an issue was important, the higher their level of similarity. This was the only strongly reliable moderator of similarity we found. From the earliest days of studying attitude similarity, the personal importance of an attitude has proved an important moderator of its role in friendship (e.g., Festinger et al., 1950; Newcomb, 1943, 1961). Most people will be slower to make friends with people who differ in religious belief than people who differ in recreational preferences, and this is particularly true when dyad members agree that religion is important. Social influence is also more common when the issues measured are important (Cullum & Harton, 2007).

When importance was conceptualized at the dyad level, it predicted similarity within dyads. We also tested whether consensus about attitude importance in the population predicts the overall level of dyadic similarity (i.e., the size of the ICC) for a given attitude. If this were the case, then we might reasonably expect that ICCs would be higher on attitudes rated as most important. We calculated Spearman's ρ (rho) between the sample mean for rated

importance of the attitude and the size of the ICC for the 20 variables for which we had importance data; the two were not correlated $\rho = -.21$, $p > .35$. The size of the ICC was correlated, however, with the SD of importance, $\rho = .60$, $p < .01$, which suggests that the highest ICCs were found on those attitudes for which there was *disagreement* in the population regarding the attitude's importance.

Indeed, the dyadic agreement about the importance of an attitude was just as good a descriptor of dyadic similarity as agreement about the attitude itself. We calculated the ICCs of *importance* for the 20 attitudes (mean ICC = .21), and compared them to the ICCs for the *attitudes themselves* (mean ICC = .17). This suggests that agreement about what matters and what does not matter is itself an important dimension of friendship assortment. These data provide strong support for the niche construction hypothesis—similarity in relationships occurs early, and is highest on those areas that the individuals find most important and reflect their own values.

Lack of support for influence. We found no compelling evidence of social influence increasing similarity through relationship length, closeness, or discussion. Perhaps the most important finding of Study 1 is the lack of moderation on so many variables for which one might reasonably expect to find moderation. The absence of increased similarity with time in relationship, closeness within relationship, and the amount of discussion of a topic points away from social influence as a cause of similarity, and toward selection. The lack of moderator effects was widespread; we found no evidence of increased agreement over time on attitudes, values, prejudices, personality, addictive behaviors, or recreational activities.

One might suggest that the failure of length of relationship, closeness, and discussion as predictors is attributable to the vagaries of the free-range dyad harvest method. The method is comparatively new, and its strengths and limits are just being tested. But the importance of the attitude played a significant moderating role, and to a lesser extent, so also did intimacy. The statistical method is capable of finding moderator effects—and we found one strong moderator and one more modest one. But does the free-range dyad harvest method create sampling bias that eliminates some of the important moderator effects? For example, consider the failure to find length-of-relationship moderator effects; one might argue that the high similarity long-term friendships are overlooked using our sampling method—but that the low similarity long-term friendships are found by it. At this point, this kind of bias seems unlikely.

In short, the evidence is strongly consistent with the notion that people *choose* friends based on similarity of attitudes, values, prejudices, personality traits or behaviors that are important to them. Once two people have discovered that a friendship can satisfy the goal of similarity-based niche construction, the relationship course proceeds—with very little evidence of newly sculpted similarity. Once a stable and desirable social environment is achieved, the variables that affect relationship course are unlikely to be similarity-based.

Studies 2 and 3

The cross-sectional field studies provide evidence for a niche construction account of similarity within friendship dyads, and

surprisingly little evidence of social influence. Our data suggest that a standard of similarity needs to be met soon after first acquaintance for there to be interest in pursuing a friendship. In Studies 2 and 3, we used a longitudinal method to capture the earliest stages of friendship formation (beginning at zero acquaintance) and measured friendship outcomes and similarity within newly acquainted dyads over the course of a semester.

Method

Participants. Participants were undergraduates in two separate sections of a large introductory psychology course ($N = 418$ for Study 2, $N = 452$ for Study 3). The two samples were similar in age (Ms = 19.2, 19.0, SDs = 2.61, 1.38), sex ratio (42.3% female, 46.9% female), and racial/ethnic identification (64.8% White, 63.3% White) for Studies 2 and 3, respectively. We report the data for the 680 unique dyads ($N = 438$ dyads for Study 2, $N = 242$ dyads for Study 3) that completed the online follow-up measures.

Materials and procedure. Just-acquainted dyads formed in each sample with an initial meet-and-greet activity during one of the first class meetings of the semester. Participants were instructed to find a same-sex person (Study 2) or, either a same-sex or opposite sex person (Study 3), in the class to whom they had never before spoken. Participants wrote their own name and the name of the person they met on the questionnaire; we used names to match up the data into dyads for analysis. The just-acquainted dyads had a 2-min conversation about a mundane topic (e.g., favorite vegetables, number of credits required for the major). After the conversation, each person privately reported his or her interest in becoming friends with the person he or she had just met with four items (e.g., "Would you be interested in becoming friends with this person?" "How much do you like this person?" $1 = not\ at\ all$, $7 = very\ much;$ αs = .87, .90 in Studies 2 and 3, respectively). This sequence was repeated several times so that each person met and had a conversation with either three (Study 3) or four (Study 2) other people. At the end of the meet-and-greet activity, participants reported their feelings about and enjoyment of the activity. They also reported how the social interactions in the study compared to interactions in their normal lives ("The social interactions I had today were a lot like the interactions I have in my normal life," "The people I met are similar to the people I meet in my normal life" $1 = strongly\ disagree$, $7 = strongly\ agree$).[7]

Participants also completed online measures at two or three different times during the semester for extra credit in the course. Participants in Study 2 completed a prescreen survey as part of mass testing at the beginning of the semester (administered before the initial meet-and-greet activity). The Wave 1 survey was administered several weeks after the initial meet-and-greet activity (3–4 weeks in Study 2, 6–8 weeks in Study 3). The Wave 2 survey was administered 14 weeks after the initial meet-and-greet activity,

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[7] Many students rated the activity as enjoyable (23.4% of the sample in Study 2, 22.3% of the sample in Study 3), or interesting (27.3%, 50.4%), and many reported wanting to do the activity again (39.7%, 16.6%). Students reported that the interactions they had in the meet and greet activity were not too different from everyday social interactions (Ms = 3.54, 4.11, SDs = 1.13, 1.26 for the two "normalcy" items in Studies 2 and 3, respectively).

just before the end of the semester. Unless otherwise noted, all measures were used in both Study 2 and Study 3.

Prescreen measures.   We used 24 variables from the mass testing survey[8] including individual items about tobacco use, self-esteem, belief in a just world (Lipkus, 1991), attitudes toward Black people (McConahay, 1986), internal and external motivation to suppress prejudice (Plant & Devine, 1998), attachment anxiety and avoidance (Brennan, Clark, & Shaver, 1998), relationship status and length, sexual orientation, strategies for acquiring resources, Beck anxiety inventory (Beck, Epstein, Brown, & Steer, 1988), Beck depression inventory (Beck, Steer, & Carbin, 1988), Buss-Perry aggression questionnaire (selected items from the hostility subscale; Buss & Perry, 1992), whether or not they have a friend at the university and in the class, whether or not they have a tattoo or would consider a tattoo, American group identification, beliefs about the biological basis of homosexuality, and heterosexual group identification.

Wave 1 measures.

Prejudices.   We measured prejudice toward 20 social groups with single-item feeling thermometers (1 = *very negative*, 7 = *very positive*). The groups rated were alcoholics, Arabs, Asian Americans, Black Americans, blind people, drunk drivers, elderly people, environmentalists, fat people, female prostitutes, gay men, homeless people, interracial couples, Jews, students at Kansas State University (a rival university), Latinos, marching band members, Native Americans, politicians, and welfare recipients.[9]

Health behaviors.   We measured frequency of *smoking tobacco* with the options not at all, only once in a while, about one pack a day, or more than one pack a day. We measured frequency of *consuming alcoholic beverages* to get drunk with the options never, no more than once per month, 2–4 times per month, 5–7 times per month, or more than 7 times per month. We measured frequency of *exercising* in hours per week with the options zero, 1–2, 2–4, 4–6, or more than 6. In Study 3, we added the items "I smoke marijuana" and "I use ADHD stimulants (e.g., Adderall, Ridalin) without my doctor's recommendation"; all health behavior items in Study 3 used the scale (0 = *never*, 5 = *a lot*).

Personality.   The Ten Item Personality Inventory (TIPI; Gosling et al., 2003) assessed the Big Five personality dimensions. We used the 12-item version of the Experiences in Close Relationships Scale (Wei et al., 2007) to assess *attachment anxiety* and *avoidance.*

Attitudes.   We measured *social attitudes* including Protestant work ethic ("Anyone who is willing and able to work hard has a good chance of succeeding"), abortion ("Abortion should be illegal in all situations"), and birth control ("Birth control, except when recommended by a doctor, should be made illegal") using the scale 1 = *strongly disagree*, 7 = *strongly agree*. We measured attitudes toward the death penalty using the scale 1 = *extremely unfavorable*, 7 = *extremely favorable*. We measured *political views* with a single item (1 = *conservative*, 4 = *moderate*, 7 = *liberal*). We also asked whether students considered themselves to be a *fan of their university's athletic teams* (1 = *no, not at all*, 7 = *yes, very much so*).

Demographics.   Demographics included sex, age, racial/ethnic group (White/Caucasian, Black/African American, Latino(a), Asian American, Native American, something else), international student status (yes or no), and year in school (freshman, sophomore, junior, senior).

Wave 2 measures.   In Study 2, some of the measures from Wave 1 were repeated at Wave 2, including tobacco use, alcohol use, exercise, being a fan of their university's athletic teams, birth control attitudes, and prejudice toward three social groups (fat people, interracial couples, students at a rival university). All measures used in Study 3 were assessed both at Wave 1 and Wave 2, except for demographic variables, which were measured only at Wave 1.

Friendship outcomes.   The primary purpose of Wave 2 was to assess friendship outcomes for the dyads formed in the initial meet-and-greet activity. The text of the items is included in Table 4. We were most interested in whether or not the dyad members had spoken to each other again since the day of the in-class activity, and whether or not they had become friends. If participants did report continued interaction they were asked to nominate the person by name; we used this information to match up individuals' data into dyads for analysis.

Recreational activities.   We measured how frequently students engaged in 15 recreational activities, including going to movies, going to class, playing an instrument, going to concerts, doing artwork, going out drinking, reading books, socializing, going out to eat, going to the gym alone, going to the gym with others, spending time alone, eating meat, going to church, and spending time in nature (0 = *never*, 5 = *a lot*).

Personality.   In Study 2 only, we also used the item, "Overall, I feel that I have high self-esteem" (1 = *strongly disagree*, 7 = *strongly agree*) to measure *self-esteem.*

Demographics.   In both studies, we measured *sexual orientation* with a single item (1 = *Completely heterosexual*, 7 = *Completely homosexual*). We also measured parents' combined annual *income* (1 = *less than $20K*, 2 = *$20K–$39K*, 3 = *$40K–$59K*, 4 = *$60K–$79K*, 5 = *$80K–$99K*, 6 = *$100K–$120K*, 7 = *more than $120K*), and participant height in inches and weight in pounds to calculate body mass index (BMI).

Results

Similarity of newly formed dyads.   We calculated ICCs as a measure of dyad members' similarity for each sequence of interacting dyads formed in the initial meet-and-greet activity. Table 3 presents the mean ICCs for each of the six domains of similarity we measured (behaviors, attitudes, activities, prejudices, demographics, personality). We found significant, positive ICCs on a small percentage of the dimensions we measured, ranging from 2%-17% in Study 2 and 6%-12% in Study 3. The mean ICC across all dimensions was low, ranging from .00 to .06. As one would expect, the overall level of similarity that characterizes the dyads formed in the meet-and-greet activity is substantially lower than the similarity we found within naturally occurring dyad members in Study 1 (where the vast majority of dyads were already in established relationships and where we found significant, positive ICCs on 86% of the variables measured). Most of the dyads that

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[8] Most of the single items were written specifically for mass screening by researchers; the full text of the items is available from the authors.

[9] Only a subset of these groups were rated in Study 3, including alcoholics, Arabs, drunk drivers, fat people, gay men, interracial couples, students at Kansas State University (a rival university), and welfare recipients.

Table 3
Similarity of Dyads Formed in Initial Meet and Greet Activity

	Study 2				Study 3		
Measure	Dyad 1 (N = 154)	Dyad 2 (N = 127)	Dyad 3 (N = 99)	Dyad 4 (N = 58)	Dyad 1 (N = 107)	Dyad 2 (N = 70)	Dyad 3 (N = 65)
			Mean ICC by domain				
Behaviors	.13	.06	.04	.07	.09	.08	.04
Attitudes	.04	.05	−.08	.04	.02	−.01	.10
Activities	.05	.01	−.02	.07	.06	.06	.04
Prejudices	.02	.07	.04	.06	−.01	.08	−.11
Demographics	.19	.03	.08	.09	.16	.04	.02
Personality	.06	.00	.03	.00	.03	.00	−.09
			Mean ICC across all domains				
	.06	.04	.02	.06	.06	.05	.00
	10/59	*7/59*	*1/59*	*4/59*	*6/49*	*6/49*	*3/49*

Note. Values are the mean ICC across all variables measured in each domain. For variables measured at Wave 1 and Wave 2, we included ICCs from Wave 1 only. The number of significant, positive ICCs ($p < .05$) of the total number of variables measured is shown in italics.

formed as a result of the activity were not any more similar to each other than one would expect by chance, which is what one would expect given that most of the dyads did not continue their interaction beyond the first meeting.

Friendship outcomes. A small portion of the dyads that formed were similar in a variety of ways; one might expect that dyad members that were similar at the time of first acquaintance would be more interested in continuing their interaction and potentially becoming friends. To test this hypothesis we compared the dyad members that voluntarily continued to interact after the initial meet-and-greet activity with those that did not interact again. Table 4 presents the descriptive statistics for the friendship outcomes measured at Wave 2. In both studies, about 23% of the sample reported having spoken to at least one of the people they had met again, after the initial in-class conversation. Most participants reported having spoken with only one of these people, and the interactions they reported were generally infrequent and brief. Thus the dyad members reporting continuing interaction were likely in the earliest stages of friendship formation at Wave 2.

Table 5 compares the ICCs for dyad members that continued interacting after the initial in-class conversation and dyad members that did not interact again. In Study 2, 68 dyads reported having spoken to each other since the day of the activity; 31 of these dyads reported having become friends. In Study 3, 86 dyads reported having spoken to each other since the day of the activity; 54 of these dyads reported having become friends. We compared these *continuing interaction dyads* (N = 68 in Study 2, N = 86 in Study 3) to the *noninteracting dyads*—dyads reporting that they had not spoken to each other since the initial in-class conversation (N = 133 in Study 2, N = 120 in Study 3). We computed paired samples *t* tests using the z-transformed ICCs for each subgroup of dyads. Throughout this section we report one-tailed tests because we are testing a directional hypothesis and it is not important for our theory to distinguish between accepting the null hypothesis and finding a difference in the *opposite* of the predicted direction. Based on the similarity-attraction hypothesis, we expected that continuing interaction dyads would be more (and not less) similar than noninteracting dyads. If we hypothetically found that con-

Table 4
Friendship Outcomes for Dyads Formed in Initial Meet and Greet Activity

Friendship outcome	Study 2 (N = 418)	Study 3 (N = 452)
Have you spoken to any of the people you met during the in-class exercise at the beginning of the semester since that day?	24% Yes	23% Yes
Would you say that you have become friends with any of the people that you met during the in-class exercise?	15% Yes	18% Yes
Do you feel friendly with one or more of the people you met in the in-class meet and greet activity?[a]	[e]	2.38 (1.68)
With how many people from the in-class exercise have you spoken?	.73 (1.09)	.56 (.85)
How many times did you talk to that person/those people?[b]	2.02 (.80)	1.87 (.80)
How long were your conversations with that person/those people?[c]	2.04 (1.34)	1.91 (1.31)
How many of the people you met during the in-class exercise would you be able to name right now?	.87 (1.13)	.67 (.89)
How often have you spoken to any of these people in class this semester?[d]	.95 (1.48)	.91 (1.52)
How often have you spoken to any of these people outside of our class?[d]	.88 (1.52)	.91 (1.59)
How often have you hung out with one of these people outside of our class?[d]	.68 (1.39)	.71 (1.43)

Note. Values are means for each friendship outcome item; standard deviations are in parentheses.
[a] 0 = *no, not at all*, 5 = *yes, very much so.* [b] 1 = *once*, 2 = *a few times*, 3 = *more than a few times.* [c] 1 = *less than 5 min.*, 2 = *5–30 min.*, 3 = *30 min.–1 hr.*, 4 = *1 to 2 hrs.*, 5 = *more than 2 hrs.* [d] 0 = *not at all*, 5 = *a lot.* [e] Item not measured in this study.

Table 5

Comparing Similarity of Continuing Interaction Dyads and Noninteracting Dyads

	Study 2		Study 3			
	Continuing interaction dyads (N = 68)	Noninteracting dyads (N = 133)	Continuing interaction dyads (N = 86)		Noninteracting dyads (N = 120)	
Measure	Wave 1	Wave 1	Wave 1	Wave 2	Wave 1	Wave 2
	Mean ICC by domain					
Behaviors	.28	.11	.16	.22	.02	.12
Attitudes	.18	−.02	.08	.11	.02	−.05
Activities	.12	.08	.08	.06	.05	.03
Prejudices	.11	.00	.05	.13	−.05	.03
Demographics	.43	.19	.26	a	.22	a
Personality	.07	.03	.04	.02	.04	.06
	Mean ICC across all domains					
	.17	.05	.11	.10	.05	.04
	15/59	*4/59*	*12/49*	*8/41*	*5/49*	*4/41*

Note. Values are the mean ICC across all variables measured in each domain. The number of significant ICCs ($p < .05$) of the total number of variables measured is shown in italics.
[a] Domain not measured at Wave 2.

tinuing dyads were less similar than noninteracting dyads, we would reject the null with a two-tailed test, but this could not be considered support of our hypothesis and we would treat the outcome the same as if we had accepted the null.

Using the prescreen measures collected before the start of Study 2, we determined that continuing interaction dyads (mean ICC = .11, $SD = 0.13$) were significantly more similar to one another even before they met compared to noninteracting dyads (mean ICC = .04, $SD = 0.06$), $t(23) = 2.87$, $p < .01$, *one-tailed*).

Dyad members that continued their interaction after the initial in-class conversation were significantly more similar to one another at Wave 1 than dyad members that chose not to interact again, $t(58) = 3.78$, $p = .0004$, *one-tailed* in Study 2; $t(48) = 2.27$, $p = .03$, *one-tailed* in Study 3.[10] Dyad members that were interested in continuing their interaction and possibly becoming friends were more similar soon after they first met compared to dyad members that were not interested in continuing their interaction.

Sex composition of the dyads. In Study 2, all of the dyads were same-sex. In Study 3, similarity within dyads was not significantly different for same-sex and opposite-sex dyads at Wave 1. The finding that continuing interaction dyad members were more similar at Wave 1 than noninteracting dyad members was stronger for same-sex dyads, $t(47) = 1.83$, $p = .07$, *one-tailed* than for opposite-sex dyads, $t(47) = 1.18$, $p = .24$, *one-tailed*. Because the N was larger for same-sex pairs than opposite sex pairs, any conclusions drawn from this study about similarity present in the early stages of relationship development predicting further friendly interaction should be limited to the context of same-sex interactions.

Initial attraction. If the greater degree of similarity within continuing interaction dyad members compared to noninteracting dyad members that we observed at Wave 1 was already established (and discernible) at the time of the initial conversation, we should expect according to the similarity-attraction hypothesis that ratings of attraction and interest in pursuing friendship immediately following the conversation should also be greater among these dyads. This is exactly what we found. In Study 2, initial attraction was significantly greater among continuing interaction dyad members

($M = 5.54$, $SD = 1.37$) compared to noninteracting dyad members ($M = 5.12$, $SD = 1.18$), $t(403) = 3.11$, $p = .002$. Additionally, initial attraction was marginally higher for dyad members who eventually became friends ($M = 5.78$, $SD = 1.25$) compared to dyads who spoke again but had not yet become friends ($M = 5.33$, $SD = 1.44$), $t(112) = 1.79$, $p = .08$.

In Study 3, we again found that initial attraction was significantly greater among continuing interaction dyad members ($M = 5.72$, $SD = 1.59$) compared with noninteracting dyad members ($M = 5.08$, $SD = 1.27$), $t(415) = 4.55$, $p < .0005$. There was no difference in attraction between dyads who eventually became friends ($M = 5.78$, $SD = 1.56$) and dyads who spoke again but had not yet become friends ($M = 5.62$, $SD = 1.63$), $t(163) = 0.65$, $p = .52$.

When does similarity matter most? If similarity has its greatest effect in the early stages of acquaintanceship, one might expect that continuing interaction dyads—already more similar than noninteracting dyads at Wave 1—will not increase in similarity over time, as they have already established their compatibility by deciding to pursue future interaction. If, however, similarity affects attraction increasingly as the relationship progresses, one might expect that similarity would increase from Wave 1 to Wave 2, especially within continuing interaction dyads (thus we now return to two-tailed tests). In Study 3, we compared the dyads on the z-transformed ICCs at Wave 1 and at Wave 2.[11] For both continuing interaction dyads, $t(40) = 0.74$, $p = .47$, and noninteracting dyads, $t(40) = 0.95$, $p = .35$, there was no significant change in similarity from Wave 1 to Wave 2. Dyad members that were interested in pursuing a friendship did not change to become more alike over the course of the semester; *future friends were more similar soon after they first met.*

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[10] See online supplemental files for descriptive statistics accompanying all *t* tests.
[11] There were not enough measures assessed at both Wave 1 and Wave 2 to do this analysis with data from Study 2.

Only a subset of the continuing interaction dyad members reported having become friends. We compared the *z*-transformed ICCs for the dyad members that became friends and the dyad members that had spoken to each other again since the initial conversation but had not yet labeled their relationship as a friendship; there was not a consistent pattern across studies, $t(58) = -2.26$, $p = .03$ in Study 2; $t(48) = 0.53$, $p = .60$ in Study 3. These findings suggest that similarity has its greatest effect on attraction very early in the acquaintanceship phase. Similarity seems to have been a determining factor in whether or not just-acquainted dyad members sought future interaction and the possibility of friendship, but it is unclear whether it determined whether or not continuing interaction dyad members actually became friends. Similarity seems to be important in making the leap from the first conversation to the second conversation, but its influence on the later development of a friendship may stop once a stable and desirable social environment has been established.

General Discussion

Across a wide range of personality traits, attitudes, values, prejudices, and behaviors, and in both campus and community samples, we found that friends (or friends-in-the-making) are similar regardless of how long or how well they know each other. This is most consistent with a niche construction account of dyad members' similarity (Alford, Hatemi, Hibbing, Martin, & Eaves, 2011; Scarr & McCartney, 1983; Watson et al., 2004). Conversation in the early stages of friendship is often limited to superficial topics (Duck & Miell, 1986), yet the newest friends in our samples already held similar attitudes on important issues like abortion, gay rights, political ideology and racial prejudices, and shared levels of attachment anxiety, attachment avoidance, and extraversion. Similarity appeared across every measured domain. With 86% of variables showing significant levels of similarity, we must conclude that relationships are formed, in part, by the selection of partners who share important attitudes, values, prejudices, activities, and some personality traits.

Similarity within dyads was equally strong regardless of friendship length, closeness, and whether or not attitudes had been discussed. Social influence could account for these data only if influence happens very, very early in the relationship and with virtually no effort, which seems unlikely in part because it would have to occur simultaneously on every dimension we measured (cf. Cullum & Harton, 2007). In Studies 2 and 3 we found that similarity *preceded* the pursuit of further friendship, consistent with the notion that similarity is more a cause than a consequence of friendship.

This is not to say that friends do not come to know each other better over time; they do (e.g., Biesanz, West, & Millevoi, 2007). Friendships may become closer and more intimate, but areas of initial dissimilarity are likely to persist. When friends disagree about an attitude that is both strongly held and personally important, it may be easier to end the friendship than to change one another's beliefs. But it is easier still to avoid forming friendships with people when their traits, attitudes, values, and behaviors are too discrepant at the outset. This becomes even more important when a person has more than one friend—adapting one's attitudes to multiple discrepant friends is extremely difficult, if not impossible. Any social influence that moves us closer to one friend, family member, or lover must necessarily move us *away* from other friends or family members. How can one be at peace if one's friends pull you in all different directions? Selecting a cadre of like-minded friends solves several problems at once—it reduces discrepancy between self and others, allows harmony among friends, and affords a stable self that needn't accommodate others endlessly. A similarity-based selection strategy unfortunately eliminates the benefits one could gain from diverse friendships (Smith et al., 1997).

People engage in niche construction when they seek out environments and behavior settings that are consistent with their personalities (Mischel & Shoda, 1998, 1999; Scarr & McCartney, 1983). We extend this notion to the domain of friendship initiation, arguing that selecting similar friends also functions as a means of identity construction. Conceptualizing similarity in relationships as a product of niche construction provides a new framework for researchers to better understand the earliest stages of friendship initiation.

Similarity Matters Early

Because dyad members tend to be similar on personality traits, attitudes, values, prejudices, and behaviors, soon after first meeting—and with no apparent need for discussion—there must be a way to find people with similar personality traits, attitudes, values, prejudices, and behaviors that does not involve direct query. Similarity may come structurally preprogrammed, when similar others meet each other based on similar pursuits (e.g., at parochial school, the swim team, or a food pantry), or while engaging in mutual interests (e.g., at the synagogue or the gym; McPherson et al., 2001). But people are remarkably proficient at discerning important attitudes and personality traits quickly and accurately, based on milliseconds of information (Ambady, Bernieri, & Richeson, 2000). Social and psychological mechanisms allow similar others to find each other, without search or open discussion, rapidly and without apparent conscious choice (Crozier, 1987; Wedekind, Seebeck, Bettens, & Paepke, 1995).

Similarity is not alone in affecting friendship development; self-disclosure, trust, and reciprocity all deepen friendship (Fehr, 2009). Similarity is detected quite early—in a first meeting—and it affects choice almost immediately. But soon after, similarity takes a back seat, making way for a raft of other phenomena that affect the course of relationship development.

In a recent review of online dating, Finkel et al. (2012) consider how well similarity between partners' individual qualities predicts their romantic outcomes; their answer is "not particularly well." This fits with the conclusion of Montoya et al. (2008) that similarity does not consistently affect relationship satisfaction within existing relationships. Later they note that although "the tendency for partners within a couple to share their important attitudes and values (e.g., preferences, political views, spirituality) is strong and well-documented (e.g., D'Onofrio, Eaves, Murrelle, Maes, & Spilka, 1999; Nagoshi, Johnson, & Honbo, 1992), support for the idea that greater similarity on attitudes and values benefits relationships remains weak and inconsistent" (pp. 44–45).

These conclusions are completely consistent with our data; if similarity matters only near the beginning of relationships, then similarity *should* be a poor predictor of long-term relationship satisfaction (Finkel et al., 2012; Montoya et al., 2008; see also Murstein, 1987). Because the relationships that are subject to study in the research reviewed by Finkel et al. were *already beyond the initial selection stage* there is a substantial restriction of range in

these studies; dyad members who were insufficiently similar were no longer present in the relationships.

Similarity did increase with intimacy, though only on a few dimensions. But the small effect of intimacy we observed does not mean social influence is not a possible route to similarity; *social influence is attenuated by selection*, as there is less room for influence if potential friends have already met a subjective standard of similarity at the outset of a relationship.

Fundamentally built into our argument is that similarity matters for friendship and relationship *choice*. To build a niche, a person must have access to raw materials, in this case a variety of people to choose among. But we cannot always choose our friends; relationships are thrust upon us by circumstance, family, educational cohorts, work arrangements, and the like. Some environments offer little choice—rural settings, small colleges, remote workplaces—and in such settings, lower levels of similarity within relationship partners are not uncommon (e.g., Bahns et al., 2012; Schug, Yuki, Horikawa, & Takemura, 2009).

Individual choice and agency set the stage for niche construction; as choice declines, so also should similarity in relationships. Similarity should manifest differently in "involuntary" relationships in two ways. The first is that individuals in low-choice environments cannot simply avoid people who disagree with them. In these cases, one might expect social influence to occur. Among college students, for example, there is evidence of attitudinal influence within dormitories, where neighbors and even roommates are often decided by others (e.g., Cullum & Harton, 2007), or among members of fixed computer-mediated discussion groups (Latané & Bourgeois, 1996).

Second, we expect that in low-choice environments, similarity plays an important role in the progress of relationship development. When higher levels of dissimilarity are possible in relationships that are inescapable (e.g., at work, cohorts in education), similarity will be a predictor of relationship satisfaction and intimacy. For example, in contrast to the mostly weak effects found in North American and European studies, a study of Chinese couples found substantial correlations between couple similarity and marital satisfaction (Luo et al., 2008). This difference may be attributable to a lower degree of freedom in making the initial marital choice in China compared to the more individualistic West (see Luo et al., 2008).

In the 11 samples of Study 1 we found significant similarity within naturally occurring dyads at varying stages of relationship development and across a variety of attitudinal, personality, and behavioral dimensions, which we propose is evidence of niche construction. One possible alternative pathway to friendship similarity is homogamy (i.e., friends are similar only because they are drawn from a homogeneous population). Based on our methods and results we claim that homogamy played only a minimal role in Study 1 for several reasons. First and most importantly, high levels of homogamy do not always lead to high levels of similarity within friendships. If homogamy alone accounts for friendship similarity, homogeneous environments (as compared to diverse environments) should produce more similar friendships. Bahns et al. (2012) found exactly the opposite effect; dyads from small, comparatively uniform colleges in rural Kansas showed less similarity than dyads from the larger and more diverse University of Kansas. Higher levels of homogamy mean less choice, and according to Bahns et al. less choice means less similarity within friendships (when friendship similarity is measured in comparison to the high

baseline levels of similarity in the population). In Study 1 there is more homogamy in the population for our college student samples as compared to our community adult samples, yet we found lower levels of similarity within college student friendships compared with community adult friendships.

We also believe homogamy provides no account for the findings in Studies 2 and 3. Here, the structural factors that lead to similarity are likely to be very high—these are all students registered for the same class, at the same time of day, at the same university, in the same room, in the same semester, who were actually present in class at the time of the study. Even with these powerful contributors to similarity, within this context and these constraints, people who found others who shared their characteristics marginally more than average were more likely to pursue a friendship. Homogamy cannot account for the higher levels of similarity among continuing interaction dyads compared with noninteracting dyads.

Finally, the statistical calculation of similarity—the ICC—describes the degree of similarity within dyads *in comparison to the variability within the sample*. For an ICC to be statistically significant, observed dyads have to be more similar than randomly paired dyads from the same sample. That is, to the extent that homogamy operates, say, on students at the university we sampled from, this homogamy is reflected in both the numerator *and* denominator of the fraction used to calculate the ICC. The similarity we present underdescribes the similarity effects, and many essential similarities that would contribute to homogamy (e.g., region of country, shared citizenship, use of English, attendance at college) are completely invisible in our analysis. High levels of similarity within a population necessarily lead to lower levels of dyadic similarity by comparison, both conceptually and statistically.

Strength and Limitations

The methods we employed in this research have the advantage of capturing dyads in the earliest stages of relationship development, which are not often studied, particularly using both members of the dyad (Cooper & Sheldon, 2002). In Study 1, our free-range dyad harvest method captured naturally occurring dyads that vary greatly in length of relationship. We used a method that captures people in their everyday lives, basing measured similarity from important choices of how they will spend their time, and with whom. The method offers a simple approach to studying niche construction with substantial ecological validity (Barker, 1968; Bronfenbrenner, 1977).

One limitation of this technique is that "newer" relationships are less frequent than more longstanding relationships and thus our sample is not evenly distributed across the full range of stages of relationship development. Researchers interested in the beginning stages of relationships must consider the trade-offs between the ecological validity of our free-range dyad method and the potential for skewed distributions.

In Studies 2 and 3, we held the meet-and-greet activity on one of the first class days of the semester, to ensure that most participants did not know each other prior to the study. This maximized the number of "strangers" in the pool of people participants were eligible to meet. A limitation of this design choice is that the Wave 1 assessment of similarity came after the first meeting. Consequently, we are unable to rule out the possibility that social influence occurred between the first meeting and the Wave 1 assessment. We do know, however, that

dyads who later chose to continue their interaction were more similar at the time of the prescreen survey (administered before the first meeting) than those who did not, and that similarity within dyads remained stable between Wave 1 and Wave 2. It seems unlikely that social influence would occur at the very beginning of relationship development and then stop abruptly, however this remains an open question for future research.

Finally, although our data include both same-sex and opposite-sex dyads, the conclusions drawn from these studies should be focused on nonromantic relationships. The number of romantic partners in our samples was small, and with two exceptions the findings we report do not differ according to the sex-composition of the dyad. The first exception was that the modest effect of intimacy in Study 1 was more pronounced among same-sex dyads than among opposite-sex dyads. Members of same-sex and opposite-sex dyads may have interpreted the meaning of intimacy differently; we cannot distinguish between emotional intimacy and physical intimacy as contributors to social influence. The second exception was that same-sex (but not opposite sex) continuing interaction dyads in Study 3 were more similar than noninteracting dyads at Wave 1. Although most findings across the many samples and studies find very few gender differences, and very few differences between same- and opposite-sex dyads, our data allow the strongest conclusions for the context of same-sex interactions.

Conclusions

Our methods provide a cross-sectional and a short-term longitudinal look at similarity in relationships, as a way to evaluate the claim that people select similar others as a means of niche construction. The data strongly support the idea that people affiliate with people who are similar to them on a wide range of dimensions, and similarity appears to emerge quite early in the process of relationship development. These data suggest that similarity comes from niche construction or social selection (with a plethora of findings) and much less from influence (with a penury of findings). We have found a large domain in which partners show very little change—personality traits, attitudes, values, prejudices, and a selection of socially relevant activities and behaviors. Niche construction allows for stability of identity, value systems, and ideological network.

The pervasiveness across domains, the reliability of findings across labs, locations, and the near-universality of similarity as a characteristic of human relationships (despite some cross-cultural variation in the *size* of similarity coefficients; Heine, Foster, & Spina, 2009), point in the direction of a fundamental, biological basis for similarity-seeking. Our data are consistent with the idea that people construct their social environments—they build a social niche—to be compatible with their traits and values. Such niches can be highly adaptive; they promote easy communication, and high levels of trust. Similarity among people enhances trust (Ziegler & Golbeck, 2007), which improves relationships (Rempel, Holmes, & Zanna, 1985). Similarity-based social niches provide an environment of cooperation, reciprocity, and coalition formation.

The social ecology of acquaintanceship and friendship in our samples allows for choice and opportunity. In a context that allows for easy friendship initiation and a relatively easy exit from relationships, similarity and other attractive attributes can drive friendship choice in a way that allows people to construct coherent, fluent, and rewarding social niches (Anderson, Adams, & Plaut, 2008). The smorgasbord-like opportunity among students at a large university, and even among citizens of a moderately diverse college town, allows potential friends to avoid the difficult work of adaptation and social influence to achieve similarity on established attitudes. Given the opportunity, people pursue friendship with similar others, and avoid future interaction with dissimilar others. But once a comfortable social niche is established, they do not much change their attitudes to match their friends, regardless of time, closeness, or communication.

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Appendix A

Complete List of Descriptive Statistics and ICCs for All Eleven Samples

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (*SD*)	Attitude discussion Mean (*SD*)	Attitude importance Mean (*SD*)	ICC
1	Conscientiousness	93	5.11 (1.39)	a	a	.11
1	Extraversion	93	4.94 (1.59)	a	a	.21*
1	Neuroticism	93	4.95 (1.41)	a	a	.15
1	Agreeableness	93	4.79 (1.44)	a	a	.31**
1	Openness	93	5.02 (1.67)	a	a	.31**
1	Attachment Avoidance	92	2.99 (1.03)	a	a	.27**
1	Attachment Anxiety	92	4.12 (1.25)	a	a	.57***
1	The so-called underdog deserves little sympathy or help from successful people.	92	3.20 (2.00)	a	a	.30**
1	My overall attitude toward gays is . . . (favorable/unfavorable)	92	5.25 (1.75)	a	a	.28**
1	Anyone who is willing and able to work hard has a good chance of succeeding.	91	5.36 (1.63)	a	a	.43***
1	In general, how would you describe your political views?	89	4.13 (1.70)	a	a	.41***
1	Age (years)	92	21.10 (2.19)	a	a	.65***
1	How long have you known the person you are with right now? (length)	93	28.09 (32.01)	a	a	.94***
1	How well do you know the person you are with right now? (closeness)	90	5.44 (1.64)	a	a	.74***
2	It is immoral for couples to have sexual relations before they are married.	141	2.16 (1.70)	2.05 (.92)	3.17 (1.85)	.10
2	The federal government should be allowed to access individuals' telephone, email, and financial records without a warrant.	140	2.13 (1.52)	1.29 (.62)	5.52 (1.24)	.04
2	Abortion should be illegal in all situations.	140	2.73 (2.05)	1.89 (.89)	5.61 (1.59)	.25**
2	The federal government should do more to protect the environment.	140	5.85 (1.22)	1.70 (.86)	5.61 (1.59)	.15*
2	Anyone who is willing and able to work hard has a good chance of succeeding.	141	5.78 (1.36)	2.08 (.83)	5.31 (1.43)	.32***
2	It is not a problem if some people have more of a chance in life than others.	139	3.40 (1.56)	1.55 (.79)	4.53 (1.46)	.09
2	I have no problem paying taxes to the federal government in return for services like public education and subsidized health care.	140	5.27 (1.55)	1.42 (.72)	5.45 (1.59)	.12
2	Going to war is often the only way to solve international disputes.	140	3.18 (1.85)	1.76 (.87)	5.84 (1.35)	−.01
2	I believe that gay people deserve the same rights and benefits as heterosexual people.	141	6.14 (1.45)	2.09 (.86)	5.65 (1.47)	.15*

(*Appendices continue*)

Appendix A (*continued*)

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (*SD*)	Attitude discussion Mean (*SD*)	Attitude importance Mean (*SD*)	ICC
2	In general, how would you describe your political views?	143	4.59 (1.56)	[a]	[a]	.32***
2	Age (years)	143	20.21 (2.25)	[a]	[a]	.47***
2	How well do you know the person you are with right now? (closeness)	143	5.57 (1.43)	[a]	[a]	.69***
3	My overall attitude toward abortion on demand is . . .	114	3.99 (1.79)	1.81 (1.04)	4.90 (1.48)	.31***
3	The death penalty is barbaric and should be abolished.	135	3.79 (1.78)	1.48 (.71)	4.09 (1.54)	.12*
3	My overall attitude toward the death penalty for murder is . . .	115	3.96 (1.77)	1.44 (.70)	4.38 (1.57)	.34***
3	People should realize that their greatest obligation is to their family.	135	5.25 (1.32)	1.88 (.88)	5.15 (1.50)	.22***
3	My overall attitude toward exercising is . . .	115	5.47 (1.52)	2.19 (.89)	4.85 (1.79)	.53***
3	My overall attitude toward gays is . . . (favorable/unfavorable)	250	4.99 (1.75)	1.97 (.88)	4.63 (1.83)	.48***
3	My overall attitude toward separate roles for men and women is . . .	115	3.37 (1.57)	1.61 (.77)	4.35 (1.73)	.34***
3	The average person can live a good enough life without religion.	135	4.38 (2.04)	1.85 (.87)	4.73 (1.66)	.43***
3	My overall attitude toward loud music is . . .	115	5.01 (1.49)	1.80 (.85)	3.87 (1.76)	.31***
3	The so-called underdog deserves little sympathy or help from successful people.	135	3.57 (1.72)	1.54 (1.91)	4.21 (1.47)	.17**
3	Birth control, except when recommended by a doctor should be made illegal.	135	1.78 (1.38)	1.70 (.91)	5.06 (1.91)	.52***
3	In general, how would you describe your political views?	250	4.44 (1.69)	[a]	[a]	.37***
3	Age (years)	246	21.06 (4.81)	[a]	[a]	.56***
3	How long have you known the person you are with right now? (length)	244	34.19 (48.78)	[a]	[a]	.98***
3	How well do you know the person you are with right now? (closeness)	248	5.26 (1.72)	[a]	[a]	.80***
3	How close (intimate) would you say is your relationship with this person? (intimacy)	134	4.07 (2.12)	[a]	[a]	.71***
4	Alcoholics	268	3.01 (1.52)	[a]	[a]	.33***
4	Arabs	268	4.85 (1.57)	[a]	[a]	.32***
4	Asian Americans	268	5.42 (1.37)	[a]	[a]	.10
4	Blacks	268	5.47 (1.36)	[a]	[a]	.20***
4	Blind people	268	5.50 (1.33)	[a]	[a]	.13*
4	Drunk drivers	267	1.76 (1.19)	[a]	[a]	.15*
4	Elderly people	268	5.62 (1.40)	[a]	[a]	.15*
4	Environmentalists	267	5.30 (1.52)	[a]	[a]	.18**
4	Fat people	268	4.17 (1.66)	[a]	[a]	.31***
4	Female prostitutes	268	2.99 (1.80)	[a]	[a]	.25***
4	Gay men	268	4.80 (1.93)	[a]	[a]	.28***
4	Homeless people	268	4.00 (1.57)	[a]	[a]	.21***
4	Interracial couples	268	5.61 (1.39)	[a]	[a]	.15*

(*Appendices continue*)

Appendix A (*continued*)

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (*SD*)	Attitude discussion Mean (*SD*)	Attitude importance Mean (*SD*)	ICC
4	Jews	267	5.43 (1.39)	a	a	.22***
4	K-State students	268	3.93 (1.97)	a	a	.19**
4	Latinos	267	5.21 (1.42)	a	a	.25***
4	Marching band members	268	5.15 (1.53)	a	a	.26***
4	Native Americans	268	5.44 (1.31)	a	a	.18**
4	Politicians	268	3.92 (1.54)	a	a	.34***
4	Welfare recipients	268	4.29 (1.51)	a	a	.28***
4	In general, how would you describe your political views?	262	4.73 (1.61)	a	a	.28***
4	Age (years)	262	20.23 (3.39)	a	a	.34***
4	How long have you known the person you are with right now? (length)	257	41.11 (53.46)	a	a	.93***
4	How well do you know the person you are with right now? (closeness)	266	5.15 (1.71)	a	a	.64***
4	How close (intimate) would you say is your relationship with this person? (intimacy)	266	3.83 (2.22)	a	a	.56***
5	Playing an instrument	173	1.69 (1.75)	a	a	.22***
5	Going to a concert	174	2.67 (1.49)	a	a	.11*
5	Doing artwork	173	1.95 (1.66)	a	a	.28***
5	Going out drinking	173	3.10 (1.62)	a	a	.35***
5	Spending time in social settings	174	4.12 (.99)	a	a	.22***
5	Reading books and magazines	174	3.79 (1.20)	a	a	.04
5	Going out to eat	174	3.75 (1.04)	a	a	.22***
5	Spending time alone	174	2.97 (1.24)	a	a	.31***
5	Going to movies	174	3.14 (1.38)	a	a	.20***
5	Going to class	174	4.53 (.99)	a	a	.44***
5	Working out at the gym alone	173	2.34 (1.66)	a	a	.14**
5	Working out at the gym with others	174	2.90 (1.69)	a	a	.36***
5	Alcoholics	174	3.19 (1.39)	a	a	.19***
5	Arabs	174	4.90 (1.41)	a	a	.23***
5	Fat people	174	4.35 (1.51)	a	a	.22***
5	Gay men	174	5.03 (1.63)	a	a	.33***
5	Welfare recipients	174	4.08 (1.41)	a	a	.11
5	Female prostitutes	174	3.00 (1.50)	a	a	.19***
5	Latinos	174	5.13 (1.39)	a	a	.28***
5	Homeless people	174	3.95 (1.37)	a	a	.06
5	In general, how would you describe your political views?	174	4.67 (1.55)	a	a	.34***
5	Age (years)	174	18.87 (6.78)	a	a	.89***
5	How long have you known the person you are with right now? (length)	173	40.48 (52.68)	a	a	.94***
5	How well do you know the person you are with right now? (closeness)	174	5.42 (1.51)	a	a	.83***
6	Alcoholics	99	3.29 (1.58)	2.17 (.88)	a	.19*
6	Arabs	97	4.81 (1.45)	1.56 (.81)	a	.16
6	Blacks	99	5.60 (1.28)	2.09 (.91)	a	.20*
6	Drunk drivers	98	1.99 (1.36)	2.19 (.85)	a	.28**
6	Environmentalists	96	4.96 (1.47)	1.66 (.84)	a	.28**
6	Fat people	100	3.95 (1.47)	2.09 (.89)	a	.15
6	Female prostitutes	98	3.08 (1.70)	1.79 (.86)	a	.25**
6	Gay men	99	4.95 (1.80)	2.19 (.86)	a	.43***
6	Homeless people	98	3.86 (1.47)	1.89 (.88)	a	.24**
6	Interracial couples	96	5.54 (1.41)	1.75 (.87)	a	.34***

(*Appendices continue*)

Appendix A (*continued*)

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (*SD*)	Attitude discussion Mean (*SD*)	Attitude importance Mean (*SD*)	ICC
6	Jews	98	5.21 (1.45)	1.75 (.87)	a	.11
6	Latinos	96	5.19 (1.50)	1.64 (.83)	a	.21*
6	Native Americans	97	5.08 (1.51)	1.59 (.82)	a	.17*
6	Politicians	97	4.08 (1.60)	1.93 (.89)	a	.05
6	Welfare recipients	94	3.95 (1.50)	1.48 (.76)	a	.33***
6	In general, how would you describe your political views?	94	4.49 (1.68)	a	a	.16
6	Would you say that you enjoy his or her company? (liking)	98	6.37 (.85)	a	a	.51**
6	Relationship type (barely know, acquaintances, friends, very good friends, best friends, romantic partners)	97	—	a	a	.67***
7	Alcoholics	196	2.87 (1.61)	a	a	.32***
7	Arabs	198	4.56 (1.83)	a	a	.39***
7	Asian Americans	198	5.08 (1.53)	a	a	.33***
7	Blacks	197	5.08 (1.65)	a	a	.33***
7	Blind people	198	5.34 (1.51)	a	a	.37***
7	Drunk drivers	198	1.71 (1.26)	a	a	.16*
7	Elderly people	196	5.46 (1.49)	a	a	.36***
7	Environmentalists	197	5.13 (1.60)	a	a	.39***
7	Fat people	197	4.24 (1.65)	a	a	.47***
7	Female prostitutes	198	3.40 (1.81)	a	a	.20**
7	Gay men	197	4.47 (2.00)	a	a	.33***
7	Homeless people	198	3.93 (1.64)	a	a	.37***
7	Interracial couples	198	5.16 (1.72)	a	a	.37***
7	Jews	198	5.07 (1.59)	a	a	.35***
7	K-State students	198	4.38 (1.62)	a	a	.33***
7	Latinos	198	4.86 (1.64)	a	a	.46***
7	Marching band members	198	4.84 (1.58)	a	a	.26**
7	Native Americans	198	5.09 (1.55)	a	a	.34***
7	Politicians	198	3.57 (1.56)	a	a	.16*
7	Welfare recipients	197	3.84 (1.55)	a	a	.22**
7	In general, how would you describe your political views?	196	4.83 (1.73)	a	a	.45***
7	Age (years)	195	34.48 (13.80)	a	a	.66***
7	How well do you know the person you are with right now? (closeness)	197	5.11 (1.79)	a	a	.81***
7	How close (intimate) would you say is your relationship with this person? (intimacy)	196	5.14 (1.71)	a	a	.59***
7	How long have you known the person you are with right now? (length)	136	76.41 (94.12)	a	a	1.00***
7	Relationship type (barely know, acquaintances, friends, very good friends, best friends, romantic partners)	196	2.86 (1.47)	a	a	.90***
8	Alcoholics	47	3.80 (1.76)	2.22 (.86)	a	.63***
8	Arabs	47	4.98 (1.63)	1.94 (.94)	a	.46***
8	Blacks	47	5.46 (1.57)	2.23 (.87)	a	.38**
8	Drunk drivers	47	2.23 (1.64)	2.41 (.83)	a	.24
8	Environmentalists	48	4.95 (1.57)	2.04 (.91)	a	.26*
8	Fat people	48	3.94 (1.44)	2.14 (.91)	a	.34*
8	Female prostitutes	47	3.36 (1.66)	1.80 (.92)	a	.38**
8	Gay men	48	4.72 (1.77)	2.32 (.86)	a	.55***
8	Homeless people	47	3.85 (1.48)	2.26 (.83)	a	.43**
8	Interracial couples	48	5.42 (1.78)	2.12 (.91)	a	.67***

(*Appendices continue*)

Appendix A (*continued*)

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (*SD*)	Attitude discussion Mean (*SD*)	Attitude importance Mean (*SD*)	ICC
8	Jews	48	5.29 (1.68)	1.89 (.91)	a	.29*
8	Latinos	48	5.34 (1.58)	1.97 (.92)	a	.52***
8	Native Americans	48	5.37 (1.58)	1.89 (.86)	a	.50***
8	Politicians	48	3.93 (1.65)	2.38 (.87)	a	.26*
8	Welfare recipients	47	3.86 (1.49)	2.16 (.90)	a	.29*
8	In general, how would you describe your political views?	47	4.52 (2.00)	a	a	.64***
8	Age (years)	48	33.70 (15.78)	a	a	.75***
8	How long have you known the person you are with right now? (length)	48	162.93 (200.84)	a	a	.99***
8	Would you say that you enjoy his or her company? (liking)	47	6.52 (.82)	a	a	.45***
8	Relationship type (barely know, acquaintances, friends, very good friends, best friends, romantic partners)	47	—	a	a	.86***
9	Alcoholics	116	2.67 (1.44)	a	a	.21*
9	Arabs	116	4.62 (1.62)	a	a	.30*
9	Blacks	116	5.26 (1.45)	a	a	.34**
9	Drunk drivers	115	1.63 (1.12)	a	a	.25*
9	Environmentalists	115	5.03 (1.59)	a	a	.39**
9	Fat people	116	3.99 (1.51)	a	a	.23
9	Homeless people	116	3.70 (1.54)	a	a	.43**
9	Interracial couples	116	5.28 (1.56)	a	a	.46***
9	Jews	116	5.27 (1.32)	a	a	.31*
9	Latinos	116	5.07 (1.43)	a	a	.32*
9	Native Americans	116	5.13 (1.41)	a	a	.29*
9	Welfare recipients	116	3.89 (1.65)	a	a	.47***
9	White Americans	114	5.62 (1.27)	a	a	.31*
9	In general, how would you describe your political views?	116	4.57 (1.75)	a	a	.42**
9	Age (years)	115	32.87 (14.47)	a	a	.81***
9	How long have you known the person you are with right now? (length)	116	111.11 (129.80)	a	a	.99***
10	Alcohol use (to get drunk) in the past 30 days	102	1.67 (1.42)	a	a	.58***
10	Cigarette use in the past 30 days	102	.54 (1.04)	a	a	.39***
10	Marijuana use in the past 30 days	102	.91 (1.59)	a	a	.37***
10	ADHD stimulant use in the past 30 days	102	.40 (1.00)	a	a	.20**
10	Tranquillizer use in the past 30 days	102	.06 (.38)	a	a	.86***
10	Narcotic use in the past 30 days	102	.05 (.38)	a	a	.80***
10	Cold/cough medicine use (to get high) in the past 30 days	102	.18 (.59)	a	a	.03
10	Hallucinogen use in the past 30 days	102	.03 (.17)	a	a	−.03
10	Ecstasy use in the past 30 days	102	.02 (.20)	a	a	−.02
10	Steroid use in the past 30 days	102	.02 (.20)	a	a	.00
10	In general, how would you describe your political views?	102	4.52 (1.54)	a	a	.10
10	Age (years)	100	20.02 (2.18)	a	a	.54***
10	How long have you known the person you are with right now? (length)	102	25.83 (35.43)	a	a	.96***

(*Appendices continue*)

Appendix A (*continued*)

Sample	Personality dimension, attitude, value, prejudice, or behavior	N	Variable Mean (SD)	Attitude discussion Mean (SD)	Attitude importance Mean (SD)	ICC
10	How well do you know the person you are with right now? (closeness)	102	5.16 (1.68)	a	a	.71***
10	Do you feel that you can confide in this person about virtually everything? (intimacy)	102	5.14 (1.77)	a	a	.73***
11	People should carefully plan how they spend their money.	119	5.83 (1.17)	a	5.61 (1.41)	.29***
11	College students who are juniors and seniors should have concrete career goals.	119	4.94 (1.55)	a	5.12 (1.56)	.27**
11	I am in favor of gay marriage.	120	5.02 (2.13)	a	5.21 (1.86)	.38***
11	I have no problem with eating veal.	118	4.49 (2.12)	a	3.06 (1.90)	.10
11	I watch a news program on TV or read the newspaper (online or in print) daily.	120	5.04 (1.79)	a	5.05 (1.80)	.13
11	Couples should not have sexual relations before they are married.	120	3.02 (1.93)	a	3.83 (2.00)	.44***
11	The government should fund arts and humanities programs in public schools.	119	5.85 (1.29)	a	5.33 (1.53)	.31***
11	Wearing real animal furs for fashion is wrong.	119	3.98 (1.81)	a	3.52 (1.73)	.09
11	I believe that corrupt Wall Street bankers should go to jail.	119	5.74 (1.27)	a	4.86 (1.72)	−.06
11	I believe in love at first sight.	119	4.33 (1.83)	a	3.31 (1.72)	.19*
11	In general, how would you describe your political views?	120	4.30 (1.65)	a	a	.21*
11	Age (years)	119	23.82 (8.69)	a	a	.81***
11	Length (months)	118	47.76 (80.54)	a	a	.98***
11	How close are you to this person? (closeness)	120	5.41 (1.66)	a	a	.68***
11	Do you feel that you can confide in this person about virtually everything? (intimacy)	120	5.52 (1.72)	a	a	.62***
11	How much do you like this person? (liking)	119	6.27 (1.06)	a	a	.31***

Note. Most response scales ranged from 1 to 7, with higher scores indicating more agreement, more positive group attitudes, greater closeness, greater intimacy, or greater attitude importance. In Sample 5, frequency of recreational activities used a scale from 0 (*never*) to 5 (*a lot*). In Sample 10, drug use was assessed with the item "On how many occasions during the last 30 days have you used this drug? (1 = *zero*, 2 = *1–2*, 3 = *3–5*, 4 = *6–9*, 5 = *10–19*, 6 = *20–39*, 7 = *40 or more*). Political views used a scale from 1 (*conservative*) to 7 (*liberal*) with the midpoint labeled *moderate*. Discussion of attitudes was measured with the scale 1 = *It has never come up*, 2 = *We talked about it once*, 3 = *We talked about it more than once*.
[a] Moderator variable not measured for this item.
* p < .05.   ** p < .01.   *** p < .001.

(*Appendices continue*)

Appendix B

Complete List of Results From 391 MLM Moderator Analyses

Sample	Attitude, value, prejudice, or behavior	Length	Intimacy	Closeness	Attitude discussion	Attitude importance
1	Conscientiousness	−.001	a	−.200*	a	a
1	Extraversion	−.084	a	−.085	a	a
1	Neuroticism	.034	a	.000	a	a
1	Agreeableness	−.015	a	.057	a	a
1	Openness	−.001	a	−.068	a	a
1	Attachment avoidance	−.094	a	−.138	a	a
1	Attachment anxiety	.074	a	.110	a	a
1	No underdog sympathy	.007	a	−.025	a	a
1	Protestant work ethic	−.007	a	−.155	a	a
1	Gay attitudes	.004	a	−.002	a	a
2	Protestant work ethic	a	a	.018	.045	−.238
2	Anti-abortion	a	a	−.049	−.832**	−.375
2	Support gay rights	a	a	−.139	−.548	−.518*
2	Protect environment	a	a	.149*	.023	−.263
2	Favor taxes	a	a	−.158	.443	−.317
2	Premarital sex immoral	a	a	−.040	−.096	.501*
2	Social dominance	a	a	−.164	−.048	−.152
2	Allow wiretapping	a	a	−.163	.069	−.666*
2	Favor war	a	a	−.111	−.050	.248
3	Gender roles	.000	a	−.086	−.183	.117
3	Death penalty for murder	.001	a	.107	.262	.170
3	Abortion on demand	−.003	a	−.097	−.059	.099
3	Loud music	−.001	a	−.128	.089	.066
3	Favor exercise	−.000	a	.001	−.030	−.121*
3	Family obligations	−.002	−.123*	−.194*	−.312*	−.255*
3	No underdog sympathy	−.005	−.097	−.080	.035	.026
3	Death penalty barbaric	−.001	.003	−.012	.015	.341*
3	Oppose birth control	.002	−.020	−.058	−.059	−.139*
3	Favorable gay attitudes	−.002	−.042	−.014	−.170	−.063
3	Live w/o religion	−.001	.004	.070	−.151	−.074
3	Liberal politics	−.000	−.031	−.016	a	a
4	Alcoholics	−.001	−.017	−.025	a	a
4	Arabs	−.004*	−.129**	−.072	a	a
4	Asian Americans	−.002	−.033	−.010	a	a
4	Blacks	−.003	.031	−.036	a	a
4	Blind people	−.001	−.045	−.021	a	a
4	Drunk drivers	−.003*	.033	−.053	a	a
4	Elderly people	−.003*	.022	−.017	a	a
4	Environmentalists	.001	.008	.055	a	a
4	Fat people	−.001	−.001	−.077	a	a
4	Female prostitutes	−.001	−.042	−.072	a	a
4	Gay men	−.005**	−.095*	−.115	a	a
4	Homeless people	−.002	−.060	−.109*	a	a
4	Interracial couples	.002	.057	.065	a	a
4	Jews	−.002	−.011	−.090	a	a
4	K-State students	−.003	−.050	−.039	a	a
4	Latinos	−.002	.019	−.028	a	a
4	Marching band members	.000	−.025	−.004	a	a
4	Native Americans	−.002	−.042	−.092*	a	a
4	Politicians	−.001	−.057	−.035	a	a
4	Welfare recipients	−.002	−.064	−.093	a	a
5	Alcoholics	−.000	a	−.071	a	a
5	Arabs	−.001	a	−.013	a	a
5	Fat people	−.002	a	−.043	a	a
5	Gay men	−.003	a	−.023	a	a
5	Welfare	−.003	a	−.130*	a	a
5	Female prostitutes	−.003	a	−.056	a	a

(Appendices continue)

Appendix B (*continued*)

Sample	Attitude, value, prejudice, or behavior	Length	Intimacy	Closeness	Attitude discussion	Attitude importance
5	Latinos	.001	[a]	.005	[a]	[a]
5	Homeless people	−.003	[a]	.003	[a]	[a]
5	Going to class	−.001	[a]	−.084	[a]	[a]
5	Going to a movie	−.001	[a]	−.021	[a]	[a]
5	Playing an instrument	−.000	[a]	−.089	[a]	[a]
5	Going to a concert	−.002	[a]	−.176**	[a]	[a]
5	Doing art	−.001	[a]	−.119	[a]	[a]
5	Going out drinking	.002	[a]	−.092	[a]	[a]
5	Socializing with friends	−.001	[a]	−.045	[a]	[a]
5	Reading a book	−.002	[a]	−.118*	[a]	[a]
5	Eating out	−.001	[a]	−.092	[a]	[a]
5	Being alone	−.001	[a]	−.028	[a]	[a]
5	Going to the gym with others	−.000	[a]	.013	[a]	[a]
5	Going to the gym alone	.002	[a]	.118	[a]	[a]
6	Alcoholics	−.001	[a]	[a]	.279	[a]
6	Arabs	.002	[a]	[a]	−.064	[a]
6	Black Americans	.004	[a]	[a]	−.045	[a]
6	Drunk drivers	.004	[a]	[a]	.282	[a]
6	Environmentalists	.002	[a]	[a]	−.067	[a]
6	Fat people	.004	[a]	[a]	.364*	[a]
6	Female prostitutes	.001	[a]	[a]	.340*	[a]
6	Gay men	.003	[a]	[a]	−.015	[a]
6	Homeless people	.000	[a]	[a]	.032	[a]
6	Interracial couples	.000	[a]	[a]	−.026	[a]
6	Jews	−.000	[a]	[a]	.033	[a]
6	Latinos	−.001	[a]	[a]	−.157	[a]
6	Native Americans	.001	[a]	[a]	−.009	[a]
6	Politicians	.002	[a]	[a]	.100	[a]
6	Welfare recipients	.001	[a]	[a]	−.052	[a]
7	Alcoholics	−.001	−.044	−.094	[a]	[a]
7	Arabs	−.002	−.153	−.104	[a]	[a]
7	Asian Americans	−.002	−.045	−.072	[a]	[a]
7	Blacks	−.004*	−.129	−.098	[a]	[a]
7	Blind people	−.001	−.163*	−.096	[a]	[a]
7	Drunk drivers	−.001	−.020	.048	[a]	[a]
7	Elderly people	−.001	−.051	−.012	[a]	[a]
7	Environmentalists	−.000	.012	.008	[a]	[a]
7	Fat people	−.000	−.142*	−.086	[a]	[a]
7	Female prostitutes	.002	−.019	−.016	[a]	[a]
7	Gay men	−.000	−.156	−.048	[a]	[a]
7	Homeless people	−.001	−.146	−.163	[a]	[a]
7	Interracial couples	−.003	−.053	−.115	[a]	[a]
7	Jews	−.003*	−.147	−.169*	[a]	[a]
7	K-State students	.002	−.095	−.041	[a]	[a]
7	Latinos	−.004**	−.121	−.117	[a]	[a]
7	Marching band members	−.001	−.125	−.082	[a]	[a]
7	Native Americans	−.001	−.112	−.087	[a]	[a]
7	Politicians	.003	−.081	.043	[a]	[a]
7	Welfare recipients	.003	.010	.069	[a]	[a]
8	Alcoholics	−.001	[a]	[a]	−.307	[a]
8	Arabs	.000	[a]	[a]	.002	[a]
8	Black Americans	.000	[a]	[a]	−.414	[a]
8	Drunk drivers	.001	[a]	[a]	.418	[a]
8	Environmentalists	.002	[a]	[a]	.396	[a]
8	Fat people	.001	[a]	[a]	.145	[a]
8	Female prostitutes	.000	[a]	[a]	.089	[a]
8	Gay men	−.001	[a]	[a]	.066	[a]
8	Homeless people	−.000	[a]	[a]	−.145	[a]
8	Interracial couples	.001	[a]	[a]	.120	[a]
8	Jews	.002*	[a]	[a]	.426	[a]

(*Appendices continue*)

Appendix B (*continued*)

Sample	Attitude, value, prejudice, or behavior	Length	Intimacy	Closeness	Attitude discussion	Attitude importance
8	Latinos	.000	a	a	.136	a
8	Native Americans	.002***	a	a	.193	a
8	Politicians	−.001	a	a	−.377	a
8	Welfare recipients	.000	a	a	.006	a
9	Alcoholics	−.001	a	a	a	a
9	Arabs	.001	a	a	a	a
9	Black Americans	−.000	a	a	a	a
9	Drunk drivers	−.001	a	a	a	a
9	Environmentalists	.000	a	a	a	a
9	Fat people	−.001	a	a	a	a
9	Female prostitutes	−.001	a	a	a	a
9	Gay men	.001	a	a	a	a
9	Homeless people	−.001	a	a	a	a
9	Interracial couples	.000	a	a	a	a
9	Jews	−.001	a	a	a	a
9	Latinos	.000	a	a	a	a
9	Native Americans	−.000	a	a	a	a
9	White Americans	.000	a	a	a	a
9	Welfare recipients	.001	a	a	a	a
10	Cigarettes	.002	−.043	.028	a	a
10	Alcohol to get drunk	.002	−.134*	−.100	a	a
10	Marijuana use	−.007	−.021	−.036	a	a
10	Hallucinogen use	−.003	−.005	.013	a	a
10	Ecstasy use	.000	−.001	.001	a	a
10	Tranquillizer use	−.000	−.006	−.009	a	a
10	Narcotics use	−.001	−.028	−.013	a	a
10	Steroids use	.000	.027	.030	a	a
10	Cold/cough medicine use to get high	.001	−.032	.036	a	a
10	ADHD use	.004	.132	.162*	a	a
11	How to spend money	−.001	−.018	−.013	a	−.345***
11	Having concrete career goals	.000	−.023	−.029	a	−.013
11	Support gay marriage	−.002	−.262*	−.246*	a	−.066
11	Eating veal	.001	−.204	−.187	a	−.131
11	Watching the news daily	−.002	−.091	−.059	a	−.196*
11	Premarital sex	−.002	−.102	−.093	a	.083
11	Funding the arts	−.001	−.085	−.100	a	−.189*
11	Wearing animal furs	.003	.001	.029	a	−.008
11	Punishing corrupt Wall St. bankers	.001	−.071	−.027	a	−.147
11	Love at first sight	.001	−.021	.007	a	−.040

Note. Coefficients are the unstandardized regression estimates for the interaction of the dyad-level moderator variable and the dummy-coded variable which models similarity as the slope between dyad members' scores. Negative coefficients mean that the slope decreases (indicating that similarity increases) with increasing values of the moderator (length, closeness, intimacy, discussion, or importance). In counting up significant interaction terms for Table 2, only negative coefficients were counted because positive coefficients reflect moderation in the opposite direction of what is expected.
[a] Moderator variable not measured in this sample.
* $p < .05$.   ** $p < .01$.   *** $p < .001$.