

Bad friends? Which friends are viewed as helping (or hindering) progress toward fundamental
goals

Jaimie Arona Krems¹, Jamie Katz², Eric Y. Aglozo², Tiffany Chin², & Douglas T. Kenrick²

¹ Dept. of Psychology, UCLA

² Dept. of Psychology, ASU

Address correspondence to jaimie.krems@ucla.edu.

Bad friends? Which friends are viewed as helping (or hindering) progress toward fundamental goals

Jaimie Arona Krems¹, Jamie Katz², Eric Y. Aglozo², Tiffany Chin², & Douglas T. Kenrick²

¹ Dept. of Psychology, UCLA

² Dept. of Psychology, ASU

Address correspondence to jaimie.krems@ucla.edu.

Abstract

Friendship is often touted for its benefits to physical and mental health, longevity, and happiness. But not all friendships are good, and even the best carry costs (e.g., opportunity costs). Across three studies with U.S. student and online community participants (N=1267), we explore how people view friendship's up- *and* downsides. Specifically, participants rated how much four different types of friends—hypothetical ideal, actual close, ambivalent, and former—helped or hindered one's progress toward fundamental life goals (e.g., self-protection, mate seeking). We find: (1) all friendships are seen as exacting costs, but (2) good (ideal and close) friendships are characterized as providing net benefits, whereas bad (ambivalent and ended) are characterized as comparatively costly—particularly for status- and mate-seeking; (3) even bad friends are seen as facilitating certain goals; and (4) friendships terminated by friends were seen more beneficial than friendships terminated by participants. Contrary to views that friends fail to keep accounts of costs and benefits, people seem to be tracking the perceived benefits and costs that friends facilitate.

1
2
3
4 Bad friends? Which friends are viewed as helping (or hindering) progress toward fundamental
5
6 goals
7
8

9 *“Lord, protect me from my friends; I can handle my enemies.”* —Voltaire
10

11 Friendships are typically touted as a panacea for loneliness, a cornerstone of wellbeing, a
12 basic need, and a fundamental good. Indeed, social scientists have convincingly documented the
13 toll of loneliness and isolation—from cardiovascular disease to premature death (Holt-Lunstad et
14 al., 2010; Krems & Kaufman, 2026). But even good friendships have costs.
15
16
17
18
19
20

21 In fact, some of the most generative friendships were also fraught with conflict and
22 ambivalence: Van Gogh and Gauguin, Kahneman and Tversky, Lennon and McCartney, Jobs
23 and Wozniak—each pair yielded extraordinary collaborative output, but not without volatility,
24 pain, and occasional feelings of betrayal. Indeed, there are various ways in which friends can
25 hurt us, burden us, and exploit our trust; they can drag us into their quarrels, pass along their
26 illnesses, and push us toward antisocial acts; they can compete with us—over grades, jobs, other
27 friends, or romantic partners—and they can ask for help and then disappear when we are in need
28 (Bagwell & Bukowski, 2018; Krems et al., under review; Pillemer & Rothbard, 2018; Rose et
29 al., 2007; Shaw et al., 2017).
30
31
32
33
34
35
36
37
38
39
40
41
42

43 Thus, to understand friendship only by its upsides is to misunderstand it. The aims of this
44 paper are not to dispute the value of friendship, but (a) to give a more complete accounting of its
45 psychology—one cognizant of these possible costs. Additionally, (b) we aim to redress the
46 inattention paid to the inherent downsides of these often-overlooked relationships, as, compared
47 to romantic and family bonds, friendships remain chronically understudied in psychology and
48 anthropology alike (Chopik, 2017; Hruschka, 2010)—with even less attention paid to the
49 potential costs of friendships (Kim et al., 2023; Krems et al., under review). We consider those
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

costs, as well as benefits, within the framework of evolved fundamental motivations (Becker et al., 2026; Kenrick et al., 2010).

Across three studies, we ask: (1) How do people see their friends as helping or hindering progress toward universal motivations (e.g., avoiding disease, acquiring romantic partners)? (2) Are *different kinds of friends*—hypothetical ideal, actual close, ambivalent (whom we wish we could drop), and former friends—viewed as carrying different costs and benefits? In this process, we explore the broader question of (3) What perceived cost-benefit profiles differentiate good friends from bad ones?

The Benefits—and Costs—of Friendship

Friendships are medium- to long-term bonds, characterized by mutual support, partiality, and affection (Hruschka, 2010). Several accounts also explicitly note that friendships do not involve a keeping of accounts (Fiske, 1992, Silk, 2003). In addition to descriptions of what characterizes friendship (e.g., Ayers et al., 2023, 2024; Williams et al., 2022), adaptationist theorizing suggests that friends function as social insurance, helping one another survive inevitable times of illness, injury, and other hardships often via proffering material, social, and or emotional support (DeScioli & Kurzban, 2009; Tooby & Cosmides, 1996). This is true across cultures. Among Ju/'hoansi foragers in the Kalahari, friends help one another survive lean seasons; Yanomamö men in Venezuela rely on friends in violent communal clashes; Lepcha farmers in Nepal provide childrearing support (Hruschka, 2010). Notably, people sometimes help friends even more than kin—despite the fact that, from an evolutionary standpoint, helping kin often comes at a lower fitness cost (Cialdini et al., 1997; Stewart-Williams, 2007; but see Barclay, under review).

1
2
3
4 In addition to friends' functionality, a robust body of research has confirmed what most
5
6 people intuit: friends are, in general, good for our health and wellbeing. Having friends is
7
8 associated with better mental and physical health, longer life, and greater economic mobility
9
10 (Chetty et al., 2022; Dunbar, 2025; Krems & Kaufman, 2026). One widely cited meta-analysis
11
12 concluded that lacking social support is as harmful to longevity as smoking fifteen cigarettes a
13
14 day (Holt-Lunstad et al., 2010)—a finding that led Dunbar (2018) to call friends the second-best
15
16 thing for your health after quitting smoking. This is not to say that scholars who tout friendship's
17
18 benefits are unaware of its costs.
19
20
21
22

23 But what about friendship's costs? Empirical attention to friendship's liabilities has
24
25 lagged behind the fascination with its benefits (Kim et al., 2023; Krems et al., under review). Yet
26
27 friendships can impose substantial, even life-altering costs. Friends can nudge one another
28
29 toward risk-prone or self-destructive behaviors: binge drinking, reckless driving, substance abuse
30
31 (Glaser et al., 2010). They can spread illness—colds, flus, even obesity and depression via
32
33 emotional contagion and physical proximity (Christakis & Fowler, 2007; Rose et al., 2007). The
34
35 very features that often make people compatible friends—shared values, overlapping tastes,
36
37 similar demographics and life trajectories—can set the stage for interpersonal rivalry, such that
38
39 friendships can compete with us—for other friends, for reputational capital, for romantic
40
41 partners. Friends can also interfere with our successes—not only out of malice, but through
42
43 causing distraction, dependency, or quiet resentment (Barakzai & Shaw, 2018; Benenson &
44
45 Schinazi, 2004; Jia et al., 2021; Pillemer & Rothbard, 2018).
46
47
48
49
50
51
52

53 **Overview**

54
55 Here, we explore the perceived costs and benefits of friends, taking a taxonomic
56
57 approach that considers these affordances across a largely comprehensive set of domains of
58
59
60
61
62
63
64
65

everyday life. Those domains—the *fundamental motives*—are based on evolutionary life history theory and reflect the major recurrent challenges that humans needed to solve to achieve positive fitness outcomes (cf. Kenrick et al., 2010; Schaller et al., 2017). Specifically, humans have recurrently needed to allocate resources to: basic survival (e.g., quenching hunger and thirst), self-protection (e.g., staying safe from threats posed by other people), disease avoidance (e.g., staying healthful, avoiding disease), affiliation (e.g., making, keeping friends), status seeking (e.g., gaining dominance, prestige), mate acquisition (e.g., finding partners), mate retention (e.g., keeping partners), and parenting/kin care (e.g., protecting offspring). The present studies examine how people perceive various friends as helping and hindering us in meeting these goals (cf. Ko et al., 2020; Krems et al., 2017; Pick et al., 2022).

Additionally, we (2) compare the perceived costs and benefits of friendship across four different types of friends: hypothetical ideal, actual closest, ambivalent, and former. Hypothetical ideal friends have been explored in past work partly as a benchmark, allowing researchers to see where actual friends falls short (e.g., Hall, 2012). Here, close friendships might reveal the deficits of ambivalent friends, which might, in turn, offer insight into why some friendships ultimately dissolve. One might presume that ideal friends are maximally beneficial and minimally costly, but little work has addressed this, and it is possible that our mental models of friendship allow for the possibility that friendships inherently involve costs as well as benefits.

There are also open questions about both the costs and the benefits of ambivalent friends, with whom we might be at once close with but also frustrated by (Bushman & Holt-Lunstad, 2009; Lepore, 1992). Although some data suggest that friendships that feel too one-sided are often terminated (e.g., Winn et al., 1991), it remains unclear whether such one-sided friendship-

dissolving arose primarily due to an absence of benefits, the accumulation of excessive costs, or some interaction between the two.

Studies 1, 2 and 3

We conducted three studies assessing how different types of friends are perceived to help or hinder the pursuit of fundamental social goals. Across studies, participants: (a) evaluated four types of friendships—ideal friends, close friends, ambivalent friends, and former friends—allowing us to compare distinct categories and degrees of friendship, and (b) made these evaluations on each of different fundamental motives. Studies 1 and 2 used complementary samples—a convenience sample of young adults and a more age-diverse community sample—and asked participants to report where these different friends fell between helping and hindering on each motive. Study 3 disambiguated helping from hindering, using two separate scales for helping and hindering (versus a single bipolar one) in a larger sample of community adults, allowing us to further explore gender differences and differences in former friendships as a function of whether they were terminated by the participant or the participant’s friend.

All studies were approved by the IRB. All studies were preregistered, and all data and materials can be accessed on Open Science Framework (OSF). Although some expectations were preregistered (e.g., that people would deem ideal friends more helpful than actual close friends, close friends more helpful than ambivalent, and ambivalent more helpful than former), we note that this work began as exploratory.

Methods

Study 1 Participants

Two hundred and thirteen undergraduates from a university in the Southwestern United States were recruited to begin the study. In both Studies 1 and 2, we removed participants for

reporting unacceptable ages (e.g., 10, 99), completing <40% of items, or selecting the same response option throughout the survey. This left a sample of 210 participants completing focal measures (118 female, 13 missing/preferred not to respond; $M_{age}=18.68$, $SD_{age}=1.10$; 45.5% White, 17.8% Hispanic, 14.6% East Asian, 8.0% South Asian, 6.6% African American, 4.7% Middle Eastern, 2.3% other ethnicity, 0.5% Native American.

This study was preregistered:

<https://osf.io/73ch6?revisionId=6737881cd1d5e2a606eb5557>.

For Studies 1 and 2, an a priori power analysis was performed using G*Power to estimate the required sample size for a repeated-measures study with four conditions. Based on a small effect size ($f = 0.10$), a significance level of $\alpha = .05$, and 90% power, indicated a required sample size of 179. We conservatively specified a small effect size ($f = 0.10$) to ensure sufficient sensitivity to detect theoretically meaningful but potentially small effects.

Study 2 Participants

A total of 244 U.S. participants were recruited from CloudResearch, with 218 (107 female, 7 missing/preferred not to respond; $M_{age}=41.83$, $SD_{age}=11.50$; 80.7% White, 7.8% Black/African American, 4.6% East Asian, 2.3% Hispanic/Latino(a), 0.5% South Asian/Indian, 0.9% Native American, 0.5% other ethnicity. This study was preregistered:

<https://osf.io/73ch6?revisionId=678ac944b0e8d867a034e67c>.

Study 3 Participants

We recruited a larger sample of 1031 U.S. adult participants from CloudResearch based on available funds. Of those, 824 passed attention checks (452 female; $M_{age}=42.9$, $SD_{age}=12.69$; 79.1% were White, 6% Black/African American, 5% East Asian, 5% Hispanic/Latino(a)) and were included in analyses. This study was preregistered:

<https://osf.io/73ch6>. A minimum sample of 184 was calculated using G*Power for a repeated measures study with eight conditions at 90% power to detect a small effect ($f = 0.10$) when $\alpha = .05$. We recruited a substantially larger sample to enable additional exploratory analyses, including subgroup comparisons (e.g., gender, who terminated the former friendship).

Procedure

Across studies, participants underwent similar procedures. First, participants completed questions about how each of the four friend types would/did affect participants' achievement of fundamental goals during that friendship. Friend types—corresponding to a (1) a hypothetical ideal best friendship, (2) an actual close friendship, (3) an ambivalent friendship, described as “a current close friendship—but one that you sometimes wish would end”, and (4) a former friend, described as “a close friendship that *either you or your friend* purposefully ended” (italics original)—were presented in randomized order. We purposefully kept this latter category open—asking about a former friend rather than, say, a current enemy—to capture the range of former friends that one might have (e.g., friends one wants back, friends who are now enemies, friends one feels neutral toward after non-contact). For each of the three real-world friend type (close, ambivalent, former), participants provided the actual target friend's initials, which were displayed in subsequent items to personalize responses and aid recall (Krems et al., 2021, 2022).

For some friend types, participants completed additional questions about their friendships before moving on to focal items. For example, for the former friendships, participants were asked how long ago the friendship ended, how long the friendship had lasted, and who ended it. For both the friendship participants wished to end and the former friendship, participants were additionally asked to respond to open-ended questions (e.g., as to why the participant does not end the ambivalent friendship). These data were not analyzed.

Participants indicated how much each friend helped or hindered one's achievement of fundamental goals on a series of sliders. Goals were described as: *Basic survival* (meeting your basic physiological needs such as obtaining food, water, shelter from the elements, and avoiding accidents); *Self-protection* (keeping you safe from other people who might physically harm you or take things from you); *Avoiding disease* (keeping healthy, avoiding illnesses); *Affiliation* (finding, making, or maintaining other friendly relationships); *Status-seeking* (pursuing prestige and/or dominance, being well-regarded by your peers); *Mate acquisition* (finding someone to have a romantic or sexual relationship with); *Mate retention* (maintaining a romantic relationship with your partner, holding on to your romantic partner); and *Kin care* (taking care of your own children [or nieces, nephews, or other relatives], spending time with family). Study 1 did not include Affiliation due to an oversight; Studies 2 and 3 included all eight goals. Goals were presented in randomized order.

For Studies 1 and 2, measures were obtained using single bipolar sliders ranging from 0 (hinder) to +50 (help)—using one slider for each motive. For Study 3, we disambiguated this scale to look at helping and hindering separately, with helping and hindering each rated on 0 (Does not help/Does not hinder) to +50 (Helps a lot/Hinders a lot) sliders for each motive. To make more direct comparisons with data from Studies 1 and 2, we created a composite help/hinder score by subtracting participants' hinder from help ratings. Positive scores indicate that the friendship helped in achieving fundamental social goals, whereas negative scores indicate that the friendship hindered those goals.

Finally, participants completed common demographic questions (e.g., age, gender). No specific gender differences were predicted a priori, but we explore and describe these differences in Table 3. We also return to this point in the Discussion.

Results

Not All Friends Are Seen as Providing Net Benefits

For Study 1, we conducted a 4 [Friend type] x 7 [Motives] within-subjects Analysis of Variance (ANOVA), and for Studies 2 and 3, we conducted a 4 [Friend type] x 8 [Motives] ANOVA. For Study 3, we conducted this ANOVA on difference scores (how much the friend helps minus hinders achievement of each motive) in addition to analyzing the helping and hindering scores separately, reported below. To control for potential Type 1 errors stemming from multiple comparisons, we applied a Benjamini-Hochberg procedure across all three studies, which mitigates the false discovery rate when conducting multiple hypothesis tests. See Tables 1-3 for means and standard deviations, comparisons across friend types, and one-sample *t*-tests (comparing each score to 0 for each motive); see Figure 1.

First, we find that not all friends are perceived as equally beneficial. When aggregating across motives, ideal friends were deemed significantly more beneficial ($M_{Study1}=30.97$, $SD_{Study1}=15.48$; $M_{Study2}=20.56$, $SD_{Study2}=13.97$; $M_{Study3}=22.87$, $SD_{Study3}=14.64$) than close friends ($M_{Study1}=22.73$, $SD_{Study1}=18.60$; $M_{DifferenceStudy1}=8.24$, $p<.001$; $M_{Study2}=15.00$, $SD_{Study2}=13.36$; $M_{DifferenceStudy2}=5.56$, $p<.001$; $M_{Study3}=16.36$, $SD_{Study3}=13.78$; $p=.001$), ambivalent friends ($M_{Study1}=-0.90$, $SD_{Study1}=16.00$; $M_{DifferenceStudy1}=31.87$, $p<.001$; $M_{Study2}=0.63$, $SD_{Study2}=17.01$; $M_{DifferenceStudy2}=19.93$, $p<.001$; $M_{Study3}=0.63$, $SD_{Study3}=12.92$; $M_{DifferenceStudy3}=22.25$, $p<.001$), and former friends ($M_{Study1}=1.94$, $SD_{Study1}=15.96$; $M_{DifferenceStudy1}=29.03$, $p<.001$; $M_{Study2}=0.97$, $SD_{Study2}=17.51$; $M_{DifferenceStudy2}=19.59$, $p<.001$; $M_{Study3}=-1.14$, $SD_{Study3}=14.93$; $M_{DifferenceStudy3}=24.02$, $p<.001$). Close friends were deemed significantly more beneficial than ambivalent friends ($M_{DifferenceStudy1}=23.63$; $M_{DifferenceStudy2}=14.37$; $M_{DifferenceStudy3}=15.73$; all $ps<.001$) and former friends ($M_{DifferenceStudy1}=20.79$; $M_{DifferenceStudy2}=14.03$; $M_{DifferenceStudy3}=17.50$;

all $ps < .001$). Ambivalent and former friends did not significantly differ in Studies 1 and 2 ($ps > .585$), but ambivalent friends ($M = .627, SD = 12.86$) were deemed significantly more beneficial than former friends ($M = -1.14, SD = 14.78$; $M_{DifferenceStudy3} = 1.77, p = .003$) in Study 3.

When examining these same ratings motive-by-motive, we find a similar pattern: For every motive, ideal friends were deemed significantly more beneficial than any other type of friend ($ps < .007$)—but this did not reach significance in comparison to closest friends for basic survival ($M_{Difference} = 5.75, p = .069$) and mate acquisition ($M_{Difference} = 6.19, p = .064$) in Study 1, and for basic survival ($M_{Difference} = 5.05, p = .056$) and disease avoidance ($M_{Difference} = 2.76, p = .928$) in Study 2. Close friends, in turn, were deemed to provide significantly greater benefits than both ambivalent and former friends ($ps < .001$). Ambivalent and former friends did not differ significantly—except in Study 1, wherein former friends were deemed to provide significantly more benefits for both disease avoidance ($M_{Difference} = 7.34, p = .019$) and self-protection motives ($M_{Difference} = 6.83, p = .044$) than ambivalent friends.

Study 3 (Separate Benefits and Costs). For Study 3, we were additionally able to examine participants' separate helping and hindering ratings. To do this, we conducted a 4[friend types] x 8[motives] x 2[helping/hindering] ANOVA. See Table 4 for means, standard deviations, and t -tests comparing each mean to zero (providing no significant helping or hindering), and

Figure 2.

Table 1
Means and Standard Deviations Across All Friend Types and All Motives

Friend Type	Study	Fundamental Social Motives								
		Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Mate Acquisition	Mate Retention	Kin Care	Affiliation	Total
Ideal	Study 1	32.80 (17.39)	36.10 (16.87)	30.26 (18.72)	31.98 (18.47)	29.08 (19.31)	30.25 (19.23)	30.97 (18.77)	—	224.27 (100.40)
	Study 2	22.24 (19.06)	24.54 (18.24)	19.37 (19.68)	18.16 (18.66)	15.06 (21.65)	17.08 (20.57)	21.62 (18.36)	25.89 (17.28)	163.97 (111.83)
	Study 3	23.49 (17.92)	26.29 (18.00)	23.91 (17.69)	19.88 (18.16)	19.45 (18.55)	22.18 (18.38)	22.98 (17.77)	24.30 (18.07)	182.80 (115.46)
Close	Study 1	27.52 (21.18)	26.61 (21.56)	21.50 (20.44)	24.85 (19.60)	23.14 (21.34)	22.66 (21.73)	19.69 (22.08)	—	166.37 (123.18)
	Study 2	17.19 (19.95)	19.04 (18.30)	16.62 (18.95)	12.42 (19.15)	8.70 (21.74)	11.35 (20.20)	15.18 (18.67)	19.23 (18.02)	119.71 (107.01)
	Study 3	18.69 (18.59)	20.68 (18.41)	17.60 (18.45)	15.19 (16.97)	9.54 (18.60)	14.23 (19.43)	17.01 (19.14)	17.21 (19.29)	130.28 (109.93)
Ambivalent	Study 1	7.24 (21.70)	4.53 (22.58)	-1.99 (20.07)	-0.92 (21.04)	-2.61 (23.19)	-4.35 (22.38)	0.16 (19.74)	—	-3.25 (110.60)
	Study 2	2.90 (21.37)	4.21 (21.23)	1.57 (21.38)	-1.68 (22.57)	-2.15 (22.19)	-1.76 (21.89)	0.68 (21.93)	1.17 (22.77)	4.56 (135.39)
	Study 3	3.61 (16.69)	3.23 (18.32)	2.63 (17.41)	-1.27 (18.30)	-3.79 (16.95)	-2.70 (17.01)	1.85 (17.56)	1.44 (19.44)	4.75 (102.21)
Former	Study 1	9.03 (22.65)	8.92 (22.98)	5.40 (20.90)	-0.42 (23.93)	-2.02 (26.52)	-6.95 (25.83)	-1.02 (21.43)	—	14.46 (107.83)
	Study 2	5.68 (20.16)	3.09 (22.43)	2.16 (20.33)	-1.76 (23.29)	-0.61 (23.49)	-2.26 (22.28)	-0.07 (20.88)	0.74 (24.07)	6.95 (139.49)
	Study 3	2.11 (18.59)	0.76 (20.64)	1.13 (19.25)	-2.04 (20.49)	-4.02 (20.18)	-5.76 (20.33)	-0.86 (18.20)	-0.55 (21.49)	-9.23 (117.36)

Note. Values are Mean (SD). For Study 3, difference scores were used (reported benefits minus reported costs). An em dash (—) indicates the metric was not available in Study 1.

Table 2
One Sample t-test Scores Across Studies

		Fundamental Motives								
Friend Types	Study	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Mate Acquisition	Mate Retention	Kin Care	Affiliation	Total
Ideal										
	Study 1	26.67(<i>p</i> <.001)	30.43(<i>p</i> <.001)	22.69(<i>p</i> <.001)	24.40(<i>p</i> <.001)	21.46(<i>p</i> <.001)	22.36(<i>p</i> <.001)	23.57(<i>p</i> <.001)	—	30.38(<i>p</i> <.001)
	Study 2	17.14(<i>p</i> <.001)	19.78(<i>p</i> <.001)	14.47(<i>p</i> <.001)	14.31(<i>p</i> <.001)	10.22(<i>p</i> <.001)	12.21(<i>p</i> <.001)	17.30(<i>p</i> <.001)	22.02(<i>p</i> <.001)	21.55(<i>p</i> <.001)
	Study 3	37.63(<i>p</i> <.001)	41.92(<i>p</i> <.001)	38.79(<i>p</i> <.001)	31.42(<i>p</i> <.001)	30.10(<i>p</i> <.001)	34.62(<i>p</i> <.001)	37.10(<i>p</i> <.001)	38.60(<i>p</i> <.001)	45.39 <i>p</i> <.001)
Close										
	Study 1	18.10(<i>p</i> <.001)	17.33(<i>p</i> <.001)	14.54(<i>p</i> <.001)	17.70(<i>p</i> <.001)	15.18(<i>p</i> <.001)	14.41(<i>p</i> <.001)	12.17(<i>p</i> <.001)	—	17.40(<i>p</i> <.001)
	Study 2	12.66(<i>p</i> <.001)	15.29(<i>p</i> <.001)	12.89(<i>p</i> <.001)	9.53(<i>p</i> <.001)	5.88(<i>p</i> <.001)	8.26(<i>p</i> <.001)	11.95(<i>p</i> <.001)	15.68(<i>p</i> <.001)	16.44(<i>p</i> <.001)
	Study 3	28.86(<i>p</i> <.001)	32.25(<i>p</i> <.001)	27.39(<i>p</i> <.001)	25.70(<i>p</i> <.001)	14.72(<i>p</i> <.001)	21.03(<i>p</i> <.001)	25.51(<i>p</i> <.001)	25.61(<i>p</i> <.001)	34.00(<i>p</i> <.001)
Ambivalent										
	Study 1	4.30(<i>p</i> <.001)	2.66(<i>p</i> = .009)	−1.29(<i>p</i> = .198)	−0.59(<i>p</i> = .556)	−1.52(<i>p</i> = .131)	−2.54(<i>p</i> = .012)	0.11(<i>p</i> = .916)	—	−0.35(<i>p</i> =.731)
	Study 2	1.98(<i>p</i> = .049) [†]	2.91(<i>p</i> = .004)	1.08(<i>p</i> = .284)	−1.09(<i>p</i> = .278)	−1.42(<i>p</i> = .156)	−1.18(<i>p</i> = .239)	0.45(<i>p</i> = .650)	0.76(<i>p</i> = .451)	.49(<i>p</i> = .624)
	Study 3	6.20(<i>p</i> <.001)	5.06(<i>p</i> <.001)	4.33(<i>p</i> <.001)	−1.98(<i>p</i> = .048) [†]	−6.41(<i>p</i> <.001)	−4.56(<i>p</i> <.001)	3.02(<i>p</i> = .003)	2.12(<i>p</i> = .034)	1.33(<i>p</i> =.184)
Former										
	Study 1	5.29(<i>p</i> <.001)	5.25(<i>p</i> <.001)	3.57(<i>p</i> <.001)	−0.24(<i>p</i> = .808)	−1.06(<i>p</i> = .289)	−3.67(<i>p</i> <.001)	−0.61(<i>p</i> = .542)	—	1.58(<i>p</i> =.117)
	Study 2	4.14(<i>p</i> <.001)	2.02(<i>p</i> = .044) [†]	1.56(<i>p</i> = .120)	−1.11(<i>p</i> = .267)	−0.38(<i>p</i> = .705)	−1.49(<i>p</i> = .137)	−0.05(<i>p</i> = .961)	0.45(<i>p</i> = .654)	.733(<i>p</i> =.465)
	Study 3	3.26(<i>p</i> = .001)	1.06(<i>p</i> = .292)	1.69(<i>p</i> = .091)	−2.86 (<i>p</i> = .004)	−5.71(<i>p</i> <.001)	−8.13(<i>p</i> <.001)	−1.35(<i>p</i> = .177)	−.73(<i>p</i> = .463)	−2.26(<i>p</i> =.024)

Note. Values are *t*-score (p-value). *t*-tests compared each mean score to zero. Colored cells highlight significant negative scores (indicating that friends exacted more costs than benefits). Bold font indicates statistical significance. [†] indicates that the *p* value did not meet the adjusted significance threshold, even though it met the conventional .05 threshold. For Study 3, difference scores were used (reported benefits minus reported costs). Study 1 did not collect information about affiliation goals. An em dash (—) indicates the metric was not available in Study 1.

Table 3
Comparing Means Across Friend Types

Study 1

Motive	Ideal	Close	Ambivalent	Former
<i>Basic Survival</i>	33.21 (17.37)	27.46 (21.76)	5.78 (22.42)	7.94 (23.81)
<i>Self-Protection</i>	36.92 (15.97)	26.55 (21.94)	2.78 (23.01)	9.61 (23.92)
<i>Disease Avoidance</i>	30.75 (18.66)	21.45 (21.16)	-1.53 (20.90)	5.81 (21.73)
<i>Status Seeking</i>	32.22 (17.79)	25.07 (20.22)	-0.86 (20.72)	0.91 (24.00)
<i>Mate Acquisition</i>	29.38 (19.57)	23.20 (22.37)	-4.09 (23.41)	-1.42 (25.55)
<i>Mate Retention</i>	30.49 (19.43)	22.51 (22.37)	-5.12 (21.78)	-7.39 (25.51)
<i>Kin care</i>	31.30 (18.88)	20.14 (22.80)	-0.22 (19.81)	-0.99 (22.18)

Study 2

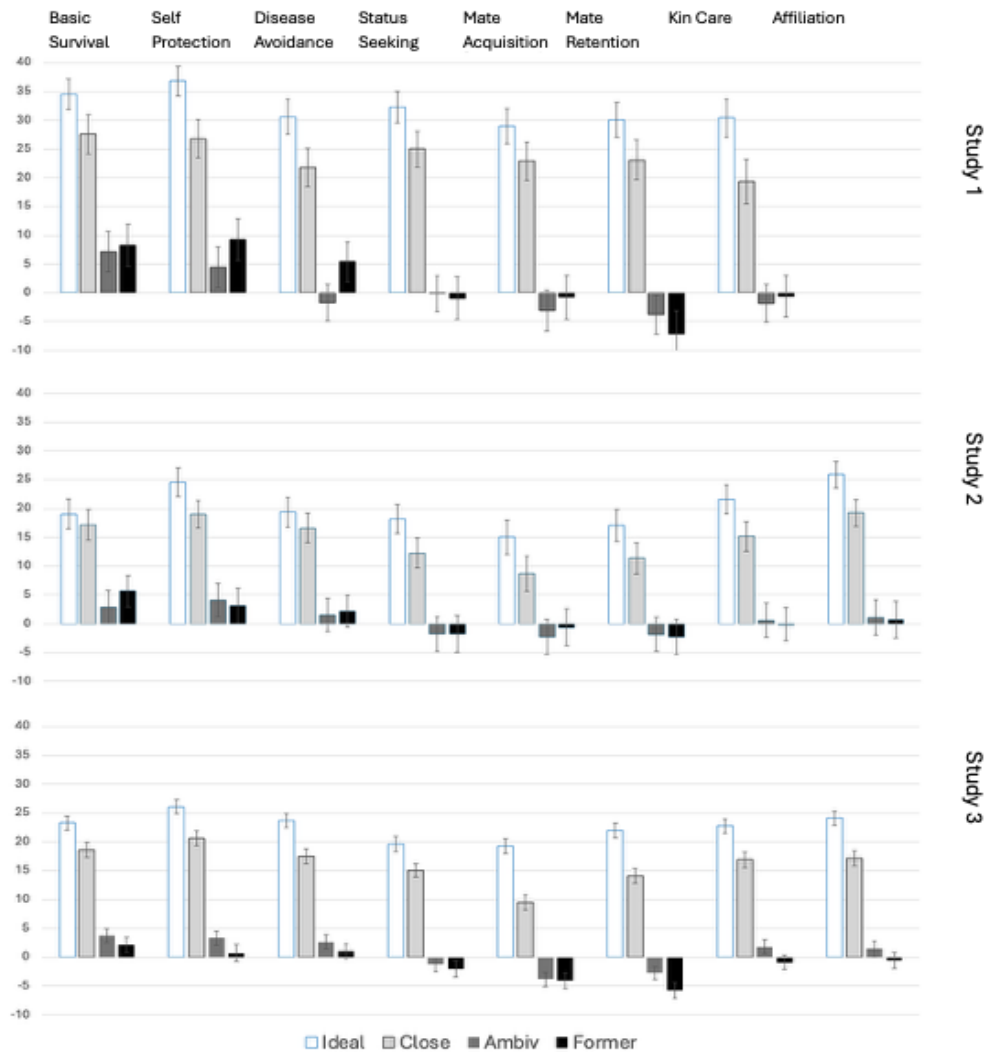
Motive	Ideal	Close	Ambivalent	Former
<i>Basic Survival</i>	22.24 (19.06)	17.19 (19.95)	2.90 (21.37)	5.68 (20.16)
<i>Self-Protection</i>	24.54 (18.24)	19.04 (18.30)	4.21 (21.23)	3.09 (22.43)
<i>Disease Avoidance</i>	19.37 (19.68)	16.62 (18.95)	1.57 (21.38)	2.16 (20.33)
<i>Status Seeking</i>	18.16 (18.66)	12.42 (19.15)	-1.68 (22.57)	-1.76 (23.29)
<i>Mate Acquisition</i>	15.06 (21.65)	8.70 (21.74)	-2.15 (22.19)	-0.61 (23.49)
<i>Mate Retention</i>	17.08 (20.57)	11.35 (20.20)	-1.76 (21.89)	-2.26 (22.28)
<i>Kin care</i>	21.62 (18.36)	15.18 (18.67)	0.68 (21.93)	-0.07 (20.88)
<i>Affiliation</i>	25.89 (17.28)	19.23 (18.02)	1.17 (22.77)	0.74 (24.07)

Study 3

Motive	Ideal	Close	Ambivalent	Former
<i>Basic Survival</i>	23.49 (17.92)	18.69 (18.59)	3.61 (16.69)	2.11 (18.59)
<i>Self-Protection</i>	26.29 (18.00)	20.68 (18.41)	3.23 (18.32)	0.76 (20.64)
<i>Disease Avoidance</i>	23.91 (17.69)	17.60 (18.45)	2.63 (17.41)	1.13 (19.25)
<i>Status Seeking</i>	19.88 (18.16)	15.19 (16.97)	-1.27 (18.30)	-2.04 (20.49)
<i>Mate Acquisition</i>	19.45 (18.55)	9.54 (18.60)	-3.79 (16.95)	-4.02 (20.18)
<i>Mate Retention</i>	22.18 (18.38)	14.23 (19.43)	-2.70 (17.01)	-5.76 (20.33)
<i>Kin care</i>	22.98 (17.77)	17.01 (19.14)	1.85 (17.56)	-0.86 (18.20)
<i>Affiliation</i>	24.30 (18.07)	17.21 (19.29)	1.44 (19.44)	-0.55 (21.49)

Note. Values are Mean(Standard Deviation). Colors indicate significant differences across rows ($ps < .05$). Values of the same color are not significantly different across rows.

Figure 1
Mean Scores (S1 & S2) and Difference Scores (S3) Across Motives



Note. Study 1 did not have measures for affiliation. Study 3 difference scores were calculated by subtracting the hinder from the help scores.

Table 4*Study 3 Means (and Standard Deviations) of Helping Scores by Friend Type*

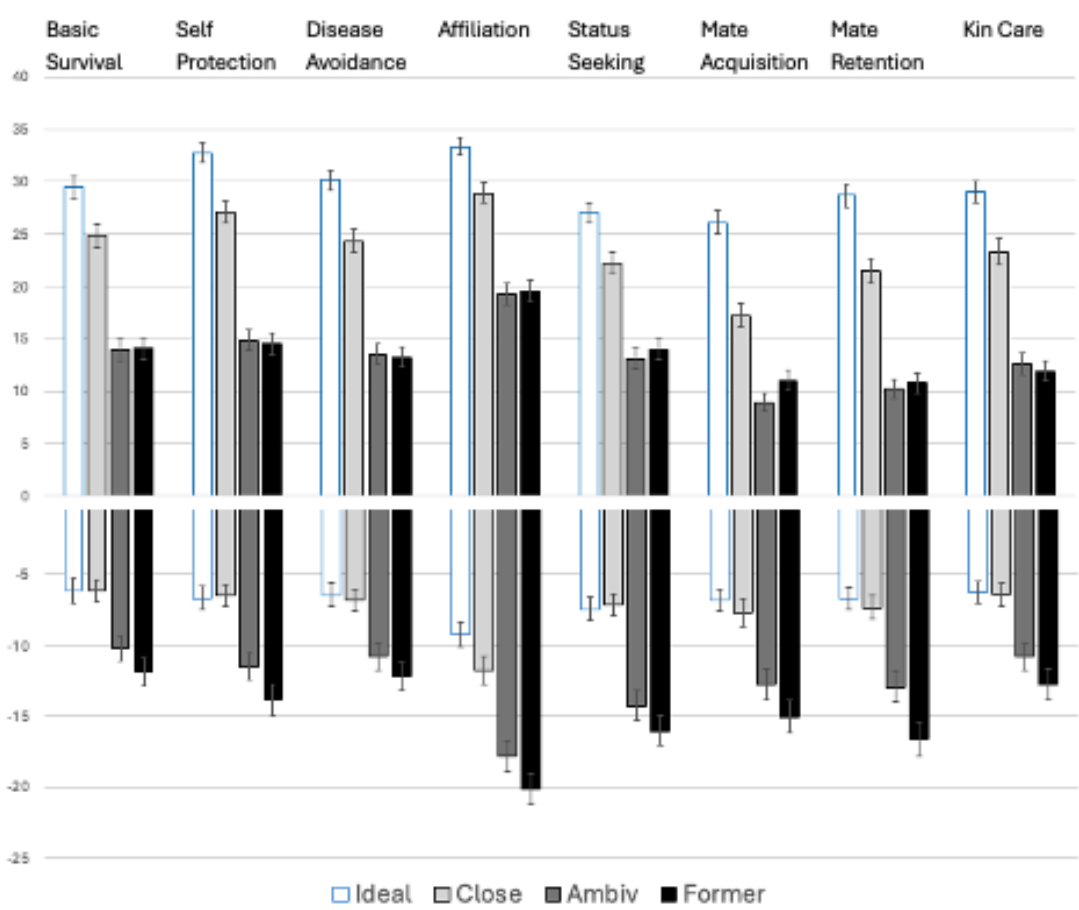
Helping Fundamental Motives									
<i>Friend Type</i>	<i>Basic Survival</i>	<i>Self-Protection</i>	<i>Disease Avoidance</i>	<i>Affiliation</i>	<i>Status Seeking</i>	<i>Mate Acquisition</i>	<i>Mate Retention</i>	<i>Kin Care</i>	<i>Total</i>
Ideal	29.63 (14.75)	32.91 (13.89)	30.33 (14.32)	33.41 (11.76)	27.30 (13.92)	26.24 (16.11)	28.84 (15.32)	29.20 (14.73)	237.85 (87.63)
Close	24.92 (17.07)	27.22 (16.05)	24.47 (16.13)	29.02 (14.04)	22.39 (14.88)	17.29 (16.63)	21.65 (16.99)	23.48 (17.30)	190.59 (97.78)
Ambivalent	14.00 (14.96)	14.88 (14.82)	13.58 (14.14)	19.32 (15.12)	13.21 (13.96)	9.02 (12.76)	10.37 (13.32)	12.77 (14.79)	107.20 (88.30)
Former	14.01 (14.72)	14.63 (14.91)	13.40 (14.30)	19.57 (14.83)	14.04 (13.84)	11.07 (14.25)	10.84 (13.52)	11.95 (14.14)	109.43 (87.36)
Hindering Fundamental Motives									
<i>Friend Type</i>	<i>Basic Survival</i>	<i>Self-Protection</i>	<i>Disease Avoidance</i>	<i>Affiliation</i>	<i>Status Seeking</i>	<i>Mate Acquisition</i>	<i>Mate Retention</i>	<i>Kin Care</i>	<i>Total</i>
Ideal	6.14 (11.85)	6.62 (12.12)	6.43 (11.81)	9.11 (13.57)	7.41 (12.11)	6.79 (11.89)	6.68 (11.96)	6.22 (11.71)	55.24 (87.17)
Close	6.23 (11.40)	6.54 (11.73)	6.86 (11.64)	11.80 (15.15)	7.21 (11.64)	7.75 (12.89)	7.42 (12.57)	6.47 (11.69)	60.28 (84.67)
Ambivalent	10.41 (13.65)	11.65 (14.35)	10.93 (14.06)	17.88 (15.89)	14.45 (15.08)	12.79 (15.72)	13.08 (15.31)	10.92 (14.18)	102.14 (97.58)
Former	11.90 (14.67)	13.88 (15.72)	12.27 (14.81)	20.12 (16.38)	16.08 (15.81)	15.09 (16.66)	16.61 (17.08)	12.80 (15.34)	118.66 (101.31)

Note. Values are Mean (SD). Scores are from separate 0-50 ratings of helping and hindering behavior for 8 fundamental motives.

When comparing these mean scores to 0 in separate T-test, all p-values are <.001 after Benjamini-Hochberg corrections were applied.

Figure 2.

Study 3 Separate Help and Hinder Scores Across Motives and Friend Types



Note. Help scores are positive, and hinder scores are negative

Benefits. Echoing the Study 3 difference score results above, not all friends were perceived as equally helping. Aggregating over all motives, ideal friends were seen as offering more benefits ($M=29.78$, $SD=10.91$) than close friends ($M=23.86$, $SD=12.34$; $M_{Difference}=5.93$, $p \leq .001$), ambivalent friends ($M=13.41$, $SD=11.19$; $M_{Difference}=16.37$, $p < .001$), and former friends ($M=13.71$, $SD=10.91$; $M_{Difference}=16.08$, $p < .001$). Close friends, in turn, were seen as offering more benefits than both ambivalent friends ($M_{Difference}=10.45$, $p < .001$) and former friends ($M_{Difference}=10.15$, $p < .001$). Ambivalent and former friends did not significantly differ in benefits provided ($p=.417$).

Costs. Likewise, not all friends were perceived as equally hindering. Aggregating over all motives, ideal friends ($M=6.91$, $SD=10.91$) were seen as exacting fewer costs than close friends ($M=7.50$, $SD=10.62$) ($M_{Difference}=.59$, $p=.020$). In participants' view, ideal friends did exact significantly fewer costs than ambivalent ($M=12.78$, $SD=12.34$; $M_{Difference}=5.87$, $p < .001$) and former friends ($M=14.85$, $SD=12.63$; $M_{Difference}=7.94$, $p < .001$). Current close friends exacted fewer costs than ambivalent ($M_{Difference}=5.29$, $p < .001$) and former ($M_{Difference}=7.35$, $p < .001$). Former friends were deemed to exact greater costs than ambivalent friends ($M_{Difference}=16.68$, $p < .001$). See Figure 2, above.

Which Motives Do Friends Help or Hinder Us from Realizing?

The costs and benefits that friends were perceived to afford differed on a motive-by-motive basis—with the pattern largely consistent across friend type. (See Tables 1-2 and Figure 1, above.) Specifically, follow-up comparisons indicate that, (1) across all studies and for each type of friend, participants reported that friends tended to provide significantly greater benefits for realizing basic survival and self-protection motives versus the other motives ($ps < .001$). In fact, additional one-sample t-tests examining whether friends were viewed as proffering net

benefits or net costs (i.e., scores significantly greater or lesser than the zero-midpoint of the help-hinder scale) likewise indicated that each friend type was significantly helpful for achieving basic survival and self-protection ($ps < .050$)—excepting former friends in Study 3 ($p = .292$). See Figure 1, above.

Further, (2) each type of friend tended to provide the fewest benefits (for good friends)—or greatest costs (for bad friends)—when it came to status seeking, mate acquisition, and mate retention motives versus the others ($ps < .001$). In fact, for these three motives, those one-sample *t*-tests revealed that ambivalent and former friends tended to exact *net costs*.

The pattern of data is similar when examining Study 3's separate helping and hindering scores. See Figure 2 and Table 4, above.

Gender Differences (Studies 1-3)

Averaging across motives and friend types, the effects of participant gender on perceived costs/benefits of friendships across studies were not significant ($ps > .05$). See Tables 5-7 for means, standard deviations, and adjusted pairwise comparisons between male and female participants with Benjamini-Hochberg corrected levels of significance for multiple comparisons. However, a few small differences were indicated. There were small effects of participant gender on ratings of close friendships in Studies 1 and 3. In Studies 1 and 3, women rated their close friends as providing significantly more benefits (and fewer costs in Study 3) for basic survival and self-protection (ps all $< .05$). In Study 1, women also rated their close friends as better for mate retention ($p = .007$). In Study 3, women rated their close friends as more helpful for disease avoidance ($p = .013$) and kin care ($p = .013$). There were no significant effects of participant gender in Study 2 after adjusting for multiple comparisons.

Costs and Benefits of Former Friendships (Study 3)

Study 3's larger sample also allowed us to explore a further open question about former friendships: are friendships terminated by participants ($N=611$) viewed different than those terminated by participants' friends ($N=212$)?

Aggregating across motives, we find that, when the participant ended the friendship, it was seen as having exacted significantly more costs than when the other person ended the friendship, $F(1,821) = 5.34, p = .021, \eta^2 = .006$ 95% CI [0.000, 0.022]. If the friend ended the friendship, the friendship was seen as having brought greater benefits than when the other person ended the relationship $F(1,821)=15.29; p< .001, \eta^2 = .018, 95\% \text{ CI } [0.005, 0.040]$. See Figure 3 and Table 8.

Table 5

Gender Pairwise Comparisons with Benjamini-Hochberg Corrected Significance for Study 1

STUDY 1

Ideal Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	30.85(18.45)	31.73(19.22) **	25.96(20.44)*	29.68(21.15)	—	27.71 (21.21)	27.0(20.76)	27.21 (20.31)*
Female	34.92(16.02)	39.50 (13.91) **	33.73(16.22)*	34.23(16.03)	—	30.85 (17.30)	33.27(19.17)	34.79(16.43)*

Close Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	21.71(21.52)**	21.93(22.23)*	18.05(23.61)	22.50(19.31)	—	19.76(22.20)	17.85(21.33)**	16.21(20.90)
Female	31.42(19.06)**	30.08(20.56)*	23.61(19.87)	26.66(19.00)	—	25.56(20.40)	27.38(20.26)**	24.90(20.05)

Ambiguous Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	5.09 (22.92)	1.39 [†] (21.36)	-3.18 (20.22)	0.54 (21.71)	—	-2.82 (22.51)	-4.52 (21.25)	0.35 (17.22)
Female	9.10 (22.33)	8.12 [†] (22.53)	0.15 (20.51)	-0.45(19.60)	—	-2.19 (23.73)	-4.15 (22.13)	1.39 (19.83)

Former Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	8.34 (20.60)	8.88 (19.64)	6.68 (21.91)	6.89(22.13)**	—	2.71 (26.83)	-2.55(23.96)	1.29(19.42)
Female	9.08(23.64)	10.53(24.26)	4.15 (21.08)	-5.29(24.09)**	—	-4.51 (26.95)	-11.11(26.52)	-5.67 [†] (25.18)

Table 6

Gender Pairwise Comparisons with Benjamini-Hochberg Corrected Significance for Study 2

STUDY 2

Ideal Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	23.13(19.47)	22.52(18.82)	19.03 (19.23)	19.56(18.51)	27.02(17.14)	18.17(20.78)	18.84(20.92)	21.17(19.91)
Female	20.68(18.56)	25.90(17.65)	20.18(19.60)	17.54(18.26)	25.30(17.77)	12.31 (22.28)	15.31(20.16)	22.34(16.95)

Close Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	16.14(19.89)	16.21(17.63)	15.64(18.23)	12.73(19.16)	20.10(16.70)	10.11(21.43)	10.74(19.59)	14.31(18.75)
Female	18.71(20.05)	22.21(18.26)	18.13 (19.40)	12.58(18.93)	19.52(18.29)	6.77 (22.19)	11.42(21.14)	16.15(18.77)

Ambiguous Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	3.87 (21.19)	5.58 (20.82)	0.63 (22.43)	1.07(23.72)	1.89(23.23)	-0.84 (23.65)	-0.27 (22.07)	3.03(21.31)
Female	2.15(22.07)	3.02 (22.06)	2.72 (20.25)	-4.03 (21.23)	0.56(22.70)	-3.71 (21.30)	-3.42(22.27)	-1.41(22.82)

Former Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Male	6.59(21.08)	6.40 (22.23)	3.66 (21.83)	1.46 (22.88)	3.64(24.39)	-1.14 (24.70)	-1.03 (22.08)	2.47(19.77)
Female	4.48 (19.73)	-0.25 (22.22)	0.71 (18.92)	-4.63(23.42)	-1.18(23.48)	0.01 (22.70)	-2.90 (22.57)	-2.27(21.89)

Table 7

Gender Pairwise Comparisons with Benjamini-Hochberg Corrected Significance for Study 3

STUDY 3

Ideal Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Helping								
Male	28.98(14.55)	30.30(14.08)*	28.65(14.46)*	28.44(13.25)	33.50(11.03)	28.14(15.18)*	29.72(14.35)	27.50(14.51)*
Female	30.20(14.85)	35.04(13.31)*	31.77(14.04)*	26.48(14.31)	33.44(12.29)	24.83(16.66)*	28.28(15.98)	30.69 (14.74)*
Hindering								
Male	7.07 (12.47)	7.28 (12.33)	7.43 (12.62)	7.76 (12.04)	8.96 (13.15)	7.40 (11.96)	7.50 (12.28)	6.89 (12.19)
Female	5.38 (11.30)	6.03 (11.96)	5.61 (11.11)	7.09 (12.09)	9.13 (13.92)	6.26 (11.76)	6.02 (11.67)	5.72 (11.35)

Close Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Helping								
Male	23.00(16.04)*	24.43(14.95)*	21.61(15.85)*	22.93(13.99)	29.18(12.77)	17.58(15.28)	20.32(15.67)	19.99 (16.22)*
Female	26.55(17.75)*	29.61(16.53)*	26.83(16.05)*	22.02(15.58)	29.00(14.98)	17.18(17.71)	22.82(17.92)	26.43 (17.63)*
Hindering								
Male	7.62 (12.17)*	7.89 (12.56)*	8.06 (12.30)*	8.53(12.26)*	11.30(14.29)	8.86 (13.26)	8.37 (12.87)	7.39 (12.05)
Female	5.01 (10.53)*	5.34 (10.80)*	5.80 (10.94)*	6.11(11.01)*	12.13(15.84)	6.76 (12.43)	6.67 (12.31)	5.66 (11.35)

Ambiguous Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care

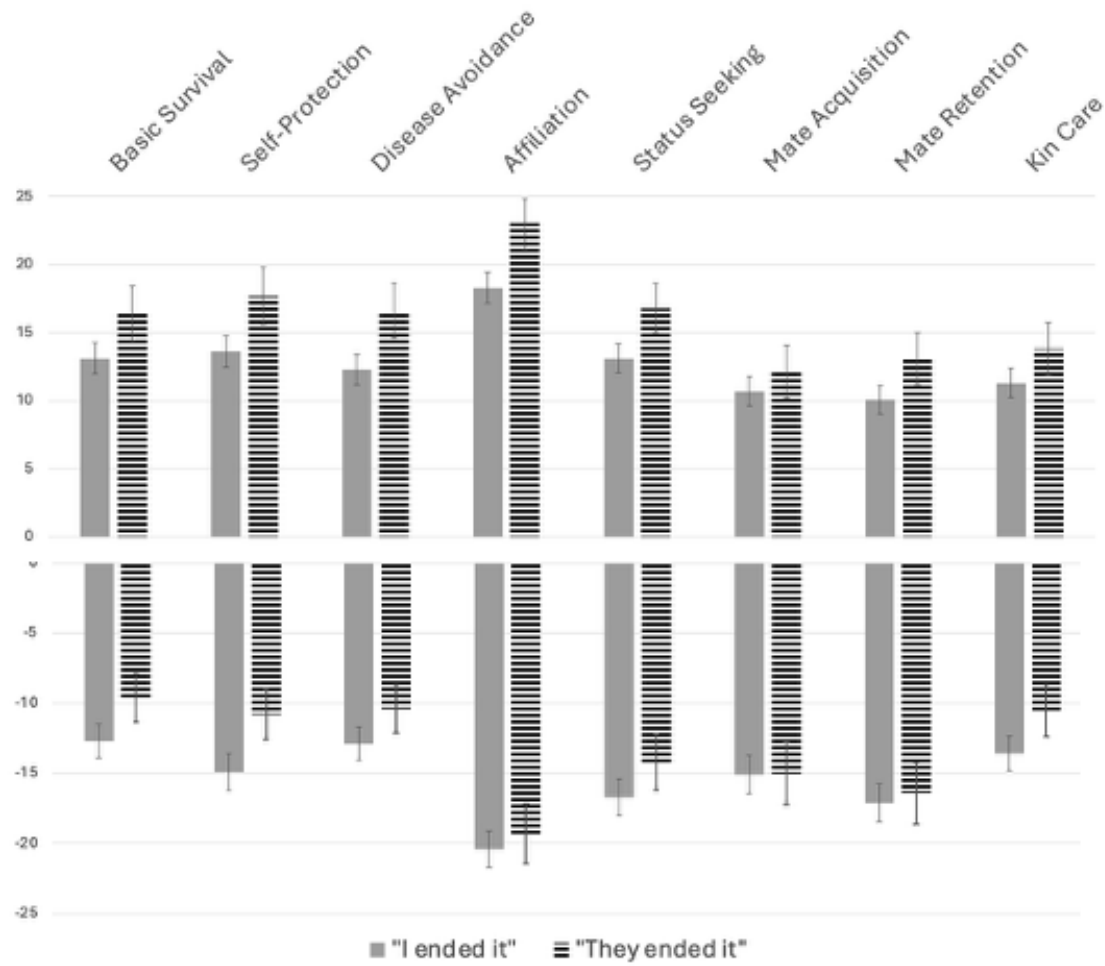
Helping								
Male	14.09(14.61)	13.87(14.12)	13.73 (14.08)	14.35(13.87)	19.42(14.61)	9.90 (12.75)	10.78(13.38)	12.27 (14.27)
Female	13.91 (15.23)	15.68 (15.31)	13.46 (14.17)	12.33 (13.98)	19.30(15.52)	8.43 (12.81)	10.13 (13.35)	13.15 (15.15)
Hindering								
Male	11.21 (13.88)	11.96 (13.75)	10.68 (13.45)	15.59 (14.88)	17.26(15.40)	14.25 (15.80)	13.58 (14.80)	11.06 (13.68)
Female	9.77 (13.47)	11.46 (14.89)	11.18 (14.58)	13.60 (15.19)	18.45(16.30)	11.58 (15.48)	12.65 (15.66)	10.90 (14.64)

Former Friendships								
Gender	Basic Survival	Self-Protection	Disease Avoidance	Status Seeking	Affiliation	Mate Acquisition	Mate Retention	Kin Care
Helping								
Male	13.33(13.74)	13.97(14.37)	12.73 (13.56)	15.15(13.91)	20.02(14.29)	12.78(14.83)*	11.53(13.15)	10.89(13.40)
Female	14.57(15.50)	15.23(15.36)	14.00(14.91)	13.17(13.72)	19.28(15.29)	9.64 (13.62)*	10.28 (13.81)	12.92 (14.73)
Hindering								
Male	12.32(14.43)	13.67(15.08)	12.44 (14.65)	16.67(15.48)	19.54(15.27)	15.72 (16.16)	16.96 (16.38)	12.75 (14.97)
Female	11.46(14.89)	14.09(16.25)	12.13 (14.99)	15.62(16.12)	20.64(17.26)	14.60 (17.09)	16.37 (17.68)	12.87 (15.69)

Note. Values are Mean (Standard Deviation). *p <.05, ** p<.01, ***p<.001 significant difference between males and females. Significance levels are adjusted for multiple comparisons using the Benjamini-Hochberg correction.

Figure 3

Study 3 Friend vs. Ego Ratings of Former Friendships



Note. Overlapping error bars indicate a non-significant difference

Table 8

Study 3 Friend vs. Ego Contrasts on Help/Hindering Scores of Former Friendships Across Motives

Helping Fundamental Motives		
Motive	I ended it	They ended it
Basic Survival	13.15 (14.44)	16.44 (15.29)**
Self-Protection	13.55 (14.52)	17.70 (15.63)***
Disease Avoidance	12.28 (14.05)	16.58 (14.56)***
Status Seeking	13.08 (13.87)	16.77 (13.43)***
Affiliation	18.35 (15.05)	23.05 (13.63)***
Mate Acquisition	10.70 (14.20)	12.09 (14.39)
Mate Retention	10.05 (13.13)	13.10 (14.38)**
Kin Care	11.32 (14.00)	13.75 (14.43)*

Hindering Fundamental Motives		
Motive	I ended it	They ended it
Basic Survival	12.67 (15.24)	9.63 (12.67)**
Self-Protection	14.93 (16.36)	10.78 (13.27)***
Disease Avoidance	12.89 (15.36)	10.42 (12.94)*
Status Seeking	16.72 (16.22)	14.21 (14.47)*
Affiliation	20.39 (16.56)	19.31 (15.90)
Mate Acquisition	15.11 (16.87)	14.98 (16.11)
Mate Retention	17.14 (17.32)	15.06 (16.36)
Kin Care	13.61 (15.86)	10.46 (13.50)*

Note. Values are Mean (Standard Deviation). * $p < .05$, ** $p < .01$, *** $p < .00$ indicates significant differences between when the ego ended vs. when the friend ended the relationship.

Discussion

Friendships are integral to human health, happiness, and thriving (for reviews, see Dunbar, 2018; Krems & Kaufman, in press). Yet although friends can provide substantial benefits, they are never cost-free—and such costs remain relatively understudied (Kim et al., 2023; Krems et al., under review). Across three studies, we examined how different types of friends—ideal, closest, ambivalent, and former—are perceived to benefit and cost us.

First, people generally viewed their friends as helping them achieve fundamental goals. Even “bad” friends—ambivalent friends (those participants wished they could sever ties with) and former friends (those with whom participants were no longer friends)—were reported to provide net benefits for survival and self-protection. This pattern is consistent with theorizing on the evolution of group living, which holds that the presence of other group members can enhance safety by reducing risks from predation or coalitional violence (e.g., Alexander, 1974; van Schaik, 1983). For some outcomes, then, the mere presence of others may confer benefits. At the same time, participants also perceived “bad” friends as hindering the achievement of certain goals, particularly those involving zero-sum goods, such as status or mates (e.g., a desirable job or mate acquired by a friend cannot simultaneously be acquired by oneself).

Second, participants strongly differentiated among friend types. Across every motive, actual close friends were seen as providing fewer benefits than ideal friends, but substantially fewer costs than bad friends. Notably, even ideal friends were not perceived as cost-free, perhaps reflecting an evolved psychology that tracks the inevitable trade-offs involved in any relationship. This interpretation is consistent with research on partner preferences showing that people do not construct ideal mates or friends who are maximally kind, generous, trustworthy,

1
2
3
4 attractive, and so forth—even when there are no explicit constraints preventing them from doing
5
6 so (e.g., Krems & Conroy-Beam, 2020).
7
8

9 Third, comparing men and women’s appraisals of their friendships across studies, we
10
11 found small but reliable differences for ratings of close friendships. Female participants rated
12
13 their friendships as affording more benefits and fewer costs across multiple different motives. On
14
15 one hand, these findings align with existing research on sex differences in close friendships,
16
17 showing that women have fewer but more intimate, self-disclosing, and supportive friendships,
18
19 while men have a greater number of more instrumental-focused friendships (Ayers & Krems, in
20
21 press; Williams et al., 2026). For example, women might have higher thresholds for the net
22
23 benefits that any of their fewer, closer friends must generate. Although men’s friendships have
24
25 been described as more instrumental, it is worth noting that here, women’s friends are, on
26
27 average, deemed to provide more net benefits.
28
29
30
31
32

33 Fourth, perceived costs and benefits also differentiated among friend types within both
34
35 the “good” and “bad” categories. Benefits—but not costs—distinguished ideal friends from close
36
37 friends, with ideal friends perceived as providing greater benefits. Conversely, costs—but not
38
39 benefits—distinguished former friends from ambivalent friends. Friendships that had been ended
40
41 were perceived as having imposed greater costs than friendships participants wished to end but
42
43 maintained. These patterns also help explain how friendships come to be perceived as net
44
45 beneficial or net costly: good friends appear to be those who provide high benefits and relatively
46
47 low costs; bad friends, by comparison, appear to be those who provide some benefits but also
48
49 substantial costs—particularly in domains involving status seeking and mate attraction.
50
51
52
53
54

55 Fifth, all friendships were both helpful and hindering. One interpretation is that
56
57 friendships are fundamentally mixed-valence relationships: even highly beneficial friends
58
59
60
61
62
63
64
65

1
2
3
4 impose costs, and even costly or “bad” friends continue to provide some benefits. Rather than
5
6 sorting people into purely good versus bad relationship categories, participants seem to represent
7
8 different friendships as having tradeoff profiles. This pattern suggests that friendship
9
10 maintenance and dissolution may not hinge on the mere presence of costs, but on whether
11
12 perceived benefits continue to outweigh those costs within especially consequential domains
13
14 (e.g., status seeking, mate acquisition, mate retention).
15
16
17

18
19 Finally, and related, friendships differed depending on who initiated the termination.
20
21 When participants reported ending the friendship themselves, they also reported experiencing
22
23 greater costs than when the friend had ended the relationship. Conversely, when the friend ended
24
25 the relationship, participants reported greater benefits than when they themselves initiated the
26
27 breakup.
28
29
30

31 **Implications, Limitations, and Future Directions**

32

33
34 Participants across studies provided consistent answers about the costs and benefits
35
36 associated with ideal, close, ambivalent, and former friends. At first glance, this pattern appears
37
38 inconsistent with the idea that friendships avoid strict account-keeping; indeed, some work
39
40 contrasts friendship with overtly reciprocal or exchange-based relationships (Clark & Mills,
41
42 1979; Fiske, 1992; Silk, 2003). However, other findings likewise suggest that people track the
43
44 benefits and costs friends provide (even if this is not necessarily conscious). For instance,
45
46 friendships are structured in tiers: people provide more help to—and expect more help from—
47
48 closer friends (Cialdini et al., 1997; Jones & Rachlin, 2006; Korchmaros & Kenny, 2001;
49
50 Rachlin & Jones, 2008). People also hold friend preferences and endorse “rules of friendship”
51
52 that imply expectations for relationships to be net beneficial (Ayers et al., 2023, 2024;
53
54
55 Cropanzano & Mitchell, 2005; Eisenbruch & Roney, 2020; Felmlee et al., 2012; Krems et al.,
56
57
58
59
60
61
62
63
64
65

2022; Murstein et al., 1977; Williams et al., 2022). Perhaps most tellingly, people notice—and sometimes end—friendships that become too one-sided (Bushman & Holt-Lunstad, 2009; Lepore, 1992; Winn et al., 1991).

We therefore speculate that people might track and store information about the costs and benefits associated with their friendships—even if this information is only made available to some mental modules and does not necessarily enter into conscious awareness until the trade-offs become problematic (e.g., people are unlikely to regularly consciously calculate the costs of benefits of well-functioning ongoing friendships). There may be good reason to suppress or deny such ongoing accounting. Disavowing cost–benefit calculations help create the appearance of unconditional loyalty. Framing friendship in explicit cost–benefit terms would undermine the alliance support that friendship is proposed to provide (DeScioli & Kurzban, 2009): A person who says they will support you only so long as the benefits exceed the costs signals that their loyalty is conditional and negotiable. Likewise, if assistance to a friend in need appears calculated, it can resemble a loan rather than help motivated by an intrinsic concern for—or stake in—the friend’s welfare. In that case, the recipient may later treat the interaction as a transaction—deciding whether repayment is warranted when the benefactor eventually faces illness, injury, or other hardship—again thwarting some of the purported functionality of friendship (friends helping one another when in need; Tooby & Cosmides, 1996).

Some scholarship has interpreted this feature of friendship psychology as paradoxical. Friendships appear useful insofar as people tend to maintain beneficial relationships and abandon costly ones—implying that people track the costs and benefits of their friends—yet people often say and act as though they do not engage in such accounting (see Silk, 2003). We suggest that this tension reflects a feature of friendship psychology rather than a contradiction. People may

1
2
3
4 not always have conscious access to the costs and benefits associated with their friendships, and
5
6 they may act in ways that suppress or obscure such accounting—both for themselves and for
7
8 others. Nevertheless, people appear to track these costs and benefits at some level. What seems
9
10 paradoxical—simultaneously tracking costs and benefits while denying or disguising that
11
12 accounting—may instead be a design feature of the psychology governing friendship (see also
13
14 Kurzban, 2011).
15
16
17

18
19 The present work begins to address the relative lack of research on the “dark side” of
20
21 friendship by asking people to quantify the perceived costs of friendships. Here, we
22
23 conceptualize costs as ways friends might hinder progress toward fundamental goals—for
24
25 example, by exploiting one’s generosity, using one’s social connections without reciprocating, or
26
27 otherwise impeding goal pursuit. Exactly how do friends hinder people’s progress toward their
28
29 goals, and how do even problematic friendships sometimes facilitate those goals? What specific
30
31 behaviors distinguish good friends from ambivalent or former friends, and how do these patterns
32
33 vary across motivational domains? Answering such questions is both theoretically and
34
35 practically important and should be a focus of future work.
36
37
38
39
40

41 Likewise, future work might conceptually replicate the current work by exploring
42
43 different behavioral dimensions toward different types of friends—for example, by asking people
44
45 which of these friends would they rely on or trust for outcomes from the banal (e.g., to lend you
46
47 \$5) to the major (e.g., to keep your infidelity secret). A similar avenue could involve exploring
48
49 the helping and hindering of different current friends who vary in closeness. People have
50
51 different tiers of friends—best, close, mere friends, acquaintances, and so on (Dunbar, 2018).
52
53 But whereas people give greater benefits to closer versus less close friends (e.g., DeScioli &
54
55 Kurzban, 2012; Krems et al., 2024; Korchmaros & Kenny, 2001), less is known about the costs
56
57
58
59
60
61
62
63
64
65

1
2
3
4 friends impose on one another as a function of friend closeness. Indeed, more distant friends and
5
6 other weaker ties might ask less of us than closer friends do; at the same time, we might be
7
8 willing to pay even great costs for those closer friends (e.g., Stewart-Williams, 2002).
9

10
11 Future research should also broaden the scope of friendship costs. For example, studies
12
13 could examine the health or economic consequences associated with different types of friends
14
15 (e.g., Chetty et al., 2022; Holt-Lunstad et al., 2007). In addition, work should move beyond
16
17 perceived costs and benefits assessed via self-report. Doing so would address the possibility that
18
19 self-reports reflect general positive evaluations of current friends and negative evaluations of
20
21 former friendships rather than accurate assessments of costs and benefits. Several aspects of the
22
23 present findings, however, suggest more nuanced evaluations. Current friends were generally
24
25 rated as providing fewer benefits than ideal friends. Participants also viewed friendships ended
26
27 by others as more beneficial than those they themselves ended. Moreover, friendships
28
29 participants wished would end were perceived similarly to those that had already ended. These
30
31 patterns suggest that retrospective bias alone is unlikely to explain the observed differences
32
33 between current and former friendships. Likewise, a simple halo effect cannot account for the
34
35 finding that friends were perceived differently across motivational domains (e.g., most helpful
36
37 for self-protection and less helpful for mate acquisition).
38
39
40
41
42
43
44

45
46 Notably, not only might different friends bring different costs and benefits, but male and
47
48 female friends might bring different costs and benefits—perhaps differently so to men and
49
50 women. Most close friendships are within-sex, but prior work notes some benefits emphasized in
51
52 cross-sex friendships. For example, men might often befriend women as back-up mates (e.g.,
53
54 Lewis et al., 2011), and women might benefit from male friends' strength for self-protection
55
56
57
58
59
60
61
62
63
64
65

(e.g., Hahnel-Peeters, 2022). Moreover, each of these uses might evoke specific costs for the friendship. Future work should explore these affordances with an eye toward gender.

Some findings raise broader questions about how the costs and benefits of friendship change across the lifespan. Specifically, the college student sample in Study 1 reported greater benefits from friends than did the community adult sample in Study 2. A similar pattern was observed across age groups, with participants under age 30 reporting greater benefits than those over age 30 (See supplemental table). Although the reasons for this difference are unclear, several possibilities exist. During young adulthood, people may rely more heavily on friends—rather than relatives, coworkers, or romantic partners—to help meet important goals. Friendships may simply feel more central and beneficial during this life stage (e.g., Dunbar, 2018). Moreover, this is also the life stage at which people seem to spend the most time communicating with friends, with friends having displaced parents but not yet having been displaced by romantic partners and children (e.g., David-Barrett et al., 2016). Given the centrality of friendships at this time of life, then, we might expect people to rely on them heavily to achieve their goals. Indeed, at this life stage, friendship predicts happiness—an emotion associated with such achievement—even over and above one’s personality (Demir & Weitekamp, 2007). Related, the importance people place on different fundamental motives shifts over time, suggesting that what constitutes a “good” versus “bad” friend may likewise depend on whether friends help or hinder the pursuit of the motives most salient at a given life stage. For example, friendships that interfere with caring for one’s family may be especially likely to dissolve during the transition to parenthood.

Is the distinction between good and bad friends always linked to facilitating or impeding fundamental motives? For example, self-evaluation maintenance theory suggests that we derive much esteem from comparing ourselves to close others, perhaps especially friends (Tesser,

1988); insofar as we outperform some friends, we might feel good about ourselves in the moment (and vice versa), regardless of how friends affect our goal achievement. And insofar as friends belittle, exclude, or subtly put us down, this can register as harmful to us and our esteem, again, independent of whether it derails any fundamental motive (e.g., Leary & Baumeister, 2000; Vaillancourt & Krems, 2018). The fundamental motives framework emphasizes connections between proximate psychological processes and ultimate functions. Sometimes those connections are consciously accessible and obvious, as between a friend poaching one's mate and mate retention goals. However, sometimes the connections are less obvious and indirect. Facilitating fundamental motives (or impeding them) is certainly not the only thing that renders someone a good (or bad) friend.

Conclusion

Understanding friendship may be more important now than ever. Loneliness is widespread, friendships are in recession, and both carry individual and societal costs (Krems & Kaufman, 2026). Yet social scientists have historically focused far more on romantic and kin relationships than on friendships (Fehr & Hrametschuck, 2005; Hruschka, 2010), and even less research has examined the costs of friendship (Kim et al., 2023; Krems et al., under review). The present work begins to address these gaps. We find that friendships entail both costs and benefits: good friends are perceived to facilitate net benefits across fundamental motives, whereas bad friends are comparatively costly—particularly in zero-sum domains such as status seeking and mate attraction.

References

- Alexander, R. D. (1974). The evolution of social behavior. *Annual review of ecology and systematics*, 325-383.
- Ayers, J. D., Krems, J. A., & Aktipis, A. (2023). A factor analytic examination of women's and men's friendship preferences. *Personality and Individual Differences*, 206, 112120.
- Ayers, J. A., & **Krems, J. A.** (forthcoming). The evolutionary psychology of friendship In A. Gallup, G Geher, & S. Karthikeyan (Eds.), *The Oxford Handbook of Evolutionary Psychology*. Oxford University Press.
- Ayers, J. D., Krems, J. A., & Aktipis, A. (2024). How do you build the perfect friend? Evidence from two forced-choice decision-making experiments. *Journal of Social and Personal Relationships*, 41(8), 2387–2410.
- Bagwell, C.L. & Bukowski, W.M. (2018). Friendship in childhood and adolescence: Features, effects, and processes. In W. M. Bukowski, B. Laursen, & K. H. Rubin (Eds.), *Handbook of peer interactions, relationships, and groups* (2nd ed., pp. 371–390). Guilford Press.
- Barakzai, A., & Shaw, A. (2018). Friends without benefits: When we react negatively to helpful and generous friends. *Evolution and Human Behavior*, 39(5), 529-537.
<https://doi.org/10.1016/j.evolhumbehav.2018.05.004>
- Barclay, P. (under review). Investing in a friend: A stake-based account of cooperation.
- Becker, D.V., Kenrick, D.T., Neuberg, S.L., Varnum, M.E.V., Sundie, J.M., Pick, C.M., Sng, O., Williams, K.E.G., Ko, A., Ackerman, J.M., Krems, J.A., Griskevicius, V., Li, Y.J., Maner, J.K., & Schaller, M. (2026). Fundamental evolved motives meet environmental threats and opportunities. *Evolution & Human Behavior*, 47, 106860,
<https://doi.org/10.1016/j.evolhumbehav.2026.106860>.

- Benenson, J. F., & Schinazi, J. (2004). Sex differences in reactions to outperforming same-sex friends. *British Journal of Developmental Psychology*, 22(3), 317-333.
- Bushman, B. B., & Holt-Lunstad, J. (2009). Understanding social relationship maintenance among friends: Why we don't end those frustrating friendships. *Journal of Social and Clinical Psychology*, 28(6), 749-778.
- Chetty, R., Jackson, M. O., Kuchler, T., Stroebe, J., Hendren, N., Fluegge, R. B., ... & Wernerfelt, N. (2022). Social capital I: measurement and associations with economic mobility. *Nature*, 608(7921), 108-121.
- Chopik, W. J. (2017). Associations among relational values, support, health, and well-being across the adult lifespan. *Personal relationships*, 24(2), 408-422.
- Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England journal of medicine*, 357(4), 370-379.
<https://doi.org/10.1056/NEJMsa066082>
- Cialdini, R. B., Brown, S. L., Lewis, B. P., Luce, C., & Neuberg, S. L. (1997). Reinterpreting the empathy–altruism relationship: When one into one equals oneness. *Journal of personality and social psychology*, 73(3), 481.
- Clark, M. S., & Mills, J. (1979). Interpersonal attraction in exchange and communal relationships. *Journal of personality and social psychology*, 37(1), 12.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of management*, 31(6), 874-900.
- David-Barrett, T., Kertesz, J., Rotkirch, A., Ghosh, A., Bhattacharya, K., Monsivais, D., & Kaski, K. (2016). Communication with family and friends across the life course. *PloS one*, 11(11), e0165687.

- Demir, M., & Weitekamp, L. A. (2007). I am so happy 'cause today I found my friend: Friendship and personality as predictors of happiness. *Journal of happiness Studies*, 8(2), 181-211.
- DeScioli, P., & Kurzban, R. (2009). The alliance hypothesis for human friendship. *PloS one*, 4(6), e5802. <https://doi.org/10.1371/journal.pone.0005802>
- Dunbar, R. I. (2018). The anatomy of friendship. *Trends in cognitive sciences*, 22(1), 32-51. <https://doi.org/10.1016/j.tics.2017.10.004>
- Dunbar, R. I. (2025). Why friendship and loneliness affect our health. *Annals of the New York Academy of Sciences*, 1545(1), 52-65.
- Eisenbruch, A., & Roney, J. (2020). Social taste buds: Evidence of evolved same-sex friend preferences from a policy-capturing study. *Evolutionary Psychological Science*, 6(3), 195-206.
- Fehr, B., & Harasymchuk, C. (2005). The experience of emotion in close relationships: Toward an integration of the emotion-in-relationships and interpersonal script models. *Personal Relationships*, 12(2), 181-196.
- Felmlee, D., Sweet, E., & Sinclair, H. C. (2012). Gender rules: Same-and cross-gender friendships norms. *Sex Roles*, 66(7), 518-529.
- Fiske, A. P. (1992). The four elementary forms of sociality: framework for a unified theory of social relations. *Psychological review*, 99(4), 689.
- Glaser, B., Shelton, K. H., & van den Bree, M. B. (2010). The moderating role of close friends in the relationship between conduct problems and adolescent substance use. *Journal of Adolescent Health*, 47(1), 35-42. <https://doi.org/10.1016/j.jadohealth.2009.12.022>

- Hahnel-Peeters, R. K. (2022). Bodyguard Hypothesis, Rape, and Coercion. In *Encyclopedia of Sexual Psychology and Behavior* (pp. 1-5). Cham: Springer International Publishing.
- Hall, J. A. (2012). Friendship standards: The dimensions of ideal expectations. *Journal of Social and Personal Relationships*, 29(7), 884-907.
- Harris, K., & Vazire, S. (2016). On friendship development and the Big Five personality traits. *Social and Personality Psychology Compass*, 10(11), 647-667.
- Holt-Lunstad, J., Smith, T. B., & Layton, J. B. (2010). Social relationships and mortality risk: a meta-analytic review. *PLoS medicine*, 7(7), e1000316.
<https://doi.org/10.1371/journal.pmed.1000316>
- Holt-Lunstad, J., Uchino, B. N., Smith, T. W., & Hicks, A. (2007). On the importance of relationship quality: The impact of ambivalence in friendships on cardiovascular functioning. *Annals of Behavioral Medicine*, 33(3), 278-290.
- Hruschka, D. J. (2010). *Friendship: Development, ecology, and evolution of a relationship* (Vol. 5). Univ of California Press.
- Jia, J., Tong, W., Zhang, J., Liu, F., & Fang, X. (2021). Trajectory of problematic internet use across the college years: The role of peer internet overuse behavior and peer attitude toward internet overuse. *Journal of Adolescence*, 86, 64-76.
<https://doi.org/10.1016/j.adolescence.2020.12.006>
- Jones, B., & Rachlin, H. (2006). Social discounting. *Psychological science*, 17(4), 283-286.
- Kenrick, D. T., Griskevicius, V., Neuberg, S. L., & Schaller, M. (2010). Renovating the pyramid of needs: Contemporary extensions built upon ancient foundations. *Perspectives on psychological science*, 5(3), 292-314. <https://doi.org/10.1177/1745691610369469>

- Kim, E. S., Chopik, W. J., Chen, Y., Wilkinson, R., & VanderWeele, T. J. (2023). United we thrive: friendship and subsequent physical, behavioural and psychosocial health in older adults (an outcome-wide longitudinal approach). *Epidemiology and Psychiatric Sciences*, 32, e65–e65. <https://doi.org/10.1017/S204579602300077X>
- Ko, A., Pick, C.M., Kwon, J.Y., Barlev, M., Krems, J.A., Varnum, M.E.W... (team of 34 international collaborators) & Kenrick, D.T. (2020). Family values: Rethinking the psychology of human social motivation. *Perspectives on Psychological Science*, 15 (1), 173-201. <https://doi.org/10.1177/1745691619872986>.
- Korchmaros, J. D., & Kenny, D. A. (2001). Emotional closeness as a mediator of the effect of genetic relatedness on altruism. *Psychological science*, 12(3), 262-265.
- Krems, J.A., Chin, T., Katz, J., Aglozo, E., Hong, H., & Kenrick, D.T. (under review). Bad friends: A functional perspective on the benefits and burdens of friendship.
- Krems, J. A., & Conroy-Beam, D. (2020). First tests of Euclidean preference integration in friendship: Euclidean friend value and power of choice on the friend market. *Evolution and Human Behavior*, 41(3), 188-198.
- Krems, J.A., & Kaufman, V. (2026). Friendship: The most overlooked public health asset. *Policy Insights in Behavioral and Brain Sciences*.
- Krems, J. A., Kenrick, D. T., & Neel, R. (2017). Individual Perceptions of Self-Actualization: What Functional Motives Are Linked to Fulfilling One's Full Potential? *Personality and Social Psychology Bulletin*, 43(9), 1337-1352.
- Krems, J.A., Williams, K. E. G., Aktipis, C. A., & Kenrick, D.T. (2021). Friendship jealousy: One tool for maintaining friendships in the face of third-party threats? *Journal of*

- Personality and Social Psychology*. 120(4), 977–1012.
<https://doi.org/10.1037/pspi0000311>
- Krems, J.A., Williams, K. E. G., Merrie, L.A., Kenrick, D.T., & Aktipis, C. A. (2022). Sex (similarities and) differences in friendship jealousy. *Evolution and Human Behavior*, 43, 97–106. <https://doi.org/10.1016/j.evolhumbehav.2021.11.005>
- Kurzban, R. (2011). *Why everyone (else) is a hypocrite: Evolution and the modular mind*. Princeton University Press.
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, 32, 1–62
- Lepore, S. J. (1992). Social conflict, social support, and psychological distress: evidence of cross-domain buffering effects. *Journal of personality and social psychology*, 63(5), 857.
- Lewis, D. M., Conroy-Beam, D., Al-Shawaf, L., Raja, A., DeKay, T., & Buss, D. M. (2011). Friends with benefits: The evolved psychology of same-and opposite-sex friendship. *Evolutionary Psychology*, 9(4), 543-563.
- Murstein, B. I., Cerreto, M., & Mac Donald, M. G. (1977). A theory and investigation of the effect of exchange-orientation on marriage and friendship. *Journal of Marriage and the Family*, 543-548.
- Neel, R., Kenrick, D. T., White, A. E., & Neuberg, S. L. (2016). Individual differences in fundamental social motives. *Journal of personality and social psychology*, 110(6), 887-907.
- Pick, C.M., Ko, A., Kenrick, D.T., (team of 74 international collaborators)... & Varnum, M.E.W. (2022). Fundamental social motives measured across forty-two cultures in two waves. *Nature - Scientific Data*. 9:499. <https://doi.org/10.1038/s41597-022-01579-w>

- Pillemer, J., & Rothbard, N. P. (2018). Friends without benefits: Understanding the dark sides of workplace friendship. *Academy of Management Review*, 43(4), 635-660.
<https://doi.org/10.5465/amr.2016.0309>
- Rachlin, H., & Jones, B. A. (2008). Altruism among relatives and non-relatives. *Behavioural processes*, 79(2), 120-123.
- Rose, A. J., Carlson, W., & Waller, E. M. (2007). Prospective associations of co-rumination with friendship and emotional adjustment: considering the socioemotional trade-offs of co-rumination. *Developmental psychology*, 43(4), 1019. <https://doi.org/10.1037/0012-1649.43.4.1019>
- Schaller, M., Kenrick, D. T., Neel, R., & Neuberg, S. L. (2017). Evolution and human motivation: A fundamental motives framework. *Social and Personality Psychology Compass*, 11(6), e12319.
- Shaw, A., DeScioli, P., Barakzai, A., & Kurzban, R. (2017). Whoever is not with me is against me: The costs of neutrality among friends. *Journal of Experimental Social Psychology*, 71, 96-104. <https://doi.org/10.1016/j.jesp.2017.03.002>
- Silk, J. B. (2003). Cooperation without counting. *Genetic and cultural evolution of cooperation*, 37-54.
- Stewart-Williams, S. (2007). Altruism among kin vs. nonkin: effects of cost of help and reciprocal exchange. *Evolution and human behavior*, 28(3), 193-198.
- Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. *Advances in Experimental Social Psychology*, 21, 181-2
- Tooby, J., & Cosmides, L. (1996). Friendship and the banker's paradox: Other pathways to the evolution of adaptations for altruism. In W. G. Runciman, J. M. Smith, & R. I. M.

Dunbar (Eds.), *Evolution of social behaviour patterns in primates and man* (pp. 119–143). Oxford University Press.

U.S. Department of Health and Human Services, Office of the Surgeon General. (2023). *Our epidemic of loneliness and isolation: The U.S. Surgeon General's advisory on the healing effects of social connection and community*. U.S. Department of Health and Human Services. <https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf>

Vaillancourt, T., & Krems, J. A. (2018). An Evolutionary Psychological Perspective of Indirect Aggression. *The development of relational aggression*, 111.

Van Schaik, C. P. (1983). Why are diurnal primates living in groups? *Behaviour*, 87(1-2), 120–144. <https://doi.org/10.1163/156853983X00147>

Williams, K. E., Ayers, J. D., Li, Y., & Chung, E. (2026). Cross-societal evidence of sex differences in preference for emotional support from friends. *Evolution and Human Behavior*, 47(4), 106877.

Williams, K. E., Krems, J. A., Ayers, J. D., & Rankin, A. M. (2022). Sex differences in friendship preferences. *Evolution and Human Behavior*, 43(1), 44-52. <https://doi.org/10.1016/j.evolhumbehav.2021.09.003>

Winn, K.I., D.W. Crawford, & J. Fischer (1991) Equity and commitment in romance versus friendship. *J. Soc. Behav. Pers.* 6:301–314