Individual Differences in Fundamental Social Motives

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We thank Roger Millsap, Anna Berlin, and Meara Habashi for consultation on scale development; The Kenrick-Neuberg graduate and faculty lab group for assistance developing items; Chloe Huelsnitz and Isaiah Cottengaim for assistance with coding; Chloe Huelsnitz for assistance with references; and grant support from the ASU Graduate and Professional Student Association to Rebecca Neel.

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Abstract

Motivation has long been recognized as an important component of how people both differ from, and are similar to, each other. The current research applies the biologically-grounded *fundamental social motives framework*, which assumes that human motivational systems are functionally shaped to manage the major costs and benefits of social life, to understand individual differences in social motives. Using the Fundamental Social Motives Inventory, we explore the relations among the different fundamental social motives of self-protection, disease avoidance, affiliation, status, mate seeking, mate retention, and kin care; the relationships of the fundamental social motives to other individual difference and personality measures including the Big Five personality traits; the extent to which fundamental social motives are linked to recent life experiences; and the extent to which life history variables (e.g., age, sex, childhood environment) predict individual differences in the fundamental social motives. Results suggest that the fundamental social motives are a powerful lens through which to examine individual differences: They are grounded in theory, have explanatory value beyond that of the Big Five personality traits, and vary meaningfully with a number of life history variables. A fundamental social motives approach provides a generative framework for considering the meaning and implications of individual differences in social motivation.

Individual Differences in Fundamental Social Motives

How are the social motives of a twenty year-old woman similar to and different from those of a sixty year-old grandfather? From a forty year-old person who grew up in an unstable environment, or a twenty-five year old who has young children? And how do these motives shape what each of these people desires, expects, or fears from others?

Individual differences in motivational inclinations have long been considered essential for understanding people and predicting their behavior (Buss & Cantor, 1989; Emmons, 1995; MacDonald, 1995; McAdams, 1995; McAdams & Pals, 2006; McClelland, 1951; Murray, 1938; Winter, John, Stewart, Klohnen, & Duncan, 1998). A number of approaches posit social motives that functionally guide perception and behavior. For example, interdependence with other people is fundamental to human survival, and may universally motivate social behavior (Baumeister & Leary, 1995). Other theorists have suggested frameworks to characterize motives using a small number of overarching dimensions, such as competence, relatedness, and autonomy (e.g., Deci & Ryan, 2000; Sheldon, 2004), agency and communion (e.g., Bakan, 1966; Hogan, 1982; Roberts & Robins, 2010), or achievement, affiliation, and power (e.g., McClelland, 1985; Smith, 1992). Here, we explore a somewhat larger set of motives. Like some other approaches, we explicitly build from a multidisciplinary perspective that considers personality through the lens of how humans have adapted to their particular, ultra-social niche (Aunger & Curtis, 2013; Bernard, Mills, Swenson, & Walsh, 2005; Buss & Greiling, 1999; Hogan, 1996; MacDonald, 1995, 2012; McAdams & Pals, 2006; McDougall, 1908; Nichols, Sheldon, & Sheldon, 2008; Sheldon, 2004). A biologically-informed approach such as this has been suggested as useful – even essential – for fully understanding and describing personality (e.g., Buss, 1991, 2009; McAdams & Pals, 2006;

Nichols et al., 2008; Sheldon, 2004), and could provide a unifying, theoretically-driven approach to understanding human motivation.

Fundamental Social Motives

We presume that humans' social motives have been shaped by the recurrent adaptive challenges and opportunities social group living affords (Buss, 1991; Gigerenzer, 2000; Haselton & Nettle, 2006; Kenrick, Griskevicius, Neuberg, & Schaller, 2010; Neuberg et al., 2010; Sherry & Schacter, 1987). Building from McClelland's (1985) definition, we define fundamental social motives as *systems shaped by our evolutionary history to energize, organize and select behavior to manage recurrent social threats and opportunities to reproductive fitness*. Importantly, for humans, challenges to reproductive fitness reach well beyond that of finding a mate, and thus one might expect there to be motivational systems to manage these fundamental challenges. Highly dependent, slowly-developing offspring require years of continuous investment from parents and/or other kin. Reaching reproductive age and successfully caring for kin requires minimizing contact with diseases and dangerous others. And to reap the informational, resource-sharing, and other benefits of social ties, people must sufficiently navigate social groups and hierarchies. The fundamental social motives thus include self-protection, disease avoidance[1], affiliation, status seeking, mate seeking, mate retention, and kin care (for further discussion see Kenrick, Neuberg, Griskevicius, Becker, & Schaller, 2010; Neuberg, Kenrick, & Schaller, 2010).

This list of motives contrasts with others in both content and number. For example, unlike perspectives that focus on motives related to intrapsychic needs to understand the world or to view oneself positively (e.g., Brown, 1986; Cacioppo & Petty, 1982; Cacioppo, Petty, Feinstein, & Blair, 1996; Neuberg & Newsom, 1993; Paulhus & Reid, 1991; Sedikides, Gaertner, & Toguchi, 2003), the fundamental social motives approach focuses on motives related

directly to effectively addressing the challenges of interacting with others (including often-underappreciated motives of, for example, disease-avoidance and kin care). And although people may seek to maximize happiness or to fulfill their potential, our approach assumes that motivational systems are not fundamentally "constructed" with these general end-states in mind (Kenrick, Griskevicius et al., 2010).

Moreover, unlike formulations that focus on a more limited number of social motives, the fundamental social motives approach suggests that there is utility in maintaining some dis-aggregation. For example, instead of examining broad, overarching motives for achievement, communion/affiliation, or agency/status/power (e.g., Bakan, 1966; Hogan, 1982; Smith, 1992)—which ostensibly could be fulfilled by any number of relationships—the fundamental social motives approach assumes that different kinds of relationships come with different sets of adaptive problems, which are likely navigated in functionally-specific ways: Managing one's ties to a social group does not pose the same set of adaptive problems as finding and keeping a mate or caring for one's kin (Ackerman & Kenrick, 2008). Yet unlike approaches that contemplate a great number of more specific goals (e.g., Chulef, Read, & Walsh, 2001; Reiss, 2004), we do maintain some aggregation in order to reflect the functional commonalities shared by different social goals. We also focus not on the specific outcomes that people living in a modern context desire ("get married," "have a high-status job"), but in the broader, ongoing social concerns that might underlie those desires ("find and maintain a romantic relationship," "be powerful and respected"; see Emmons, 1989). Although humans face a very large set of specific adaptive problems (Buss, 1991), we identify the broad sets of challenges that social life poses and focus on seven overarching fundamental social motives, accessing a broader level at which social

affordances (kinship, friendship, physical harm, romantic opportunity, etc.) may be regulated by functionally distinct motivational systems.

Fundamental social motives guide cognition, attitudes, and behavior. The fundamental social motives approach has generated a number of empirical findings, most in the form of experiments demonstrating that activating these motives attunes social attention, categorization, perception, memory, and downstream social behavior in functional ways (summarized in Griskevicius & Kenrick, 2013; Neuberg & Schaller, 2014). For example, mating motivation increases perceived sexual arousal on the faces of attractive members of the opposite sex, whereas self-protection motivation increases perceived anger in the faces of outgroup men (Maner et al., 2005); self-protection motivation selectively increases agreeableness toward ingroup members, whereas disease avoidance motivation decreases self-perceptions of agreeableness toward everyone (Mortensen, Becker, Ackerman, Neuberg, & Kenrick, 2010; White et al., 2012); and mate retention motivation selectively increases attention to potential competitors for one's romantic partner (Maner, Gailliot, Rouby, & Miller, 2007). The fundamental social motives approach has been useful for understanding a number of aspects of human cognition and behavior, including stereotyping, conformity, intergroup prejudice, economic decision-making, political beliefs, self-presentation, and aggression (e.g., Griskevicius, Goldstein, Mortensen, Cialdini, & Kenrick, 2006; Li, Kenrick, Griskevicius, & Neuberg, 2012; Maner, Miller, Moss, Leo, & Plant, 2012; Sacco, Young, & Hugenberg, 2014; White, Kenrick, Neel, & Neuberg, 2013).

Prior work shows that numerous situational factors can acutely activate a particular fundamental social motive (e.g., Griskevicius et al., 2009; Schaller, Miller, Gervais, Yager, & Chen, 2010). Dark alleys, sexually attractive neighbors, or work-place competition can

temporarily activate motivations to protect oneself, to seek romance, or to achieve status. However, the situations in which people find themselves are unlikely to fully account for the rich variability in their social motives. For example, even encountering the same situations, 8-year-olds, 18-year olds, and 68-year olds are unlikely to be equally concerned with finding mates, caring for relatives, or avoiding social rejection. Because people confront somewhat different social challenges across the lifespan, the relative prominence of their social motives should shift as well (Kenrick, Griskevicius et al., 2010). As we see next, life history theory (Ellis, Figueredo, Brumbach, & Schlomer, 2009; Kaplan & Gangestad, 2004; Stearns, 1992) has much to offer for understanding the trajectories and timing of shifts in the prominence of social motives as people age, confront changing life tasks, and encounter different environments.

Life history theory. Life history theory is a biological framework that describes how organisms' resource allocation changes over the course of a lifetime. Initially, an organism focuses on building its body or acquiring resources. Later, the organism shifts to focus primarily on reproduction, and then, in species (like humans) that invest in their young, caring for kin. Life history theory suggests that some factors such as age, sex, relationship status, and parent status will calibrate the tradeoffs faced by investing effort in particular social goals. We thus anticipate that factors corresponding to life history stage and strategy such as age, sex, relationship status, parent status, and childhood environment may account for significant between-person variability in social motives. Next, we overview some of these possibilities.

Age. Age is a useful, if rough, proxy for life stage. As suggested earlier, the average 18 year-old will likely have different social concerns than the average 8 or 68 year-old. In general, we would anticipate mate-seeking motive to increase upon sexual maturity and adulthood and then decrease across the adult lifespan as fertility diminishes, as people tend to shift toward

investing in kin, and as people are more likely to have found a long-term mate. Mate retention or kin care motives might therefore increase across the adult lifespan.

It has also been suggested that affiliation may act as a "gateway" motive that facilitates the attainment of other social goals (e.g., acquiring resources, finding a mate, caring for kin; Kenrick, Griskevicius, et al., 2010). If so, this motive might decrease as people grow older and sufficiently achieve those other goals. Alternatively, affiliation-related motives might remain stable across the lifespan, given the centrality and universality of this concern (Baumeister & Leary, 1995; Buss, 1990), and the potential utility of social alliances for managing a number of other adaptive problems.

Sex. For most social motives, the recurrent adaptive problems that men and women navigate are largely the same (e.g., the needs to avoid social ostracism, avoid disease, etc.), and the developmental constraints of life history tradeoffs should lead men and women's motives to develop along the same trajectory. For both sexes, mating motive likely peaks at young adult ages, whereas kin care becomes more important later in life as people have offspring and fertility wanes; concerns about threats of disease should begin early in life and remain relatively important throughout the lifespan; and once a long-term relationship is formed, both sexes would be expected to be strongly motivated to maintain it. Thus, in many cases, women's and men's social motives are anticipated to be largely similar over the lifespan.

Yet despite broadly similar trajectories, research on male and female life histories suggests nuances in men's and women's relative emphasis on some social motives, such as mate acquisition (e.g., Daly & Wilson, 1997; Geary, 1998). In short, because women's obligate parental investment is much higher than men's, women are choosier than men about who they will mate with, leading to greater competition among men for mates, as well as for resources and

status that would make them desirable partners to women (Trivers, 1972). This perspective predicts that men will be more motivated to attain status and seek mates than are women. Indeed, men tend to exhibit greater desire for short-term mates than women do (e.g., Buss & Schmidt, 1993; Geary, 1998; Jackson & Kirkpatrick, 2007; Kenrick, Sadalla, Groth, & Trost, 1990), which suggests that they may be higher on chronic mate seeking motive. Likewise, men, and particularly single young men, may be more motivated to attain status and more willing to take risks to do so (MacDonald, 1995; Wilson & Daly, 1985; but see Cameron, Hildreth, & Howland, 2015). Men may also be less concerned than women with self-protection, given men's greater potential payoffs from physical dominance and aggression (e.g., Daly & Wilson, 1988; Wilson & Daly, 1985).

Relationship status. Several markers of life stage correspond to the attainment of particular fundamental goals. In particular, relationship status represents having achieved, at least for the time being, a mate-seeking goal. We thus would expect people in relationships to be lower on mate-seeking motive than single people (perhaps regardless of life stage), and people in relationships generally to switch their efforts away from finding new mates and toward retaining and maintaining their existing relationship (e.g., Finkel & Eastwick, 2015).

Parent status. Sexual relationships directly contribute to one's reproductive fitness to the extent that they facilitate reproduction. Having one's own offspring is, from a biological standpoint, the ultimate goal of a mate-seeking motive. Thus, once a person attains a reproductive goal (i.e., having children), we might expect that person to focus less on finding new mates, and more on maintaining a current romantic relationship to secure a mate's continued investment in offspring (Finkel & Eastwick, 2015). In addition, evidence suggests that when people become parents, they become more risk-averse and aware of dangers (Chaulk, Johnson, &

Bulcroft, 2003; Cameron, Deshazo, & Johnson, 2010; Fessler, Holbrook, Pollack, & Hahn-Holbrook, 2014), which could correspond with an increase in self-protection and/or disease avoidance motive.

Childhood environmental stability. Beyond the overall shape of an organism's life history trajectory, the speed of that trajectory can also vary: Some individuals move quickly to mate seeking, whereas others move more slowly. These "fast" versus "slow" life history trajectories are strategic responses to the particular environment in which people find themselves (Bielby et al., 2007; Ellis et al., 2009; Figueredo et al., 2005; Griskevicius et al., 2013). In a world that is uncertain—in which interpersonal harm, famine, or other unpredictable dangers can kill you—waiting to reproduce may be costly; you might die first. In a world that is relatively predictable—in which resources are sufficient and predictably available, and mortality rates from disease and interpersonal conflict are low—it is often a better bet to put off mating until one has accumulated sufficient embodied capital (physical size, relevant knowledge and skills, tangible resources) to enhance one's ability to attract a valuable mate and maximally invest in offspring.

Indeed, emerging research demonstrates that early life environments—and, in particular, the *uncertainty* of early life environments—sensitizes individuals toward these fast vs. slow life history strategies (Simpson, Griskevicius, Kuo, Sung, & Collins, 2012), which have subsequent implications for reproductive and risk-taking behavior later in life (Ellis et al., 2012; Griskevicius, Delton, Robertson, & Tybur, 2011; Griskevicius et al., 2013; Sherman, Figueredo, & Funder, 2013; White, Li, Griskevicius, Kenrick & Neuberg, 2013). That is, these early environments seem to shape how people trade off different motivations. We might thus expect adults who were raised in relatively unstable, uncertain early environments to be higher on mate-seeking motive, to be less invested in the mating relationships they have, and to be less invested

in their children. By contrast, and based on recent evidence (Belsky, Schlomer, & Ellis, 2012; Simpson et al., 2012), we would not necessarily expect environmental harshness (as indexed by scarce resources, either childhood or current) to predict these same differences in social motives (but see Ellis et al., 2009).

Fundamental Social Motives' Contribution to the Study of Individual Differences

The fundamental social motives framework (Kenrick, Griskevicius, et al., 2010; Kenrick, Neuberg, et al., 2010) offers a useful addition to the literatures on motivation and individual differences for several reasons. First, our focus on social challenges to reproductive fitness suggests motives that are generally overlooked in prominent theoretical frameworks, such as self-protection, disease avoidance, and kin care (Kenrick, Griskevicius, et al., 2010). Second, like other perspectives this focus highlights the importance of affiliation and status motives (Bakan, 1966; Hogan, 1982; McClelland, 1951; Robert & Robins, 2010), while also viewing the motives to find a mate, keep a mate, and care for kin as distinct because they correspond to distinct adaptive problems. Third, this approach allows for the prediction of individual differences in social motives based on factors that shape life history strategies (e.g., age, sex, relationship status, parental status, childhood environmental instability), thereby providing a framework for understanding changes in social motives over the lifespan. Fourth, emerging work shows the utility of the fundamental social motives framework for understanding the psychological aspects of situations (Brown, Neel, & Sherman, in press; Morse, Neel, Todd, & Funder, in press), and focusing squarely on individual differences in persons' fundamental social motives will help extend this approach to understand more fully the personality triad of situations, persons, and behaviors (Funder, 2006). The fundamental social motives framework thus moves toward

providing a unifying, theory-driven approach for examining individual differences at the level of social motives.

Existing work on individual differences in fundamental social motives. A number of measures have been used to assess variability in the fundamental social motives, yet we believe the largely piecemeal approach taken so far is necessarily incomplete. First, many of these measures are often conceptualized to tap constructs somewhat distinct from chronic motive activation. For example, the Belief in a Dangerous World scale (Altemeyer, 1988) is often used to assess individual differences in beliefs that the world is a dangerous and chaotic place (e.g., Schaller et al., 2003). Although someone who holds these beliefs likely has a chronically active self-protection motive, the belief in a dangerous world scale was not designed to directly measure a self-protection motive. Other scales likewise tap related constructs of a person's *vulnerability* to the activation of specific social goals, and the *strategies* they might use to manage social goals (Buss & Cantor, 1989). The Perceived Vulnerability to Disease scale (Duncan, Schaller, & Park, 2009) was designed to measure the extent to which a person chronically feels vulnerable to contagious illnesses. Although the measure likely taps chronic disease avoidance motive to some extent, the constructs are not synonymous: Measuring perceived vulnerability might tell us *who* would be motivated to avoid disease in disease-relevant situations or life circumstances, but not the precise *extent* to which this motive is chronically active (i.e., I may believe I would be likely to catch an illness that is going around but not be particularly concerned about it). Likewise, the Dominance-Prestige scales (Cheng, Tracy, & Henrich, 2010) assess whether people tend to use dominance- or prestige-based strategies for attaining status. Prestige and dominance are distinct, yet effective, routes to attaining status (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2012; Henrich & Gil-White, 2001) – and thus

these constructs reflect strategies people might use *to achieve the general goal of status attainment*, rather than a direct measure of status motive, per se.

To aid our exploration of individual differences in fundamental social motives, we developed a single inventory explicitly designed to measure the extent to which each of these motives is chronically active. This allowed us to assess the different fundamental social motives at once, and in doing so, placed each of these scales on the same "grain size" of measuring a person's general motive to manage those threats and opportunities. This also allowed us to test the underlying structure of the fundamental social motives and their relationships to each other. We are thus able to test the alternative that motives we conceptualize as distinct may be better characterized as a single motive; for example, perhaps the self-protection and disease-avoidance motives may constitute a single "physical safety" motive. Our approach also allows us to test whether fundamental social motives may be better characterized as consisting of multiple sub-motives; for example, perhaps the motive to affiliate consists of distinct sub-components.

Preliminary Study: Development of the *Fundamental Social Motives Inventory*

Given our overarching goal to assess and predict individual differences in chronic activation of the fundamental social motives, we needed first to create a relatively concise measure of the extent to which each motive is chronically active.

Method

Item generation and selection. A group of researchers familiar with the fundamental social motives framework generated a set of candidate items to measure each of the fundamental social motives: self-protection, disease avoidance, affiliation, status, mate seeking, mate retention, and kin care.[2] Because caring for family members and caring for children are somewhat distinct, though related, sets of adaptive problems, we created separate items to

address kin care motive in reference to one's children, and kin care motive in reference to one's family more broadly. We then combined similar items, excluded or modified items to maximize clarity and face validity, and produced additional items to reflect the full reach of each motive. This process created a total initial item pool of 108 items.

Exploratory factor analyses. We conducted three exploratory factor analyses on three separate samples, winnowing down items from each sample until we reached a final set of 66 items. The three samples were, first, undergraduates (108 items presented in one of two randomized orders, $n = 224$), second, a larger sample of participants from Amazon's Mturk (81 items presented in a unique random order for each participant, $n = 468$), and third, another Mturk sample (73 items presented in a unique random order for each participant, $n = 488$). In all samples, only those participants who had children or romantic partners, respectively, responded to the items referring to one's children (for *kin care [child]* items) or to one's mate (for *mate retention* items). To analyze each data set, we used Exploratory Factor Analysis (EFA; maximum likelihood with promax rotation, which allows for correlated factors) to identify factors that emerged from the item pool, and to retain those items that best reflected factors corresponding to fundamental social motives (i.e., items that reflected a conceptually important aspect of the motive, and/or that loaded sufficiently on the factors, with a target loading of at least .4 for each item). The analyses also revealed multiple factors for the mate retention (2 factors) and affiliation (3 factors) motives. The two-part structure of mate retention motive corresponded roughly to investment in and attachment to one's relationship (mate retention [general]), and concern about the relationship's possible dissolution (mate retention [breakup concern]). The three-part structure of affiliation motive was unexpected: Although we had

anticipated a possible group-specific affiliation motive (and this factor did indeed emerge), separate factors for exclusion concern and desire for independence emerged as well.

As a result of these analyses, we were left with 66 items, with 6 representing each of the following Fundamental Social Motive Inventory scales: self-protection, disease avoidance, affiliation (group), affiliation (exclusion concern), affiliation (independence), status, mate seeking, mate retention (general), mate retention (breakup concern), kin care (family), and kin care (child).

Confirmatory factor analyses. We also conducted confirmatory factor analyses to test this factor structure (one factor for self-protection, disease avoidance, status, and mate seeking motives; multiple factors for mate retention, affiliation, and kin care motives). We collected an additional sample of 715 adult participants from Mturk and conducted Maximum Likelihood confirmatory factor analyses using MPlus. We conducted separate CFAs for related sets of motives, resulting in separate sets of analyses for the following sets of items: (a) self-protection and disease avoidance, (b) affiliation (group), affiliation (exclusion concern), affiliation (independence), (c) status, (d) mate acquisition, (e) mate retention (general), mate retention (breakup concern), (f) kin care (family) only, and (g) among people with children, kin care (family) and kin care (child). For analysis sets that included more than one scale (a, b, e, and g), we tested a model for a single factor in addition to a model for separate, correlated factors, and compared the relative fit for these two models. For each analysis, we produced fit indexes and evaluated them according to the following benchmarks: root mean square error of approximation (RMSEA) < .06 indicates good fit, < .10 indicates acceptable fit; non-normed fit index (NNFI) > .95; confirmatory fit index (CFI) > .95; standardized root-mean-residual (SRMR) < .08. When comparing the fit of two models, we computed the Akaike Information Criterion (AIC) for each

model; the one with the lower AIC is considered to have better fit. We also computed the χ^2 for the two models to examine changes in χ^2. Single-factor models for analyses covering multiple motive scales (i.e., analyses a, b, e, and g) all exhibited poor fit; separate, correlated factors produced improved (and acceptable or good) fit in all cases (see Table S1 in Supplemental Materials). Although we did not test a confirmatory model that would include a single affiliation motive across affiliation, mating, and kin care motives, the single-factor analysis of the three affiliation subscales alone produced poor fit, and many of these motive scales correlate at levels close to or at zero (Table 1).

Overall, the proposed structure of each fundamental social motive scale was supported, with separate sub-factors within affiliation, mate retention, and kin care; distinct self-protection and disease-avoidance factors (instead of one overarching protection motive); and unitary status and mate-seeking motives. See Appendix for all items, Table S1 [Supplemental materials] for results of the Confirmatory Factor Analysis, and Table 1 for descriptive statistics and correlations among the motives.

Discussion

To create the Fundamental Social Motives Inventory we built a set of scales guided by a theoretical conceptualization of the seven fundamental social motives. These scales exhibit good internal consistency (αs in the largest sample range from .77-.94; see Table 2). Subsequent analyses, detailed below, provide evidence for convergent and discriminant validity of the Inventory.

Focal Study: Individual Differences in Fundamental Social Motives

With the current research, we sought to develop a rich understanding of individual differences in fundamental social motives by examining a number of correlates in a large (more

than 1500) combined sample of adults from the United States. Specifically, in a first set of analyses we examined each motive's relation (a) to other individual difference constructs, including related constructs such as vulnerability to motive-related threats or the adoption of motive-relevant strategies, as well as personality traits (i.e., the Big Five), and (b) to actual events and behaviors in people's lives. Because of the large number of possible relationships among these variables, in the text below we selectively highlight findings with the aim to create a rich, descriptive portrait of individual differences in the fundamental social motives. These relationships also provide evidence of convergent and discriminant validity of the scales. In a second set of analyses, we examined the ways in which the fundamental social motives are predicted by life history variables such as age, sex, relationship status, parent status, and childhood stability.

Method

Participants. We drew participants from three separate samples: Sample A consisted of the third sample recruited for scale development reported above, via MTurk (n = 488, 56.6% female, 35.9% Male, 7.6% did not respond; 72.5% White, 8.2% Asian or Asian American, 8.0% Black or African American, 5.3% Hispanic or Latino, 2.0% American Indian or Alaska Native, 0.6% Native Hawaiian or other Pacific Islander, 1.0% other, 0.4% decline to respond; mean age = 32.7, *SD* age = 12.0, age range = 18-82; 68.2% in a relationship, 29.9% single, 1.8% other; 40.8% parents).

Sample B consisted of the fourth sample recruited for scale development reported above, via MTurk (n = 714, 62.0% female, 37.6% Male, 1.0% did not respond; 75.9% White, 7.0% Asian or Asian American, 11.3% Black or African American, 5.7% Hispanic or Latino, 1.4% American Indian or Alaska Native, 0.8% Native Hawaiian or other Pacific Islander, 0.7% other,

0.7% decline to respond; mean age = 35.0, *SD* age = 13.1, age range = 18-76; 61.9% in a relationship, 35.2% single, 2.9% other; 43.6% parents).

Sample C was a separate sample consisting of participants from Mturk (n = 358, 45.0% female, 54.7% male, 0.3% did not respond; 79.3% White, 7.0% Asian or Asian American, 8.9% Black or African American, 6.1% Hispanic or Latino, 1.4% American Indian or Alaska Native, 0.6% Native Hawaiian or other Pacific Islander, 0.8% other, 0.6% decline to respond; mean age = 34.8, *SD* age = 12.1, age range = 18-74; 62.9% in a relationship, 33.8% single, 3.4% other; 43.3% parents).

In each sample, some participants did not respond to all items so sample sizes vary across analyses.

Procedure. For all samples, participants first responded to items assessing their relationship status and parent status, so that the mate retention and kin care child scales could be presented only to people in relationships and people with children, respectively.

Sample A. Participants completed the Fundamental Social Motives Inventory (73 item version; data from only the final 66-item set were retained for analyses reported below), the Big Five Inventory (John & Srivastava, 1999), and questions about their life experiences (see below). By random assignment, participants then completed one of two possible sets of measures of individual differences in constructs often used to measure fundamental social motives or motive-relevant vulnerabilities and strategies: One set consisted of the Sociosexual Orientation Inventory (Jackson & Kirkpatrick, 2007), Perceived Vulnerability to Disease scale (Duncan et al., 2009), and the Dominance and Prestige scales (Cheng et al., 2010); the other set consisted of the Belief in a Dangerous World scale (Altemeyer, 1988), the Need to Belong scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013), and the Experiences in Close Relationships-Revised

scale (Fraley, Waller, & Brennan, 2000). All participants then provided information on a number of life history variables, including their childhood environmental stability, childhood resources, current resources, and demographic information, including sex, age, and race.

Sample B. Participants completed the Fundamental Social Motives Inventory (66 item version), the Big Five Inventory (John & Srivastava, 1999), a set of items assessing occupation for a separate study and thus not reported here, and information on life history variables including participants' childhood environmental stability, childhood resources, current resources, and demographic information, including sex, age, race. Finally, to sample participants' own daily experiences, participants reported where they were and what they were doing the prior evening at 7:00 PM, a method that has been used to assess everyday situations and behaviors (see Brown et al., in press; Morse et al., in press; Sherman, Nave, & Funder, 2010).

Sample C. The purpose of Sample C was to examine the relationships between the Fundamental Social Motives and the 30 facets of the Big Five identified by Costa and McCrae (1992). Participants completed the Fundamental Social Motives Inventory (66 item version), an International Personality Item Pool measure of the 30 facets of the Big Five (Maples, Guan, Carter, & Miller, 2014), and life history and demographic variables including their childhood environmental stability, childhood resources, current resources, sex, age, and race.

Materials

Related individual difference measures. See Table 2 for sample sizes and reliabilities for the Fundamental Social Motives Inventory, Big Five Inventory, Sociosexual Orientation Inventory, Perceived Vulnerability to Disease, Dominance and Prestige, Belief in a Dangerous World, Need to Belong, and Experiences in Close Relationships – Revised scales.

Behaviors.

Life data. Sample A completed these measures. Because we were interested in examining the extent to which the fundamental social motives would account for or relate to important, meaningful, or vivid recent life experiences, we generated items that might be predicted by motives and would be easily self-reported from the last year, for a total of 46 items across the fundamental social motives. Some items reflected behaviors or experiences that would be expected to have increased one's motivation (e.g., experiencing a breakup should positively relate to mate-seeking motive), whereas some items reflected behaviors or experiences that could indicate the ongoing satisfaction of a particular motive (e.g., volunteering should positively relate to affiliation motive).

For exploratory purposes, we generated an additional 30 items that did not have clear predictable relationships to particular motives, but that might reflect major events in a person's life, have implications for health, or were otherwise potentially interesting (e.g., been in a car accident, moved to a different city, smoked cigarettes).

For all items, we first asked participants whether they had ever in their life had that experience. Then, we followed up with those people who had had the experience to see whether or how often they had had the experience *in the past year.* The response options depended on what made the most sense for the item (e.g., how many times have you gone to the emergency room vs. how often have you used social media); the response options for each item were either (a) in the past year, how many times have you... (1 = *never in the last year* to 12 = *11 or more times*), (b) in the past year, on average how often have you… (1 = *never,* 2 = *less than once a month*, 3 = *once a month*, 4 = *2-3 times a month*, 5 = *once a week*, 6 = *2-3 times a week*, 7 = *once a day*, 8 = *several times a day*), or (c) have you at some point (*yes* or *no*). To simplify analyses of these items, and because distributions on continuous items were generally highly skewed,

responses to life data items were recoded into a binary variable indicating whether or not the participant had had the experience in the past year. However, we also conducted follow-up analyses on continuous responses among those who had had the experience (see Table S3 for full regression results).

People mentioned from the night before the study. Sample B completed these measures. Modeled on work using the Riverside Situational Q-Sort (Sherman et al., 2010), participants were asked to respond in separate text boxes to two questions: "Where were you at 7 pm yesterday? Please describe in a few sentences where you were," and "What were you doing at 7 pm yesterday? Please describe in a few sentences what you were doing (if you were sleeping, please write what you did just before or afterward)." Participants' responses to the prompts ranged in total length from 2 words (e.g., "home," "eating") to 143 words, $M = 31.6$, $SD = 19.7$. For each participant response, one coder rated whether or not certain categories of people were mentioned in the response (example statements that follow are not quotes of participant statements but rather reflect coding guidelines): one's own children or grandchildren (e.g., "my daughter"), someone else's children or grandchildren (e.g., "I was babysitting a child"), one's own parents (e.g., "I was eating dinner with my parents"), one's own siblings (e.g., "I was spending time with my sister"), other/generic family members (e.g., "I was with my family"), a romantic/sexual partner (e.g., "I was on a walk with my fiancé"), a friend or friends (e.g., "I went to dinner with some friends"), a roommate or roommates (e.g., "I was cleaning the apartment with my roommates"), coworkers or boss (e.g., "I was talking on the phone with my colleague"), pets/animals (e.g., "My girlfriend and I took her dog for a walk"), neighbors (e.g., "I went to a neighborhood meeting"), and others/not specified (e.g., "my girlfriend's family," "I dropped someone off at the airport"). A second coder rated a subset of the sample's responses (n = 175,

24%) and showed a high degree of consistency with the first coder (98%), so the first coder rated all responses and these were used for analysis. The base rates for some categories were quite low (others' children/grandchildren: 1.1%; roommates: 0.6%; co-workers or boss: 0.4%; neighbors: 1.7%), so the only categories retained for analysis were one's own children/grandchildren, other family members, romantic/sexual partner, and friends. The "pets/animals" and "other" categories were also retained but produced no significant or notable results and so are not reported further. Participants' text was also coded for additional variables including the location mentioned, the activity mentioned, and fundamental social motive mentioned, but none of these codings produced notable results and so are not discussed further (the fundamental social motives, in particular, were difficult to assess precisely from participants' limited responses, and the coding criteria for several motives overlapped substantially with the coding criteria for the "people mentioned" coding). Fourteen participants did not respond to the prompts and so were not coded or included in analyses on these data.

Life history measures. Participants indicated their sex and age, as well as the following:

Relationship status. Participants used the following response options to indicate their relationship status: married, in a committed relationship, dating one person, dating several people, single, and other. Only those who indicated they were either married, in a committed relationship, or dating one person were considered "in a relationship," and only those who responded "single" were considered single. Because the relationship status of those responding "dating several people" and "other" was unclear, these participants are not included in analyses using relationship status.

Parent status. Participants indicated whether they had children with a "yes" or "no" response.

Childhood stability. (3 items, "compared to the average person, how [stable, predictable, hard] was your home life when you were growing up?" 1 = *very [stable/predictable/easy],* 7 = *very [unstable/unpredictable/hard]*, reverse-coded so that higher scores reflect greater stability (Sample A [N = 447] α = .86; Sample B [N = 693] α = .86, Sample C [N = 353] α = .86).

Childhood resources. (4 items, e.g., "My family usually had enough money for things when I was growing up", 1 = *strongly disagree,* 7 = *strongly agree*, Sample A: [N = 444] α = .86, Sample B [N = 703] α = .87, Sample C [N = 357] α = .82). Although people may not have veridical memories of childhood experiences (e.g., Conway & Pleydell-Pearce, 2000), and thus their self-reported memories of childhood likely contain some error, we drew these items from past research that has successfully used these items to assess the influence of childhood environments on life history strategies (e.g., Griskevicius et al., 2011).

Current resources. (2 items, e.g., "I don't currently need to worry too much about paying bills", 1 = *strongly disagree,* 7 = *strongly agree*, Sample A [N = 448] α = .85, Sample B [N = 706] α = .82, Sample C [N = 356] α = .86).

Results

See Tables 3, 4 and S3 for full results.

Analytical strategy

Related individual differences. Scores for each fundamental social motive scale are averages of responses to scale items. Correlation coefficients were computed between the individual difference scales and the fundamental social motives. For the Big Five, two correlations are reported: One with the short version of the Big Five, and one with the IPIP 30-facet measure of the Big Five. Effects reported below are significant unless otherwise noted. See Table 3.

Behaviors.

Life data. We first analyzed all items as binary outcomes representing whether the participant had had the experience/done the behavior in the past year (0 = no, 1 = yes). The items ranged widely in what percentage of the sample had had the experience in the past year, with the least common being having served in the military (1.8% of the sample) and skydiving (2.9%) and the most common being having cooked a meal at home (89.7% of the sample) and having used social networking websites (83.0%), with a mean percentage across items of 30% having had the experience in the past year. In the text below, we report the odds ratio for each logistic regression analysis predicting each outcome. For those items that were responded to on a continuous scale, we also analyzed the data within the subsample of people who had engaged in the behavior in the past year, to examine the *extent* to which they engaged in that behavior. In general, analyses on the continuous measures within the group who had engaged in the behavior in the last year produced few significant results, though we note some exceptions below.

People mentioned from the night before the study. Participants were coded as either mentioning (1) or not mentioning (0) the category of person in their description of the night before. As with the life data analyses, we report an odds ratio.

For both life data and people mentioned from the night before the study, we also conducted logistic regressions that controlled simultaneously for the other fundamental social motives, the Big Five, and all life history variables. On the whole, the patterns, magnitude, and significance of the results tended to remain even when controlling for these factors (see Table S3).

Life history variables. To examine the extent to which life history variables predicted each fundamental social motive, we conducted regression analyses. For each motive, we

simultaneously entered age, sex (men = -1, women = 1), relationship status (single = -1, in relationship = 1), parent status (nonparent = -1, parent = 1), childhood stability, childhood resources, and current resources as predictors. Results are highlighted below, with full results reported in Table 4.

Relationship of motives to individual differences and behaviors

Self-protection

*Individual difference constructs***.** Greater self-protection motive corresponds with greater belief in a dangerous world (r = .38), perceived vulnerability to disease (r = .46), and neuroticism (r = .17/.14). Given that self-protection motive should produce vigilance to threats, it is no surprise that it correlates with neuroticism. Yet the relatively small correlation between the two suggests that self-protection motive is not merely a proxy for neuroticism. Likewise, it is unsurprising that belief in a dangerous world correlates with self-protection motive, especially as this measure is sometimes used as a proxy for chronically-active self-protection motive (e.g., Schaller et al., 2003). Yet still, this correlation was not large, suggesting that belief in a dangerous world may capture only a part of the broader self-protection motive construct, or indeed may measure something different than (but related to) self-protection motive. Unexpectedly, self-protection motive correlated more strongly with perceived vulnerability to disease than with belief in a dangerous world, although both correlations are modest (and note that belief in a dangerous world correlates more strongly with self-protection than with disease avoidance, whereas perceived vulnerability to disease correlates more strongly with disease avoidance than with self-protection). Belief in a dangerous world may indeed not be a pure reflection of the motive to protect oneself from dangerous people, but a somewhat different set of beliefs and attitudes.

Behaviors. People with greater self-protection motive were more likely to have taken a self-defense class in the past year (odds ratio = 1.59) and to have a home security system (odds ratio = 1.29). People higher on self-protection motive were also more likely to have carried mace or pepper spray in the past year (odds ratio = 1.35), and among those who had done so, self-protection motive positively predicted the frequency with which they did so (β = .44). Although not related to whether or not a person carried a weapon in public in the past year, higher self-protection motive did predict greater frequency of carrying a weapon in public (β = .44). In contrast, self-protection motive did not predict whether participants had purchased a gun, or kept a gun at home, likely because people purchase and keep guns for a broader array of purposes than simply self-protection (e.g., hunting, target shooting, etc.).

We also examined whether self-protection motive might predict experiencing or perpetrating physical aggression. People with greater self-protection motive were more likely to report having screamed at someone (odds ratio = 1.30) and reported greater frequency of having punched or forcefully shoved someone (β = .35), but were no more likely to have been in a physical fight.

In sum, those with greater self-protection motive are more likely to have engaged in a variety of behaviors related to protecting themselves from dangerous others. Note that the majority of these statistical relationships held even when controlling for all other motives, including disease avoidance motive (see Table S3), and that disease avoidance motive uniquely predicted none of these outcomes, providing further evidence for the utility of a distinction between self-protection and disease avoidance motives.

Disease avoidance

Individual difference constructs. Disease avoidance motive correlates positively with perceived vulnerability to disease (r = .64), belief in a dangerous world (r = .29), and to a small extent with neuroticism (r = .10/.11) and conscientiousness (r = .10/.06). Consistent with prior findings that under acute disease threat, people chronically vulnerable to disease tend to be less agreeable, extraverted, and open to experience (Mortensen et al., 2010), chronic disease avoidance motive correlated negatively to a small extent with agreeableness (r = -.10/-.09), extraversion (r = -.07/-.12), and openness on one of the two Big Five measures (r = -.03/-.15)

Behaviors. We examined several potential disease-avoidant behaviors. People with greater disease avoidance motive were more likely to have reported avoided shaking hands with someone who seemed sick (odds ratio = 1.67), even among only those who reported having done so in the past year (β = .19). Greater disease avoidance also predicted a lower likelihood of having smoked (odds ratio = .84). Perhaps surprisingly, people higher on disease avoidance motive were no more likely to report a number of other health-related behaviors, such as going to the gym, getting a flu shot, or visiting someone in the hospital. In retrospect, it is possible that these items either reflect health promotion rather than disease avoidance (e.g., going to the gym) or are influenced by a number of other more powerful factors than disease avoidance motive (e.g., visiting someone in the hospital).

Affiliation (group)

Individual difference constructs. Affiliation (group) motive correlates most strongly with extraversion (r = .41/.45), agreeableness (r = .45/.38), and need to belong (r = .37), suggesting that affiliation (group) motive is a valid measure of the desire to be a part of groups, and yet is not synonymous with these other constructs. Affiliation (group) motive also correlates positively with prestige (r = .26), conscientiousness (r = .21), openness (r = .14/-.08), long-term mating

orientation (r = .14) and negatively with avoidant relationship attachment (r = -.39), neuroticism (r = -.22/-.32), and anxious relationship attachment (r = -.14). Those highly motivated to be a part of groups are thus more likely to be extraverted, agreeable, secure in their relationship attachment, and emotionally stable.

Behaviors. People higher on affiliation (group) motive reported engaging in a number of activities that were group-based or that could indicate investment in a particular group, including playing a team sport (odds ratio = 1.60), attending religious services (odds ratio = 1.31), and volunteering (odds ratio = 1.53; see also Winter et al., 1998). In addition, an unexpected effect emerged whereby greater affiliation (group) motive predicts a greater likelihood of having smoked in the past year (odds ratio = 1.23), suggesting that people with higher motive to be a part of groups may be more likely to engage in smoking as a strategy to achieve this goal (e.g., Conrad, Flay, & Hill, 1992). Finally, people higher on affiliation (group) motive were more likely to report being with friends the previous evening (odds ratio = 1.50).

Affiliation (Exclusion Concern)

Individual difference constructs. Affiliation (exclusion concern) correlates strongly with need to belong (r = .75). It also correlates positively with neuroticism (r = .43/.56) and anxious relationship attachment (r = .45), and more modestly with dominance (r = .24). Affiliation (exclusion concern) correlates negatively with conscientiousness (r = -.25/-.29), agreeableness (r = -.14/-.06), prestige (r = -.17), and extraversion (r = -.14/-.20). Thus, people highly motivated to avoid exclusion are high in need to belong, tend to exhibit anxious relationship attachment, and are lower on emotional stability, conscientiousness and affiliative tendencies.

Behaviors. Consistent with some research showing that people high in rejection sensitivity are more likely to use Facebook (e.g., Farahani, Aghamohamadi, Kazemi,

Bakhtiarvand, & Ansari, 2011), affiliation (exclusion concern) motive positively predicted using social networking websites like Facebook (odds ratio = 1.26) or twitter (odds ratio = 1.24) in the past year, and among those who did use social networking websites like Facebook, affiliation (exclusion concern) motive predicted the extent to which they did so (β = .24).

Affiliation (Independence)

Individual difference constructs. People higher on affiliation (independence) motive were lower on several indicators of general sociability: need to belong (r = -.46), extraversion (r = -.36/-.27), agreeableness (r = -.22/ but not in the IPIP version: .01), and prestige (r = -.15); and more avoidantly attached (r = .24). Notably, the negative correlation with extraversion was modest, suggesting that affiliation (independence) is not synonymous with introversion.

Behaviors. People higher on affiliation (independence) motive were less likely to report being with friends the prior evening (odds ratio = .72).

Status

Individual difference constructs. People more motivated to attain status also reported being higher on two strategies for attaining status: dominance (r = .52) and prestige (r = .33). The positive relation to both strategies (which are themselves uncorrelated; Cheng et al., 2010) supports the idea that a general status motive may lead people to engage in either dominance or prestige routes to status. Status motive also correlated with need to belong (r = .47) and extraversion (r = .26/.30), suggesting that those motivated to attain status may also seek to be with others.

Behaviors. We examined several behaviors potentially related to a status motive, including those that might reflect ambition and/or displays of competence or resources. People higher on status motive were more likely to have had a job where others work for them (odds

ratio = 1.49) and to have received a promotion in the last year (odds ratio = 1.34). People higher on status motive were also more likely to have played music, sang, or performed for others (odds ratio = 1.65). Interestingly, status motive did not predict having simply made a piece of art (odds ratio = 1.08), suggesting that people motivated to attain status may particularly seek out public, performance-based art forms—forms that may better afford opportunities to express or gain status.

Mate seeking

Individual difference constructs. Mate-seeking motive correlates positively with several measures of mating orientations and strategies, including short-term mating orientation (r = .44), anxious relationship attachment (r = .41), and avoidant relationship attachment (r = .31). In contrast, mate seeking *negatively* correlated with long-term mating orientation (r = -.25). This correlation may vary with relationship status, however, as mate-seeking motive may negatively predict long-term mating orientation for people in a relationship (as people highly motivated to have a long-term relationship who already have one would be *less* likely to seek a new partner), but positively predict mate seeking motive for single people (as they do not yet have a long-term mate). Indeed, greater long-term mating orientation correlated with lower mate seeking motive for people in a relationship (r = -.57), but higher mate seeking motive for single people (r = .43). In contrast, a short-term mating orientation positively correlated with mate-seeking motive across relationship status (in a relationship: r = .47, single: r = .44).

Behaviors. People higher on mate-seeking motive were more likely to report a number of behaviors indicative of mating effort or the recent dissolution of a relationship. People higher on mate-seeking motive were more likely to have, in the past year, chosen to end a relationship (odds ratio = 1.60), been broken up with (odds ratio = 1.54), asked someone out on a date (odds

ratio = 1.59), or been asked out on date (odds ratio = 1.59). People higher on mate-seeking motive were also more likely to have been in social situations that could facilitate mate seeking, including going out dancing (odds ratio = 1.35), frequency of going out dancing among those who do so (β = .28), and frequency of going out to music concerts among those who do so (β = .19). Finally, mate seeking motive predicted reported sexual behavior, as people higher on mate seeking motive were more likely to have had sex with a condom in the past year (odds ratio = 1.25).[3]

Interestingly, mate-seeking motive predicted a number of other life experiences as well. People higher on mate-seeking motive were more likely to report a number of the status-related behaviors and experiences, such as having gotten a promotion (odds ratio = 1.25) and having started a new job (odds ratio = 1.15), even when controlling for life history variables, other motives, and the Big Five personality traits. In addition, greater mate-seeking motive predicted having had a falling out with a friend (odds ratio = 1.32) and having moved within a city (odds ratio = 1.23; note that although both of these behaviors might be more common for people at younger ages, the relationships held when controlling for participant age; see Table S3). Higher mate-seeking motive also predicted a greater frequency of going a day without eating among those who had done so (β = .20). For those in relationships, higher desire to find another mate may be manifested, literally, in lesser investment in one's partner, as greater mate-seeking motive predicted being less likely to have bought one's partner a non-holiday gift (odds ratio = .67). Higher mate-seeking motive also predicted two behaviors that may indicate greater willingness to take risks with one's physical health: smoking cigarettes (odds ratio = 1.18) and having broken a bone (odds ratio = 1.43). Finally, higher mate-seeking motive predicted lesser

likelihood of having mentioned one's child or grandchild in the prior evening, whether in the full sample of participants (odds ratio = .55) or within parents only (odds ratio = .68).

This array of results suggests that mate-seeking motive may play a role in a number of consequential health, job, and other life domains.

Mate retention (general)

Individual difference constructs. Consistent with the idea that mate retention (general) motive indexes investment in and attachment to one's current relationships, people higher on mate retention (general) were less likely to report a short-term mating orientation (r = -.30) and avoidant relationship attachment (r = -.45), and positively with long-term mating orientation (r = .60). Mate retention (general) motive also correlated positively with a number of other positive indexes of sociality, such as agreeableness (r = .29/.48), prestige (r = .28), conscientiousness (r = .29/.49), and correlated negatively with dominance (r = -.26).

Behaviors. People higher on mate retention (general) motive were more likely both to have bought their partner a holiday or birthday gift (odds ratio = 2.04) and to have bought their partner a non-holiday gift (odds ratio = 1.71). In addition, mate retention (general) motive predicted a lower likelihood of having been unfaithful to a romantic or sexual partner in the past year (odds ratio = .30), and a higher likelihood of mentioning one's romantic partner in the prior evening but only at the zero-order level (odds ratio = 1.59).

Mate retention (breakup concern)

Individual difference constructs. Mate retention (breakup concern) correlates strongly with anxious relationship attachment (r = .84), suggesting that an anxious attachment style heavily colors and accounts for this form of mate retention motive. Mate retention (breakup concern) also correlates positively with neuroticism (r = .37/.55), dominance (r = .33), short-

term mating orientation (*r* = .27), avoidant relationship attachment (*r* = .30), and the need to belong (*r* = .27). Mate retention (breakup concern) negatively correlated with agreeableness (*r* = -.25/-.31), prestige (*r* = -.31), long-term mating orientation (*r* = -.29) and conscientiousness (*r* = -.31/-.45). Someone high in mate retention (breakup concern) is thus likely to be anxiously attached in his or her relationships, more likely to seek short-term sexual relationships, and less agreeable and sociable.

Behaviors. People higher on mate retention (breakup concern) motive were more likely to have been to a relationship counselor in the past year (odds ratio = 1.46) and to have been unfaithful to a romantic or sexual partner in the past year (odds ratio = 1.77). Greater mate retention (breakup concern) also predicts being less likely to have mentioned a romantic partner in describing the prior evening (odds ratio = .82).

Kin care (family)

Individual difference constructs. Kin care (family) motive is positively related to agreeableness (*r* = .42/.45), conscientiousness (*r* = .29/.46), prestige (*r* = .24), long-term mating orientation (*r* = .26), need to belong (*r* = .21), and extraversion (*r* = .21/.25), and negatively related to dominance (*r* = -.25), short-term mating orientation (*r* = -.21), avoidant relationship attachment (*r* = -.28), and anxious relationship attachment (*r* = -.18). People who are highly invested in caring for their family thus tend to be more agreeable and sociable.

Behaviors. People higher on kin care (family) motive were more likely to have cared for a younger relative in the past year (odds ratio = 1.37). They were not, however, more likely to report other experiences that we had thought might relate to kin care (family), such as having had a family member have a child in the past year or having had a family member die.

Kin care (family) motive also predicted a number of unexpected variables that suggest possible far-reaching effects of strong concerns for family. People higher on kin care (family) motive may take fewer risks, as people higher on kin care (family) motive were *less* likely to have gone skydiving (odds ratio = .60) or to have been arrested (odds ratio = .58). Those high on kin care (family) motive may also be less likely to create physical distance from relatives, as it predicted a *lower* likelihood of having moved, whether within the same city (odds ratio = .82), to a different town/city (odds ratio = .83), or to a different country (odds ratio = .63). Consistent with a protective component of kin care (family) motive, people higher on kin care (family) motive were more likely to have kept a gun in their homes (odds ratio = 1.37). People higher in kin care (family) motive were also more likely to have cooked a meal at home (odds ratio = 1.69), and *less* likely to have asked someone out on a date (odds ratio = .75) or to have ended a relationship (odds ratio = .71). Finally, kin care (family) motive predicts having mentioned other family members in describing the prior evening, whether children (all participants: odds ratio = 1.67; parents only: odds ratio = 1.32) or other family members (odds ratio = 1.28).

Kin care (child)

Individual difference constructs. As with kin care (family) motive, kin care (child) motive was related to greater long-term mating orientation (r = .39), agreeableness (r = .23/.40), prestige (r = .24), and conscientiousness (r = .19/.41), and negatively correlated with dominance (r = -.28), short-term mating orientation (r = -.22), and avoidant relationship attachment (r = -.24). Unlike kin care (family) motive, significant relationships did not emerge for need to belong, extraversion, or anxious relationship attachment.

Behaviors. People higher in kin care child motive were more likely to have mentioned specifically children/grandchildren in description of prior evening (odds ratio = 2.24), but not having mentioned other relatives (odds ratio = 1.05).

Life history predictors

Age. Several social motives declined with participant age. The effect whereby affiliation (exclusion concern) decreases with older age (β = -.27) is notable, as it suggests that social exclusion may become a less potent concern as people grow older. Alternatively, it may be that people's social relationships become more stable and long-lasting as they grow older, with social exclusion less likely and, thus, a less salient social concern. Finally, it is worth noting that our sample of older participants may represent a more able and socially connected sample than is typical, given that these are older people who are completing studies via a relatively new, computer-mediated platform.

Younger parents (β = -.18) were higher in kin care (child) motive than were older parents, quite possibly because younger parents' children are on average younger and thus more dependent on intensive parental care. On the other hand, kin care (family) motive increased very slightly with age (β = .06). Older participants also reported lesser motive for self-protection (β = -.12) and status (β = -.21). Effects for mating-related motives suggests that as people age, they are less likely to seek new relationships and their existing relationships are more stable, as both mate acquisition (β = -.15) and mate retention breakup concern (β = -.26) declined with age, whereas mate retention (general) motive increased (β = .11).

Sex. Men's and women's fundamental social motives, although broadly similar, did exhibit some differences and in ways consistent with existing literature. In particular, several differences emerged for mating and kin care motives, as women were lower on mate-seeking

motive than were men (β = -.18), slightly lower on mate retention (breakup concern) (β = -.07), and higher on mate retention (general) (β = .18). These findings are broadly consistent with sexual strategies and differential parental investment theories (Buss & Schmidt, 1993; Geary, 1998; Kenrick et al., 1990; Kenrick, Groth, Trost, & Sadalla, 1993), which anticipate that men are more concerned with seeking short-term mates than are women. Consistent with recent work showing that women tend to report greater levels of parental feelings (Buckels et al., 2015), women were also higher on both kin care (family) (β = .18), and kin care (child) (β = .13) motives).

Women had higher average self-protection motive than did men (β = .16). Indeed, men are more likely to perpetrate aggression than women, and on average men are more physically formidable than women and thus also better able to defend themselves from attack (Daly & Wilson, 1988). Women's greater self-protection motive may thus reflect calibration to err on the side of caution in protecting themselves from potential dangers. We also found a small effect whereby women are more motivated to avoid disease than are men (β = .08), consistent with findings that women are more disgusted by pathogens than are men (Tybur, Lieberman, & Griskevicius, 2009). Women are thus somewhat more concerned than are men about protecting themselves from several of the dangers (physical danger, disease) others may pose.

No sex differences appeared for affiliation (group) and affiliation (independence) motives, and women were only slightly higher on affiliation (exclusion concern) (β = .07). In addition, we observed no difference between women's and men's status motive, a finding that held across the lifespan (see also Winter, 1988; Cameron et al., 2015). Although women may not typically compete for status in the overt, aggressive ways more typical of men (e.g., Archer,

2004; Card, Stucky, Sawalani, & Little, 2008; Griskevicius et al., 2009), they may be equally motivated to achieve status given the potential social rewards of status for both men and women.

Relationship status. Relationship status exerted few effects on social motives, save the substantial, if unsurprising, effect whereby single people are more motivated to seek mates than are people in relationships (β = -.50). People in relationships are also slightly higher on kin care (family) motive (β = .10) and affiliation (group) motive (β = .06), and lower on affiliation (independence) motive (β = -.11).

Parental status. Parental status likewise exerted few substantial effects on social motives. Parents are higher on kin care (family) motive (β = .16) than are nonparents. Interestingly, parents were also higher than non-parents on self-protection motive (β = .15). It may be that it serves parents well to be more cautious about their own safety than nonparents are, because injury to themselves may compromise their ability to care for their child. In addition, parents may be more vigilant for possible physical dangers in the environment to better avoid or manage potential dangers to their children. Finally, parents are also slightly higher than nonparents on affiliation (group) motive (β = .09).

Childhood stability. Consistent with recent work suggesting that the unpredictability of one's early childhood environment predicts one's life history strategy (Belsky et al., 2012; Simpson et al., 2012) childhood instability related to mating and kin motives in ways consistent with fast vs. slow life history strategies: people who reported less stable childhoods are slightly higher on mate acquisition (β = -.07) but lower on mate retention (general) (β = .13), kin care (family) (β = .20), and kin care (child) (β = .23). People who reported unstable childhoods were also higher on mate retention (breakup concern) (β = -.13).

Childhood resources. Again consistent with findings that it is early life instability, and not harshness *per se*, that predicts life history strategies (Belsky et al., 2012; Simpson et al., 2012), childhood resources predicted few of the mating or kin care motives, and the motive that did correlate with childhood resources did so in the opposite direction of childhood stability, such that people who reported less childhood resources were *higher* on kin care (child) motive (β = -.12). Lesser childhood resources predicted slightly lower self protection (β = .06) and status (β = .08) motives.

Current resources. People who currently have more resources are slightly more motivated by affiliation (group) (β = .10), and less motivated by self-protection (β = -.08), mate retention (breakup concern) (β = -.14), or kin care (child) (β = -.16).

Summary of life history variables. The life history predictors accounted for some variance in fundamental social motives, best accounting for variability in mate seeking motive (R^2 = .36) and kin care motives (R^2s = .11, .14), and accounting for little variability in disease avoidance motive (R^2 = .01) or affiliation (independence) motive (R^2 = .02). This indicates that some motives (disease avoidance, affiliation [independence]) may exhibit considerable variability between individuals, yet remain particularly consistent across the lifespan. Other motives (mate seeking, kin care) may vary more dynamically across the lifespan and respond sensitively to life circumstances. Overall, the strongest predictors of variability in motives were those that corresponded most closely to life stage and reproductive strategy – age, sex, and childhood stability. In contrast, childhood resources and current resources exerted few effects, and relationship status and parental status exerted effects primarily on those fundamental social motives most closely tied to the presence of a relationship or of children (i.e., mating and kin care motives).

General Discussion

Fundamental social motives distinctly shape a wide range of human psychological phenomena, ranging from social perception to social behavior and decision-making (Griskevicius & Kenrick, 2013; Kenrick, Griskevicius, et al., 2010). To this point, however, research examining these fundamental social motives has focused largely on how situations and environments might acutely activate these motives, or else examined individual differences in these motives in a piecemeal and often indirect fashion. We created the Fundamental Social Motives Inventory to assess seven fundamental social motives together in a concise, consistent, and unified way. A large sample of participants shows that individual differences in the fundamental social motives relate meaningfully to other individual differences; that the motives are separable from the Big Five personality traits; that individual differences in fundamental social motives uniquely predict a number of recent life experiences above and beyond that explained by life history and personality trait variables; and that individual differences in these motives can be partially accounted for by life history variables such as sex, age, and childhood stability.

The structure of, and relationships among, fundamental social motives

This research provided an opportunity to examine the fundamental social motives' relationships to one another – both as they correlate with each other (see Table 1), and as they tend to relate to other individual differences and life experiences. A number of these relationships are notable. First, factor analyses supported a distinction between self-protection and disease avoidance motives (e.g., Neuberg et al., 2011), rather than subsuming these motives into a single overarching threat avoidance motive. This distinction was further corroborated by the differential correlates of self-protection and disease avoidance motives. For example,

whereas age, sex, parent status, and current resources all predicted self-protection motive, only sex predicted disease-avoidance motive. Likewise, self-protection, but not disease avoidance, predicted a number of behaviors specific to protecting oneself from dangerous (but not infectious) people, like carrying a gun in public, carrying mace, and taking a self-defense class.

Analyses also support decomposing the affiliation motive into a more nuanced array of sub-motives specific to groups, exclusion concern, and independence. Given that the fundamental social motives are considered systems for managing distinct adaptive problems, these sub-motives suggest multiple adaptive problems within the overarching domain of "affiliation." The problem of investing in and being a part of groups is different from the problem of detecting and avoiding exclusion by others. The sub-motive of independence from others (or conversely, need for others) does not seem to clearly correspond to a specific adaptive problem, but to a domain-general desire to (not) affiliate. Interestingly, these distinct forms of affiliation motive were only modestly correlated, and each was related to different individual differences and predicted somewhat different behaviors (e.g., playing a team sport, using social networking websites, and having spent less time with friends, respectively).

It is instructive, too, to examine overarching patterns among the motives that emerged repeatedly across the different analyses. For example, mating and kin care motives were predicted by a common set of life history variables (age, sex, and childhood stability) in ways consistent with life history theory: Men, younger people, and people from unstable childhoods were overall more concerned with mate seeking and less concerned with mate retention, and men and people from unstable childhoods were less concerned with kin care.

Fundamental social motives as individual differences

Our data fit with a conception of fundamental social motives as distinct individual differences from personality traits (see also Buss & Cantor, 1989; Emmons, 1995; McAdams, 1995; McAdams & Pals, 2006; Roberts & Robins, 2000), at least as measured by the Big Five: Controlling for the variance accounted for by Big Five traits did not eliminate the extent to which fundamental social motives statistically predicted numerous recent life experiences, including volunteering, playing sports, smoking cigarettes, using social networking websites, spending time with friends, leading others in the workplace, performing for others, going out dancing, having sex, being unfaithful to one's partner, seeing a relationship counselor, breaking up, breaking a bone, moving to a different city, spending time with one's children or grandchildren, and skydiving. Of course, Big Five personality traits have been shown to powerfully predict a wide array of outcomes (John, Naumann, & Soto, 2008). Furthermore, other approaches to personality traits overlap more clearly in content with some of our motives. For example, the Interpersonal Circle (see Trapnell & Wiggins, 1990) identifies nurturance and dominance as primary dimensions of personality, and these would likely correlate with our affiliation/kin care and status motives. Future work may profitably examine the relationships among these other conceptions of traits and the fundamental social motives.

If personality traits and fundamental social motives do indeed operate as separable forms of individual differences, how do they intersect to produce behavior? One way (though surely not the only way) may be for people to adopt different strategies to attain each of the fundamental social goals depending on their Big Five traits. For example, people who are low on agreeableness and high on neuroticism may be more likely to adopt a dominance-based strategy to attain status, whereas highly agreeable and emotionally stable people may be more likely to adopt a prestige-based strategy (Cheng et al., 2010). In addition, there may be evolved

motivational systems that cut across and organize multiple fundamental motives and traits (MacDonald 1995, 2012). Further integration of evolutionary approaches to personality may help with understanding both the structure and interplay of personality components like traits and motives (Buss, 1991; Nichols et al., 2008; DeYoung, 2015; McAdams & Pals, 2006).

Our results furthermore point to important nuances in the structure of individual differences in social motivation, for example the utility in disaggregating affiliation or communion motives into their component relationships (groups, mates, kin). This distinction reflects the differing recurrent adaptive problems these relationships have posed, allows for the detection of different life stage-based changes in these motives, and facilitates understanding of distinct recent life experiences that may be differentially related to these motives. Our results further suggest that some other motives (mate retention, kin care) may also benefit from disaggregation into sub-components.

How do the fundamental social motives relate to conceptions of instincts like McDougall's (1908)? McDougall viewed instincts as both endowed by evolutionary processes and operating through cognition and affect, as we do here with the fundamental social motives. McDougall also identified a number of instincts that correspond closely with our motives, such as instincts for flight, repulsion, reproduction, and parenting, though he identified a broader set than that of our motives and included some instincts that have no clear analog with a fundamental social motive (e.g., a "curiosity instinct"). It is important to note that while the term "instinct" has often been invoked to imply something innate in the sense of rigidly present at birth, the fundamental social motives depend on developmental input and unfold over the organism's lifetime (Kenrick, Griskevicius, et al., 2010). For example, although we see a mate retention motive as "fundamental" because it is linked to a suite of recurrent adaptive problems,

we would not presume that newborns "instinctually" possess a mate retention motive; rather, this motive unfolds over development through flexible interactions with environmental inputs. In addition, fundamental social motives are not "instinctual" in the sense of obligate and deterministic impulses in opposition to what we would likely today call self-control or free will. They are instead social goals that are presumed to guide behavior via both controlled and uncontrolled processes. For example, a strong motive to maintain one's relationship with a current partner might lead to control of one's attention and behavior with attractive relationship alternatives (e.g., Karremans & Verwijmeren, 2008; Maner, Gailliot, & Miller, 2009). Thus, rather than immediately succumbing to an uncontrollable impulse, people may deploy self-control precisely because they are motivated to attain a particular fundamental goal.

Future directions

The fundamental social motives approach has already proven to be highly generative, particularly in experimental social psychology, and the current findings on individual differences provide a strong foundation for further examination. Given that the lifespan does not start at age 18, it will be informative to examine individual differences in fundamental social motives in adolescence and even earlier ages. Likewise, it may be that the strategies one uses to pursue these motives differ over the course of a lifetime as, for example, the behaviors that garner status at age 13 may not be the same as those that garner status at age 43. Future research can examine how strategies to achieve these fundamental goals may change over the lifespan.

Furthermore, our sample was limited to adults from a largely industrialized, educated, and wealthy society (see Henrich, Heine, & Norenzayan, 2010). If truly fundamental, we would expect these social motives to appear across a great variety of human societies. We would also expect, however, that the relative priority of the different motives would vary systematically as a

function of theoretically relevant features of the social and physical ecologies which those societies inhabit. Because life history theory describes ways in which environments may shape social motives, cross-cultural investigations may profitably explore whether certain ecologies shape the variability seen in fundamental social motives (as, for example, an ecology's pathogen prevalence may influence the distribution of disease avoidance and mating motives among the population; e.g., Schaller & Murray, 2008).

The longitudinal examination of fundamental social motives may also prove an exciting and fruitful new direction. Are those who are particularly concerned with status, affiliation, disease avoidance, or kin care at younger ages the same people who care most about these motives at older ages, reflecting a somewhat stable rank-ordering? Do people tend to follow the same general trajectory of moving through the motives – for example, from affiliation to status to mate seeking to mate retention to kin care (Kenrick, Griskevicius, et al., 2010)? If so, do they do so at different paces, with some people quickly achieving earlier motives to focus on subsequent ones but others moving more slowly toward those later goals? Life history theory, in particular, may provide a useful theoretical foundation for exploring these longitudinal questions, as it makes numerous predictions about both the overall trajectory of motives over the lifespan and the speed and amplitude with which different people might move through these motives, based on factors like early childhood environment.

Our analyses also produced a number of unexpected findings. For example, mating and kin care motives uniquely predicted a large number of recent life experiences beyond those that, at face value, relate to the mating or kin care domains. Work on "generativity," or "the concern in establishing and guiding the next generation" (Erikson, 1963, p. 267), has found similar patterns as what we have found here for kin care motives. For example, like kin care (family),

generativity correlates positively with extraversion, agreeableness, and conscientiousness, and negatively with neuroticism (Cox, Wilt, Olson, & McAdams, 2010). Future work may usefully explore how kin care concerns fit with the broader motivational construct of generativity.

We also note that, even though our sample size was large, given the array of analyses more work is needed to test the robustness of unexpected findings. Nonetheless, some may provide a rich starting point for additional theory development and future exploration.

In addition, future research may profitably examine the extent to which the fundamental social motives fit with other social motivational frameworks. For example, are fundamental social motives driven by perceived deficits (Deci & Ryan, 2000; Kenrick, Griskevicius, et al., 2010)? Do they lead people engage in approach and avoidance behavior to achieve these goals (see Kenrick & Shiota, 2008)? Do people seek to promote achievement of a fundamental goal vs. avoid failure to achieve that goal (Crowe & Higgins, 1997)? Although we had initially aimed for the Fundamental Social Motives Inventory to reflect both promotion and prevention of each motive, these distinctions were not borne out in the scale development process (except in the affiliation and mate retention domains). It remains an open empirical question as to how these fundamental social motives may fit with these other motivational frameworks.

Limitations

As in much past research, we have assumed that people have sufficient access to their chronic motives to report them reliably. Of course, it is quite possible that these motives often operate outside awareness (e.g., Nisbett & Wilson, 1977; McClelland, Koestner, & Weinberger, 1989). That said, people have many opportunities to observe their own behavior and to draw inferences about their own motives or qualities (Bem, 1972), and if people unreliably report their own motives, it is unclear how the coherent patterns of results in the current work would emerge.

Furthermore, given the importance of other people's motives for our own outcomes, we are likely highly skilled perceivers of *others'* motives. Indeed, the utility of understanding others' motivations for predicting their future behavior suggests that people are likely to be fluent in detecting and assessing both their own and others' motives. In support of this idea, one study of self and other ratings of the fundamental social motives shows that perceivers are substantially accurate in assessing the social motives of close others (Neel, Human, & Huelsnitz, 2015). Nonetheless, the extent to which people have blind-spots or inaccuracies in perceiving their own motives—for either motivated or informational reasons (Funder, 2012; Vazire, 2010)—remains an open question and one worthy of future research.

Finally, we measured just one indicator of life history strategy: Childhood stability (Belsky et al., 2009; Ellis et al., 2009; Griskevicius et al., 2011; Simpson et al., 2012). This leaves open the questions of both (a) what led to these participants' perceptions of childhood stability or instability, and (b) what additional environmental factors might lead to a change in life history strategy, such as high extrinsic mortality or high population density (e.g., Ellis et al., 2009). That a relatively simplistic indicator of life history strategy nonetheless produced a number of findings consistent with life history theory suggests that we may be underestimating the extent to which life history strategy is shaping social motives. Future work that examines a fuller array of factors known to influence life history strategy may usefully and with greater precision detect the relationships between life history factors and fundamental social motives.

Conclusion

A growing body of research demonstrates that fundamental social motives attune social cognition, emotion, and behavior. Although these motives can be engaged by circumstances, people differ in the extent to which these motives are chronically active, and these differences

can be attributed at least in part to each individual's life history trajectory and life stage. We believe that explorations like ours offer a biologically-grounded and theoretically-based perspective for considering how people manage the complex challenges of being a social animal.

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Footnotes

[1]We here refer to self-protection as protection from dangerous others, which theory and research suggest is distinct from protection from diseases (Neuberg, Kenrick, & Schaller, 2011). We consider disease avoidance a social motive because many pathogens are socially transmitted, and via a "behavioral immune system," people selectively manage contact with others who may be diseased, resulting in social behaviors such as stigmatization and avoidance of those with heuristic signs of illness (Schaller & Duncan, 2009).

[2]Initially we instructed the researchers to generate items that could reflect a *promotion* approach for each motive, whereby a person desires to accomplish the goal, and a *prevention* approach to each motive, whereby a person desires to prevent failure to accomplish the goal (see Crowe & Higgins, 1997; Higgins, 1997). However, with the exceptions of mate retention and affiliation motives, the promotion/prevention distinction within each motive did not emerge clearly in factor analyses, so we dropped this as an aim for the Inventory.

[3]Unexpectedly, greater mate-seeking motive predicted a *lesser* likelihood of having had sex without a condom (odds ratio = .78). Separately running the analyses for single people and for people in relationships revealed that mate-seeking motive differently predicted having sex without a condom for single people vs. people in relationships. For single people, mate-seeking motive predicted a greater likelihood of having had sex without a condom (odds ratio = 1.36, Wald = 3.89, $p = .05$), whereas mate-seeking motive nonsignificantly predicted lesser likelihood of having had sex without a condom for people in a relationship (odds ratio = .81, Wald = 2.43, $p = .12$).

Appendix

The Fundamental Social Motives Inventory

Instructions: We are interested in whether the following statements are true of you at this point in your life. Please answer how well the questions apply to you in general now, not whether these have been true of you in the past or may be true in the future. For each question, think about the extent to which you agree or disagree with the statement. (1 = strongly disagree, 7 = strongly agree)
[note: Mate retention scales are only administered to those in a relationship; Kin care child is only administered to parents. Order of all items is randomized uniquely for each participant]

Self-protection

1. —I think a lot about how to stay safe from dangerous people
2. —I am motivated to keep myself safe from others
3. —I do not worry about keeping myself safe from others (R)
4. —I worry about dangerous people
5. —I think about how to protect myself from dangerous people
6. —I am motivated to protect myself from dangerous others

Disease avoidance

7. —I avoid places and people that might carry diseases
8. —I avoid people who might have a contagious illness
9. —I worry about catching colds and flu from too much contact with other people
10. —I do not worry very much about getting germs from others (R)
11. —When someone near me is sick, it doesn't bother me very much (R)
12. —I don't mind being around people who are sick (R)

Affiliation (group)

13. —Being part of a group is important to me
14. —I enjoy working with a group to accomplish a goal
15. —I like being part of a team
16. —Working in a group is usually more trouble than it's worth (R)
17. —When I'm in a group, I do things to help the group stay together
18. —Getting along with the people around me is a high priority

Affiliation (exclusion concern)

19. —I would be extremely hurt if a friend excluded me
20. —It would be a big deal to me if a group excluded me
21. —It bothers me when groups of people I know do things without me
22. —I worry about being rejected
23. —I often wonder whether I am being excluded
24. —I often think about whether other people accept me

Affiliation (independence)

25. —I would prefer to spend time alone than to be surrounded by other people
26. —I like to be alone even if I might lose some friends because of it
27. —Being apart from my friends for long periods of time does not bother me
28. —I don't mind being by myself for long periods of time
29. —Having time alone is extremely important to me
30. —I like to be by myself

Status

31. —It's important to me that other people look up to me
32. —I want to be in a position of leadership
33. —It's important to me that others respect my rank or position
34. —I do things to ensure that I don't lose the status I have
35. —I do not like being at the bottom of a hierarchy
36. —I do not worry very much about losing status (R)

Mate seeking

37. —I spend a lot of time thinking about ways to meet possible dating partners
38. —I am interested in finding a new romantic/sexual partner
39. —I am not interested in meeting people to flirt with or date (R)
40. —Starting a new romantic/sexual relationship is not a high priority for me (R)
41. —I rarely think about finding a romantic or sexual partner (R)
42. —I would like to find a new romantic/sexual partner soon

Mate retention (general)

43. —It is important to me that my partner is sexually loyal to me
44. —It is important to me that my partner is emotionally loyal to me
45. —I do not spend much time and energy doing things to keep my partner invested in our relationship (R)
46. —It would not be that big a deal to me if my partner and I broke up (R)
47. —If others were romantically interested in my partner, it would not bother me very much (R)
48. —If my partner were to have romantic or sexual relationships with others, that would be OK with me (R)

Mate retention (breakup concern)

49. —I often think about whether my partner will leave me
50. —I worry about others stealing my romantic/sexual partner
51. —I worry that my romantic/sexual partner might leave me
52. —I wonder if my partner will leave me for someone else
53. —I worry that other people are interested in my romantic/sexual partner
54. —I am worried that my partner and I might break up

Kin care (family)

55. —Caring for family members is important to me
56. —Having close ties to my family is not very important to me (R)

57. —I am not very interested in helping my family members (R)
58. —I would rather not spend time with family members (R)
59. —Being close to my family members is extremely important to me
60. —It is extremely important to me to have good relationships with my family members

Kin care (children)

61. —I help take care of my children
62. —I like to spend time with my children
63. —Taking care of my children is not a high priority for me right now (R)
64. —I often think about how I could stop bad things from happening to my children
65. —I rarely think about protecting my children (R)
66. —Providing for my children is important to me

Table 1. Descriptive statistics and correlations among the Fundamental Social Motives (combined Samples A, B, and C).

				Correlations									
	M	*SD*	*N*	1	2	3	4	5	6	7	8	9	10
1. Self Protection	4.60	1.25	1560										
2. Disease Avoidance	4.10	1.32	1560	.44*									
3. Affiliation (Group)	4.54	1.06	1560	.07*	-.07*								
4. Affiliation (Exclusion Concern)	3.93	1.33	1560	.18*	.08*	.19*							
5. Affiliation (Independence)	4.86	1.10	1560	.07*	.05*	-.40*	-.14*						
6. Status	4.12	1.06	1560	.20*	.12*	.32*	.43*	-.13*					
7. Mate Acquisition	2.83	1.61	1560	-.11*	-.06*	.00	.21*	-.08*	.17*				
8. Mate Retention (General)	5.79	1.03	1017	.18*	.08*	.16*	-.09*	-.04	-.02	-.63*			
9. Mate Retention (Breakup Concern)	2.85	1.60	1017	.13*	.01	-.08*	.43*	.04	.18*	.36*	-.22*		
10. Kin Care (Family)	5.43	1.30	1560	.21*	.09*	.37*	-.08*	-.13*	.05	-.25*	.43*	-.30*	
11. Kin Care (Child)	6.01	0.96	665	.33*	.10*	.14*	-.05	.01	.05	-.29*	.48*	-.19*	.52*

*$p < .05$

Table 2. Sample sizes and reliabilities for individual difference measures in Samples A, B a

		Sample A		Sample B		Sample C	
Inventory	Scale	*n*	α	*n*	α	*n*	α
FSMI							
	Self protection	480	.86	701	.89	350	.88
	Disease avoidance	474	.87	699	.86	352	.88
	Affiliation (group)	480	.81	695	.82	347	.83
	Affiliation (exclusion concern)	476	.87	697	.89	353	.87
	Affiliation (independence)	478	.84	702	.84	351	.79
	Status	477	.75	701	.79	353	.79
	Mate seeking	477	.91	703	.91	354	.92
	Mate retention (general)	334	.75	446	.78	222	.82
	Mate retention (breakup concern)	332	.93	445	.94	221	.95
	Kin care (family)	485	.91	703	.89	357	.92
	Kin care (child)	195	.77	305	.77	151	.83
Big Five Inventory (John & Srivastava, 1999)							
	Extraversion	448	.87	702	.89		
	Agreeableness	454	.80	699	.82		
	Conscientiousness	452	.85	693	.84		
	Neuroticism	445	.85	693	.84		
	Openness	446	.81	696	.84		
Big Five Inventory (Maples, Guan, Carter, & Miller, 2014)							
	Extraversion					338	.91
	Agreeableness					334	.87
	Conscientiousness					329	.92
	Neuroticism					331	.93
	Openness					332	.83
Sociosexual Orientation Inventory (Jackson & Kirkpatrick, 2007)							
	Short term mating orientation	219	.94				
	Long term mating orientation	223	.92				
Perceived Vulnerability to Disease (Duncan, Schaller, & Park, 2009)							
	Infect [check name]	223	.91				
	Germ aversion [check name]	219	.74				
Dominance and Prestige Scales (Cheng, Tracy, & Henrich, 2010)							
	Dominance	222	.83				

Prestige	219	.84
Belief in a dangerous world (Altemeyer, 1988)		
	221	.90
Need to Belong (Leary, Kelly, Cottrell, & Schreindorfer, 2005)		
	217	.84
Experiences in Close Relationships - Revised (Fraley, Waller, & Brennan, 2000)		
Anxiety	217	.96
Avoidance	220	.96

Table 3. Zero-order correlations of Fundamental Social Motives with other individual differences and the Big Five personality traits. Bolded text indicates correlations between conceptually related constructs.

	BDW	PVD	N2B	Dom	Pres	S-SOI	L-SOI	Av	Anx
Self Protection	**.38***	.46*	.26*	.17*	-.02	-.02	.11	-.04	.12
Disease Avoidance	.29*	**.64***	-.08	.12	-.06	-.05	.02	.07	-.01
Affiliation (Group)	-.08	.07	**.37***	.00	.26*	-.06	.14*	-.39*	-.14*
Affiliation (Exclusion Concern)	.01	.11	**.75***	.24*	-.17*	.14*	.00	.10	.45*
Affiliation (Independence)	-.02	.01	**-.46***	-.09	-.15*	.06	-.05	.24*	.07
Status	.09	.05	.47*	**.52***	**.33***	.15*	.11	-.08	.18*
Mate Seeking	-.05	-.02	.15*	.30*	-.03	**.44***	-.25*	.31*	.41*
Mate Retention (General)	.18*	.02	.04	-.26*	.28*	-.30*	**.60***	**-.45***	-.17*
Mate Retention (Breakup Concern)	.15	.15	.27*	.33*	-.31*	.27*	-.29*	.30*	**.84***
Kin Care (Family)	.11	.12	.21*	-.25*	.24*	-.21*	.26*	-.28*	-.18*
Kin Care (Child)	.05	-.06	.14	-.28*	.24*	-.22*	.39*	-.24*	-.20

	Big Five Personality Traits									
	44-item version					120-item IPIP version				
	E	A	C	N	O	E	A	C	N	O
Self Protection	.04	.03	.09*	.17*	.06*	-.03	.02	.18*	.14*	-.08
Disease Avoidance	-.07*	-.10*	.10*	.10*	-.03	-.12*	-.09	.06	.11*	-.15*
Affiliation (Group)	.41*	.45*	.21*	-.22*	.14*	.45*	.38*	.26*	-.32*	-.08
Affiliation (Exclusion Concern)	-.14*	-.14*	-.25*	.43*	-.08*	-.20*	-.06	-.29*	.56*	-.10
Affiliation (Independence)	-.36*	-.22*	-.05	.14*	.09*	-.27*	-.01	.07	.12*	.08
Status	.26*	-.06*	.03	.06	.12*	.30*	-.28*	.04	.03	-.13*

Mate Seeking	-.01	-.16*	-.13*	.05	.03	-.04	-.36*	-.23*	.14*	.02
Mate Retention (General)	.03	.29*	.29*	-.09*	.12*	.13	.48*	.49*	-.24*	.20*
Mate Retention (Breakup Concern)	-.13*	-.25*	-.31*	.37*	-.03	-.29*	-.31*	-.45*	.55*	.02
Kin Care (Family)	.21*	.42*	.29*	-.15*	.11*	.25*	.45*	.46*	-.30*	-.03
Kin Care (Child)	.02	.23*	.19*	.03	.08	.13	.40*	.41*	-.16	.02

Note: *$p < .05$. BDW = Belief in a Dangerous World, PVD = Perceived Vulnerability to Disease: Germ Aversion, N2B = Need to Belong, Dom = Dominance, Pres = Prestige, S-SOI = Short-term Sociosexual Orientation, L-SOI = Long-term Sociosexual Orientation, Av = Attachment Avoidance, Anx = Attachment Anxiety, E = Extraversion, A = Agreeableness, C = Conscientiousness, N = Neuroticism, O = Openness

Table 4. Life history predictors of Fundamental Social Motives.

	Self-protection				Disease Avoidance				Affiliation (Group)			
	B	*SE*	95% CI	β	*B*	*SE*	95% CI	β	*B*	*SE*	95% CI	β
Age	**-.012**	**.003**	**[-.018, -.005]**	**-.12**	.004	.004	[-.003, .011]	.04	.000	.003	[-.005, .005]	.00
Sex	**.21**	**.04**	**[.14, .29]**	**.17**	**.11**	**.04**	**[.03, .19]**	**.08**	-.01	.03	[-.08, .05]	-.01
Relationship status	.03	.04	[-.05, .11]	.02	.00	.05	[-.09, .09]	.00	.04	.04	[-.03, .11]	.04
Parent status	**.19**	**.04**	**[.10, .27]**	**.15**	.04	.05	[-.06, .13]	.03	**.10**	**.04**	**[.03, .18]**	**.10**
Childhood stability	-.03	.02	[-.08, .02]	-.04	-.04	.03	[-.09, .01]	-.05	.02	.02	[-.02, .06]	.03
Childhood resources	.05	.03	[.00, .10]	.07	.04	.03	[-.01, .10]	.05	.03	.02	[-.01, .07]	.05
Current resources	**-.05**	**.02**	**[-.09, -.01]**	**-.08**	-.01	.02	[-.06, .03]	-.02	**.07**	**.02**	**[.03, .10]**	**.11**
	F		*df*	R^2	*F*		*df*	R^2	*F*		*df*	R^2
	10.29		(7, 1117)	.06	2.15		(7, 1117)	.01	5.86		(7, 1117)	.04

	Affiliation (Exclusion Concern)				Affiliation (Independence)				Status			
	B	*SE*	95% CI	β	*B*	*SE*	95% CI	β	*B*	*SE*	95% CI	β
Age	**-.027**	**.003**	**[-.034, -.021]**	**-.26**	.005	.003	[-.001, .011]	.05	**-.017**	**.003**	**[-.022, -.012]**	**-.20**
Sex	.08	.04	[.00, .16]	.06	.06	.04	[.00, .13]	.06	-.04	.03	[-.10, .02]	-.04
Relationship	-.05	.04	[-.14, .04]	-.04	**-.12**	**.04**	**[-.20, -.05]**	**-.10**	.00	.04	[-.07, .07]	.00

Parent status	-.06	.05	[-.15, .03]	-.04	-.02	.04	[-.10, .06]	-.02	.04	.04	[-.03, .11]	.04
Childhood stability	.01	.03	[-.04, .07]	.02	.00	.02	[-.05, .04]	-.01	-.01	.02	[-.05, .03]	-.02
Childhood resources	.02	.03	[-.03, .07]	.03	-.01	.02	[-.05, .04]	-.01	**.07**	**.02**	**[.03, .11]**	**.11**
Current resources	-.04	.02	[-.08, .01]	-.05	-.03	.02	[-.07, .01]	-.05	.03	.02	[-.01, .06]	.05
	F		*df*	R^2	*F*		*df*	R^2	*F*		*df*	R^2
	14.86		(7, 1117)	.09	3.20		(7, 1117)	.02	10.18		(7, 1117)	.06

	Mate Seeking				Mate Retention (General)				Mate Retention (Breakup Concern)			
	B	*SE*	95% CI	β	*B*	*SE*	95% CI	β	*B*	*SE*	95% CI	β
Age	**-.018**	**.003**	**[-.025, -.012]**	**-.14**	**.007**	**.003**	**[.001, .013]**	**.09**	**-.029**	**.005**	**[-.039, -.019]**	**-.23**
Sex	**-.29**	**.04**	**[-.36, -.21]**	**-.17**	**.19**	**.04**	**[.11, .26]**	**.18**	-.11	.06	[-.22, .01]	-.06
Relationship status	**-.87**	**.04**	**[-.96, -.79]**	**-.52**	-	-	-	-	-	-	-	-
Parent status	-.06	.05	[-.15, .03]	-.04	-.07	.04	[-.15, .01]	-.07	-.03	.06	[-.15, .09]	-.02
Childhood stability	**-.06**	**.03**	**[-.11, -.01]**	**-.06**	**.08**	**.02**	**[.03, .12]**	**.12**	**-.11**	**.04**	**[-.19, -.04]**	**-.12**
Childhood resources	.04	.03	[-.01, .09]	.04	-.03	.03	[-.08, .02]	-.05	.04	.04	[-.04, .12]	.04
Current resources	.01	.02	[-.03, .05]	.01	.01	.02	[-.04, .05]	.01	**-.13**	**.03**	**[-.19, -.07]**	**-.14**
	F		*df*	R^2	*F*		*df*	R^2	*F*		*df*	R^2
	101.86		(7, 1117)	.39	6.80		(6, 735)	.05	13.82		(6, 735)	.10

	Kin Care (Family)				Kin Care (Child)			
	B	*SE*	95% CI	β	*B*	*SE*	95% CI	β
Age	.004	.003	[-.002, .010]	.04	**-.016**	**.003**	**[-.022, -.010]**	**-.22**
Sex	**.23**	**.04**	**[.16, .30]**	**.17**	**.14**	**.05**	**[.05, .23]**	**.14**
Relationship status	**.11**	**.04**	**[.04, .19]**	**.09**	-.05	.06	[-.17, .07]	-.04
Parent status	**.21**	**.04**	**[.13, .30]**	**.16**	-	-	-	-
Childhood stability	**.17**	**.02**	**[.12, .21]**	**.21**	**.13**	**.03**	**[.07, .18]**	**.22**
Childhood resources	-.01	.03	[-.06, .03]	-.02	**-.06**	**.03**	**[-.12, -.01]**	**-.11**
Current resources	.02	.02	[-.02, .06]	.03	**-.10**	**.02**	**[-.14, -.05]**	**-.19**
	F		*df*	R^2	*F*		*df*	R^2
	26.28		(7, 1117)	.14	12.08		(6, 456)	.14

Note: Predictors whose 95% confidence intervals do not include zero are bolded.

Table S1. Fundamental Social Motives Confirmatory Factor Analysis results

Scales in model (subscales)	No. factors	No. items	N	df	χ^2	AIC	RMSEA	NNFI	CFI	SRMR
a. Self protection, disease avoidance	1	12	691	54	1049.33	29117.44	0.163	0.610	0.681	0.146
	2	12	691	53	278.88	28049.34	0.079	0.910	0.927	0.059
b. Affiliation (group, exclusion, independence)	1	18	674	135	2880.61	42844.44	0.174	0.350	0.426	0.199
	3	18	674	132	762.92	40251.61	0.084	0.847	0.868	0.092
c. Status	1	6	702	9	40.52	14671.61	0.071	0.937	0.962	0.035
d. Mate acquisition	1	6	704	9	85.51	14660.59	0.110	0.953	0.972	0.038
e. Mate retention (general, breakup concern)	1	12	440	model did not converge in 3000 iterations						
	2	12	440	53	245.88	17211.90	0.091	0.904	0.923	0.075
f. Kin care (family)	1	6	704	9	40.71	13286.11	0.071	0.967	0.980	0.029
g. Kin care (family, child)	1	12	302	54	256.14	11651.29	0.111	0.728	0.777	0.087
	2	12	302	53	141.76	11475.38	0.074	0.878	0.902	0.068

Table S2. Zero-order correlations of Fundamental Social Motives with the 30 facets of the Big Five personality traits

	Extraversion						Agreeableness						Concientiousness					
	Friendliness	Gregariousness	Assertiveness	Activity Level	Excitement Seeking	Cheerfulness	Trust	Morality	Altruism	Cooperation	Modesty	Sympathy	Self Efficacy	Orderliness	Dutifulness	Achievement Striving	Self Discipline	Cautiousness
Self Protection	-.05	-.18*	.07	.09	-.05	.03	-.22*	.07	.10	-.04	.05	.14*	.15*	.15*	.11*	.24*	.05	.12*
Disease Avoidance	-.08	-.18*	-.03	-.03	-.12*	-.06	-.09	.01	-.09	-.07	-.04	-.05	.02	.14*	.01	.02	-.01	.06
Affiliation (Group)	.51*	.34*	.26*	.24*	.17*	.39*	.47*	.12*	.47*	.24*	-.13*	.29*	.25*	.15*	.23*	.26*	.17*	.15*
Affiliation (Exclusion Concern)	-.18*	-.13*	-.20*	-.15*	.00	-.17*	-.02	-.13*	-.04	-.22*	.06	.12*	-.22*	-.13*	-.23*	-.15*	-.33*	-.24*
Affiliation (Independence)	-.27*	-.42*	-.08	-.07	-.14*	-.14*	-.28*	.10	-.06	.05	.16*	.01	.12*	-.03	.19*	.06	-.02	.03
Status	.16*	.16*	.43*	.21*	.26*	.09	.03	-.25*	-.03	-.30*	-.40*	-.12*	.19*	.01	-.07	.25*	-.02	-.15*
Mate Seeking	-.12*	.06	-.01	-.08	.17*	-.18*	-.18*	-.30*	-.31*	-.28*	-.13*	-.23*	-.17*	-.03	-.32*	-.18*	-.11*	-.24*
Mate Retention (General)	.17*	-.10	.15*	.14*	-.09	.32*	.22*	.49*	.46*	.40*	.14*	.24*	.37*	.24*	.58*	.42*	.23*	.40*
Mate Retention (Breakup Concern)	-.30*	-.16*	-.12	-.25*	.01	-.41*	-.28*	-.22*	-.31*	-.41*	.07	-.08	-.44*	-.25*	-.31*	-.27*	-.42*	-.32*
Kin Care (Family)	.32*	.10	.15*	.24*	-.07	.32*	.27*	.30*	.51*	.37*	.08	.25*	.33*	.33*	.37*	.41*	.32*	.32*
Kin Care (Child)	.16*	-.07	.05	.25*	-.07	.29*	.15	.29*	.51*	.32*	.20*	.18*	.28*	.30*	.42*	.41*	.20*	.30*

	Neuroticism						Openness					
	Anxiety	Anger	Depression	Self Consciousness	Immoderation	Vulnerability	Imagination	Artistic Interests	Emotionality	Adventurousness	Intellect	Liberalism
Self Protection	.29*	.19*	.07	.04	.01	.01	.02	.00	.22*	-.22*	-.09	-.18*
Disease Avoidance	.16*	.16*	-.02	.11*	.05	.10	.00	-.12*	.08	-.27*	-.17*	-.06
Affiliation (Group)	-.19*	-.30*	-.32*	-.25*	-.14*	-.27*	-.09	.14*	-.09	.01	.05	-.26*
Affiliation (Exclusion Concern)	.55*	.35*	.44*	.54*	.34*	.40*	.13*	-.13*	.18*	-.29*	-.24*	.02
Affiliation (Independence)	.13*	.09	.16*	.08	.04	.01	.25*	.05	.05	-.16*	.05	.05
Status	.05	.11*	-.01	-.07	.12*	-.06	.03	-.10	-.07	-.08	-.10	-.10
Mate Seeking	.02	.13*	.14*	.04	.17*	.15*	.10	-.10	-.08	.06	-.04	.12*
Mate Retention (General)	-.07	-.12	-.26*	-.17*	-.22*	-.23*	.01	.27*	.14*	-.04	.27*	.02
Mate Retention (Breakup Concern)	.49*	.36*	.54*	.42*	.26*	.42*	.10	-.14*	.21*	-.07	-.14*	.12
Kin Care (Family)	-.13*	-.24*	-.33*	-.21*	-.24*	-.23*	-.05	.17*	.03	-.04	.08	-.27*
Kin Care (Child)	-.04	-.06	-.21*	-.13	-.12	-.18*	-.05	.11	.17*	-.10	.11	-.14

Table S3. Regressions predicting behaviors and experiences from the Fundamental Social Motives.

				Regression						
Motivation/Item	*n* participants responding "yes"	DV	Model	*n*	*B*	*SE*	Odds Ratio	95% CI for Odds Ratio or *B*	Wald or *t*	*p*
Self protection										
Carried mace/pepper spray to protect yourself	59	Yes/No	1	469	.30	.12	1.35	[1.06, 1.72]	Wald = 5.94	.02
			2	444	.30	.17	1.35	[.97, 1.89]	Wald = 3.13	.08
		Frequency	1	59	.95	.26		[.44, 1.46]	*t* = 3.71	<.001
			2	57	1.13	.37		[.37, 1.88]	*t* = 3.02	.005
Taken a self-defense class	26	Yes/No	1	469	.46	.19	1.59	[1.10, 2.26]	Wald = 6.14	.01
			2	444	.76	.29	2.13	[1.21, 3.75]	Wald = 6.93	.008
Carried a weapon in public	45	Yes/No	1	469	.13	.14	1.14	[.87, 1.48]	Wald = .91	.32
			2	444	.17	.20	1.18	[.80, 1.74]	Wald = .72	.40
		Frequency	1	45	1.05	.33		[.39, 1.71]	*t* = 3.20	.003
			2	44	1.16	.46		[.21, 2.11]	*t* = 2.53	.02
Purchased a gun	20	Yes/No	1	469	.03	.19	1.03	[.70, 1.50]	Wald = .02	.90
			2	444	-.02	.30	.98	[.55, 1.76]	Wald = .00	.95
Kept a gun in your home	110	Yes/No	1	469	.12	.09	1.13	[.94, 1.36]	Wald = .91	.34
			2	444	.03	.13	1.04	[.80, 1.33]	Wald = .07	.79
Used a home security system	89	Yes/No	1	469	.25	.10	1.29	[1.05, 1.58]	Wald = 5.93	.02
			2	444	.25	.15	1.28	[.96, 1.71]	Wald = 2.83	.09
Punched or forcefully shoved someone	82	Yes/No	1	469	-.05	.10	.95	[.78, 1.16]	Wald = .26	.61
			2	444	-.09	.15	.91	[.67, 1.23]	Wald = .38	.54
		Frequency	1	82	.14	.08		[-.03, .31]	*t* = 1.62	.11

			2	77	.28	.10		[.07, .48]	*t* =	2.67	.01
Screamed at someone	295	Yes/No	1	469	.26	.08	1.30	[1.10, 1.53]	Wald =	9.88	.002
			2	444	.08	.11	1.08	[.87, 1.34]	Wald =	.47	.49
Been in a physical fight	48	Yes/No	1	469	.20	.13	1.22	[.94, 1.58]	Wald =	2.19	.14
			2	444	.35	.20	1.42	[.96, 2.11]	Wald =	3.13	.08
Disease avoidance											
Avoided shaking hands with someone who seemed sick	148	Yes/No	1	469	.58	.09	1.67	[1.42, 1.98]	Wald =	37.39	<.001
			2	444	.54	.11	1.71	[1.38, 2.12]	Wald =	24.48	<.001
		Frequency	1	148	.15	.06		[.03, .27]	*t* =	2.40	.02
			2	141	.20	.08		[.04, .36]	*t* =	2.50	.01
Smoked cigarettes	158	Yes/No	1	469	-.16	.08	.84	[.73, .99]	Wald =	4.50	.03
			2	444	-.10	.10	.91	[.75, 1.10]	Wald =	1.02	.31
Gone to a gym or exercise class	235	Yes/No	1	469	-.01	.07	1.00	[.87, 1.14]	Wald =	.01	.94
			2	444	.07	.09	1.07	[.89, 1.29]	Wald =	.56	.45
Gotten a flu shot	130	Yes/No	1	469	.01	.08	1.01	[.87, 1.18]	Wald =	.01	.91
			2	444	-.03	.10	.97	[.81, 1.18]	Wald =	.07	.79
Visited someone in the hospital	216	Yes/No	1	469	.01	.07	1.01	[.88, 1.16]	Wald =	.02	.88
			2	444	-.02	.09	.98	[.82, 1.17]	Wald =	.06	.80
Affiliation group											
Played a team sport	98	Yes/No	1	469	.47	.12	1.60	[1.26, 2.03]	Wald =	14.62	<.001
			2	444	.43	.19	1.54	[1.07, 2.22]	Wald =	5.33	.02
Volunteered your time for an organization	223	Yes/No	1	469	.43	.10	1.53	[1.27, 1.85]	Wald =	19.64	<.001
			2	444	.28	.14	1.32	[1.01, 1.72]	Wald =	4.19	.04
Attended religious service	200	Yes/No	1	469	.27	.09	1.31	[1.09, 1.57]	Wald =	8.11	.004
			2	444	.17	.14	1.19	[.91, 1.55]	Wald =	1.64	.20
Smoked cigarettes	158	Yes/No	1	469	.21	.10	1.23	[1.02, 1.49]	Wald =	4.50	.03
			2	444	.36	.15	1.44	[1.08, 1.92]	Wald =	5.99	.01

Mentioned friends in prior evening description	61	Yes/No	1	701	.40	.14	1.50	[1.14, 1.96]	Wald	=	8.58	.003
			2	681	.51	.21	1.66	[1.10, 2.51]	Wald	=	5.83	.02
Affiliation exclusion concern												
Used a social networking website (like Facebook)	405	Yes/No	1	469	.23	.11	1.26	[1.02, 1.55]	Wald	=	4.59	.03
			2	444	.21	.18	1.24	[.88, 1.74]	Wald	=	1.44	.23
		Frequency	1	405	.37	.07		[.22, .51]	*t*	=	5.04	<.001
			2	383	.45	.10		[.25, .65]	*t*	=	4.41	<.001
Used twitter	209	Yes/No	1	469	.22	.08	1.24	[1.07, 1.44]	Wald	=	8.22	.004
			2	444	.12	.12	1.13	[.90, 1.41]	Wald	=	1.04	.31
		Frequency	1	209	.02	.13		[-.24, .27]	*t*	=	.15	.88
			2	202	.00	.18		[-.35, .35]	*t*	=	.02	.99
Affiliation independence												
Mentioned friends in prior evening description	61	Yes/No	1	701	-.33	.11	.72	[.57, .90]	Wald	=	8.54	.003
			2	681	-.26	.15	.77	[.58, 1.03]	Wald	=	3.08	.08
Status												
Had a job where other people worked for you	86	Yes/No	1	469	.40	.13	1.49	[1.16, 1.91]	Wald	=	9.64	.002
			2	444	.45	.18	1.56	[1.10, 2.22]	Wald	=	6.26	.01
Gotten a promotion	92	Yes/No	1	469	.30	.12	1.34	[1.06, 1.71]	Wald	=	5.87	.02
			2	444	.23	.18	1.26	[.90, 1.78]	Wald	=	1.76	.19
Played music, sang, or performed for others	159	Yes/No	1	469	.50	.11	1.65	[1.33, 2.04]	Wald	=	20.64	<.001
			2	444	.35	.14	1.41	[1.07, 1.86]	Wald	=	6.04	.01
Made a piece of art (e.g., painting, sculpture, drawing)	205	Yes/No	1	469	.07	.10	1.08	[.89, 1.30]	Wald	=	.60	.44
			2	444	-.04	.13	.97	[.74, 1.25]	Wald	=	.07	.79
Mate seeking												
Chosen to end a relationship	105	Yes/No	1	469	.47	.07	1.60	[1.32, 1.85]	Wald	=	40.22	<.001
			2	444	.47	.11	1.60	[1.30, 1.97]	Wald	=	19.69	<.001
Had someone break up with you / end your relationship	92	Yes/No	1	469	.43	.08	1.54	[1.33, 1.79]	Wald	=	32.79	<.001
			2	444	.47	.10	1.60	[1.30, 1.97]	Wald	=	19.62	<.001

Asked someone to go out on a date	122	Yes/No	1	469	.46	.07	1.59	[1.38, 1.82]	Wald	=	42.39	<.001
			2	444	.40	.10	1.49	[1.22, 1.82]	Wald	=	14.88	<.001
Been asked out on a date	182	Yes/No	1	469	.46	.07	1.59	[1.39, 1.81]	Wald	=	47.98	<.001
			2	444	.47	.10	1.60	[1.33, 1.93]	Wald	=	23.92	<.001
Gone out dancing	174	Yes/No	1	469	.30	.06	1.35	[1.19, 1.52]	Wald	=	22.32	<.001
			2	444	.35	.10	1.41	[1.17, 1.71]	Wald	=	13.02	<.001
		Frequency	1	174	.14	.04		[.07, .21]	*t*	=	3.75	<.001
			2	165	.13	.05		[.03, .23]	*t*	=	2.57	.01
Gone to a music concert	223	Yes/No	1	469	.12	.06	1.13	[1.01, 1.27]	Wald	=	4.24	.04
			2	444	.03	.09	1.03	[.86, 1.23]	Wald	=	.09	.76
		Frequency	1	223	.10	.04		[.03, .17]	*t*	=	2.82	.005
			2	211	.10	.05		[.00, .20]	*t*	=	2.03	.04
Had sex with a condom	196	Yes/No	1	469	.22	.06	1.25	[1.11, 1.41]	Wald	=	13.08	<.001
			2	444	.26	.09	1.30	[1.08, 1.55]	Wald	=	8.07	.004
Had sex without a condom	302	Yes/No	1	469	-.25	.06	.78	[.69, .88]	Wald	=	15.57	<.001
			2	444	.04	.10	1.04	[.87, 1.26]	Wald	=	.20	.66
		Frequency	1	302	-.15	.06		[-.28, -.03]	*t*	=	-2.45	.02
			2	285	-.22	.09		[-.39, -.05]	*t*	=	-2.58	.01
Had a job where other people worked for you	89	Yes/No	1	469	.10	.07	1.11	[.96, 1.28]	Wald	=	1.96	.16
			2	444	.33	.12	1.38	[1.11, 1.73]	Wald	=	8.03	.005
Gotten a promotion	96	Yes/No	1	469	.22	.07	1.25	[1.08, 1.43]	Wald	=	9.45	.002
			2	444	.32	.11	1.37	[1.11, 1.70]	Wald	=	8.25	.004
Started a new job	194	Yes/No	1	469	.14	.06	1.15	[1.03, 1.30]	Wald	=	5.59	.02
			2	444	.18	.09	1.20	[1.01, 1.43]	Wald	=	4.27	.04
Had a falling out with a friend	174	Yes/No	1	469	.28	.06	1.32	[1.17, 1.50]	Wald	=	20.10	<.001
			2	444	.24	.09	1.27	[1.07, 1.52]	Wald	=	7.45	.006
		Frequency	1	174	.16	.04		[.09, .24]	*t*	=	4.25	<.001

			2	166	.11	.05		[.01, .21]	*t* =	2.16	.03
Moved within the same town/city	117	Yes/No	1	469	.20	.07	1.23	[1.07, 1.40]	Wald =	9.16	.002
			2	444	.22	.10	1.25	[1.03, 1.51]	Wald =	5.20	.02
Gone a full day without eating	196	Yes/No	1	469	.06	.06	1.06	[.94, 1.19]	Wald =	.84	.36
			2	444	.04	.09	1.04	[.88, 1.23]	Wald =	.19	.66
		Frequency	1	196	.11	.04		[.03, .19]	*t* =	2.79	.006
			2	187	.16	.05		[.06, .26]	*t* =	3.21	.002
Bought a gift for a romantic partner when it wasn't a holiday or birthday	290	Yes/No	1	469	-.39	.07	.67	[.59, .77]	Wald =	36.86	<.001
			2	444	-.25	.10	.78	[.64, .95]	Wald =	6.22	.01
Smoked cigarettes	158	Yes/No	1	469	.17	.06	1.18	[1.05, 1.34]	Wald =	1.18	.007
			2	444	.21	.09	1.24	[1.04, 1.48]	Wald =	5.52	.02
Broken a bone	34	Yes/No	1	469	.36	.11	1.43	[1.16, 1.76]	Wald =	10.82	.001
			2	444	.35	.17	1.42	[1.02, 1.97]	Wald =	4.37	.04
Mentioned child/grandchild in prior evening description (full sample)	95	Yes/No	1	701	-.59	.10	.55	[.46, .67]	Wald =	35.88	<.001
			2	681	-.47	.16	.63	[.46, .86]	Wald =	8.64	.003
Mentioned child/grandchild in prior evening description (parents only)	95	Yes/No	1	306	-.39	.12	.68	[.54, .85]	Wald =	11.21	.001
			2*	294	-.45	.16	.64	[.47, .88]	Wald =	7.64	.006
Mentioned family member (not child/grandchild) in prior evening description	97	Yes/No	1	701	-.10	.07	.91	[.79, 1.04]	Wald =	1.88	.17
			2	681	-.05	.10	.85	[.79, 1.14]	Wald =	.33	.56
Mate retention general											
Bought a holiday/birthday gift for a romantic partner	286	Yes/No	1	325	.71	.16	2.04	[1.50, 2.79]	Wald =	20.20	<.001
			2	307	.71	.27	2.02	[1.19, 3.45]	Wald =	6.73	.009
Bought a gift for a romantic	249	Yes/No	1	325	.54	.13	1.71	[1.33, 2.21]	Wald =	1.71	<.001

partner when it wasn't a holiday or birthday			2	307	.39	.20	1.47	[1.00, 2.16]	Wald =	3.82	.05
Been unfaithful to a romantic/sexual partner	32	Yes/No	1	325	-1.22	.20	.30	[.20, .43]	Wald =	38.84	<.001
			2	307	-.84	.33	.43	[.23, .83]	Wald =	6.44	.01
Mentioned romantic partner in prior evening description	95	Yes/No	1	447	.47	.14	1.59	[1.22, 2.08]	Wald =	11.54	.001
			2	436	.29	.19	1.34	[.92, 1.94]	Wald =	2.32	.13
Mate retention breakup concern											
Been to a relationship counselor	32	Yes/No	1	325	.38	.12	1.46	[1.15, 1.85]	Wald =	9.54	.002
			2	307	.50	.20	1.64	[1.11, 2.42]	Wald =	6.27	.01
Been unfaithful to a romantic/sexual partner	32	Yes/No	1	325	.57	.13	1.77	[1.38, 2.28]	Wald =	20.24	<.001
			2	307	.55	.24	1.73	[1.08, 2.76]	Wald =	5.27	.02
Mentioned romantic partner in prior evening description	95	Yes/No	1	447	-.20	.08	.82	[.70, .95]	Wald =	6.66	.01
			2	436	-.26	.10	.77	[.63, .94]	Wald =	6.60	.01
Kin care family											
Baby sat or cared for a younger relative	195	Yes/No	1	469	.31	.08	1.37	[1.17, 1.59]	Wald =	16.23	<.001
			2	444	.22	.09	1.24	[1.02, 1.52]	Wald =	4.54	.03
Had a family member have a child	143	Yes/No	1	469	.08	.08	1.09	[.93, 1.26]	Wald =	1.10	.30
			2	444	-.04	.11	.96	[.79, 1.19]	Wald =	.12	.73
Had a family member die	126	Yes/No	1	469	.10	.08	1.10	[.94, 1.29]	Wald =	1.43	.23
			2	444	.10	.11	1.10	[.89, 1.37]	Wald =	.83	.36
Been skydiving	14	Yes/No	1	469	-.51	.17	.60	[.43, .84]	Wald =	9.00	.003
			2	444	-.81	.34	.44	[.23, .86]	Wald =	5.84	.02
Been arrested	20	Yes/No	1	469	-.55	.15	.58	[.43, .77]	Wald =	14.50	<.001
			2	444	-.58	.25	.56	[.34, .91]	Wald =	5.36	.02
Moved within the same town/city	117	Yes/No	1	469	-.20	.08	.82	[.70, .95]	Wald =	6.62	.01
			2	444	-.17	.11	.84	[.68, 1.04]	Wald =	2.52	.11

Moved to a different town/city	132	Yes/No	1	469	-.18	.08	.83	[.72, .96]	Wald	=	5.96	.02
			2	444	-.21	.11	.81	[.66, 1.00]	Wald	=	3.86	.05
Moved to a different country	17	Yes/No	1	469	-.47	.16	.63	[.46, .85]	Wald	=	8.90	.003
			2	444	-.70	.33	.50	[.26, .94]	Wald	=	4.61	.03
Kept a gun in your home	110	Yes/No	1	469	.32	.10	1.37	[1.14, 1.66]	Wald	=	11.13	.001
			2	444	.32	.13	1.37	[1.08, 1.75]	Wald	=	6.44	.01
Cooked a meal at home	438	Yes/No	1	469	.52	.12	1.69	[1.33, 2.14]	Wald	=	18.36	<.001
			2	444	.75	.24	2.12	[1.34, 3.36]	Wald	=	10.27	.001
Asked someone to go out on a date	122	Yes/No	1	469	-.30	.08	.75	[.64, .87]	Wald	=	14.44	<.001
			2	444	-.30	.12	.75	[.59, .94]	Wald	=	6.34	.01
Chosen to end a relationship	105	Yes/No	1	469	-.34	.08	.71	[.61, .83]	Wald	=	18.08	<.001
			2	444	-.33	.12	.72	[.57, .91]	Wald	=	7.63	.006
Mentioned child/grandchild in prior evening description (full sample)	95	Yes/No	1	701	.51	.11	1.67	[1.34, 2.08]	Wald	=	20.34	<.001
			2	681	-.09	.18	.91	[.65, 1.28]	Wald	=	.29	.59
Mentioned child/grandchild in prior evening description (parents only)	95	Yes/No	1	306	.28	.13	1.32	[1.02, 1.70]	Wald	=	4.54	.03
			2*	294	-.32	.20	.72	[.49, 1.07]	Wald	=	2.67	.10
Mentioned family member (not child/grandchild) in prior evening description	97	Yes/No	1	701	.25	.10	1.28	[1.06, 1.56]	Wald	=	6.41	.01
			2	681	.22	.12	1.25	[.98, 1.59]	Wald	=	3.25	.07
Kin care child												
Become the parent of a child	31	Yes/No	1	190	-.41	.21	.67	[.44, 1.00]	Wald	=	3.91	.05
			2	176	-.94	.40	.39	[.18, .85]	Wald	=	5.59	.02
Mentioned child/grandchild in prior evening description	95	Yes/No	1	306	.81	.17	2.24	[1.60, 3.14]	Wald	=	22.20	<.001
			2	294	.59	.23	1.80	[1.15, 2.82]	Wald	=	6.60	.01
Mentioned family member	49	Yes/No	1	306	.05	.16	1.05	[.76, 1.44]	Wald	=	.08	.78

(not child/grandchild) in prior evening description	2	294	-.14	.23	.87	[.55, 1.36]	Wald	=	.39	.53

Note: Bolded text indicates that the motive was a significant predictor at the zero-order level. For analyses with binary (yes/no) dependent variables, the effect size and corresponding confidence interval are reported as odds ratios. For analyses with continuous (frequency) dependent variables, the effect size and corresponding confidence interval are reported as unstandardized Betas. Model 1 includes only the listed motive as a predictor. Model 2 controls for all other motives (but not mate retention motives and kin care child, with one exception: For those analyses in which one of the two mate retention motives was the focal predictor, the other mate retention motive was included); the Big Five; age, sex, relationship status (single, in a relationship), parent status, childhood stability, childhood resources, and current resources. *this regression includes kin care child as a predictor