

WOMEN'S FRIENDSHIP: ALLOMOTHERING, COOPERATIVE BREEDING , AND EXOGAMY AS BASES FOR EFFECTIVE STRATEGIES FOR FRIENDSHIP FORMATION

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ABSTRACT

Following research examining allomothering, cooperative breeding, and exogamy where women are said to form alliances with other women for enhanced protection for self and offspring, and for reproductive and parenting knowledge transmission, two studies were implemented in order to ascertain how women go about forming friendships with other women. Using a sample of women aged 18 to 69, Study 1 (n = 305) sought to discover the actions that women engage in to form a friendship, and using another sample of women aged 18 to 65, Study 2 (n = 222) sought to determine which actions are perceived as most effective. Women were expected to rate actions that suggest a desire to bond emotionally or actions that allow for emotional bonding to occur as most effective. The results were consistent with the hypotheses and are discussed in terms of prior research.

Keywords: *Friendship, Allomothering, Emotional bonding, Emotional commitment.*

INTRODUCTION

Recent research suggests that women are born to be “mean girls”, i.e., indirectly aggressive, as being so gives them an edge in intrasexual competition (Björkqvist, 1994, Björkqvist, Österman, & Lagerspetz, 1994; Hess & Hagen, 2006, Salmivalli & Kaukiainen, 2004; Stockley & Campbell, 2013; Vaillancourt, 2013). This indirect aggression is often done to gain access to high quality mates (Miller, 2013) and it increases women’s self-esteem, mate value, and mating success (Galen & Underwood, 1997).

However, while women may have evolved to be competitive with other women, women can also benefit from forming friendships with other women. In the Environment of Evolutionary Adaptedness [EEA], following the Allomothering Hypothesis (Radtke, 2016), and Hrdy's (2007, 2009) research on the cooperative breeding model, women are said to have bonded with other women as a survival strategy to help with the rearing of offspring if environmental circumstances dictated that help is required. Also, exogamy affects women's friendship formation. Exogamy involves partnering with individuals, women partnering with males in this case, from outside one's group. It can provide benefits such as avoidance of the biological and social problems that can occur from forming incestuous relationships. Some exogamous relationships in the past may have involved men partnering with women whom they captured from outside groups (Lizarralde & Lizarralde, 1991). Due to this type of exogamy, it would have been adaptive for women to form friendships with other women for added support in avoiding being captured and for support in dealing with problems that could arise in the new group the women would be forced to become a part of. Fisher and Moule (2013) point also out that women may experience benefits in the form of reciprocal altruism involving the sharing of goods, energy and time, from bonding with other women. This could also come about via the aforementioned type of exogamy.

Additionally, forming bonds with other women also helps women make decisions regarding reproduction (Bernardi, 2003; Bernardi, Keim, & von der Lippe, 2007; Fisher & Moule, 2013) and helps women learn adaptive parenting methods (Balaji, Claussen, Smith, Visser, Morales, & Perou, 2007; Fisher & Moule, 2013). Fisher and Moule (2013) also point out that women who received social support from other women had better labor progress, healthier babies, and less post-partum depression. Bonding with other women plays an essential role in the survival of many women (Fletcher, Simpson, Campbell, & Overall, 2015; Radtke, 2016, 2017).

Consistent with this, recent research indicates that women form strong, very close, relationships with other women which increase their chances of survival (Goodman & O'Brien, 2000; Hrdy, 1999, 2009; Fletcher, et al., 2015; Morgan & Thompson, 2006; Radtke, 2016), and are vital to women's health and well-being (Goodman & O'Brien, 2000; Radtke 2016). Also, the most common theme involved in women's emotional attraction to other women is for friendship (Radtke, 2017) and these friendships are emotionally intense (Morgan & Thompson, 2006). However, evolutionary theory based research has largely overlooked female friendship formation (Radtke, 2016). Evolutionary theory would play a role in women's friendship formation since the friendship bond that women created with other women would have conveyed an evolutionary advantage to our female ancestors. For example, Tooby (2017) points out that we are the descendants of individuals who formed coalitional bonds. But, to date there is no evolutionary theory based research examining how modern day women go about forming bonds, i.e., becoming friends, with other women, and examining which friendship tactics are most effective. The present research seeks to fill this void by examining how women go about forming friendships with other women via 2 studies. Study 1 ascertained the tactics women use to solicit female friends, and Study 2 examines the perceived effectiveness of the most common tactics from Study 1. It was hypothesized that women would perceive actions that suggest/indicate a desire to bond emotionally as most effective since prior research indicates that women's friendships are

emotionally intense and involve emotional attraction, and forming an emotional bond conveys adaptive benefits.

STUDY 1

Method

Participants were 305 women, age = 18 to 69, $M = 21.49$, $SD = 5.78$. Participants were recruited from a private University in the northeastern US via an email invitation and via electronic listserv postings. The sample was 83.1 % White, 7.9% Black, .8% American Indian or Alaska Native, 3% Asian, and 5.3% Other. Regarding sexual relationship experience, 80.5 % of the sample had sexual relationship experience while 19.5% did not have sexual relationship experience. For current relationship status: 57.1% were “Single”, 39.1% were “In a relationship”, and 3.8% were “Unsure”. Regarding sexual orientation, 89.5 % of the sample was Heterosexual, .8% were Homosexual, 8.3% were Bisexual, 1.1% were Other, and .4% “Preferred not to say”. Lastly, 62.8% of the sample was using hormonal birth control while 37.2% reported not using hormonal birth control. No participants received compensation for their participation. The research was approved by the Institutional Review Board at the authors’ institution.

Procedure

Participants were presented with an invitation to take part in the research that included a link to an online questionnaire, which included the demographic questions: age, race, current relationship status, sexual relationship experience, and whether or not they were using hormonal birth control. Following standard act nomination methods used in prior research that set out to determine which actions are engaged in when such actions are not previously known (Buss, 1988a, 1988b; Buss & Craik, 1983; Moran & Wade, 2017; Wade, Auer & Roth, 2009; Wade & Slempe, 2015; Wade & Feldman, 2016), the next page of the questionnaire contained the following act nomination instructions and 5 numbered blanks for participants to write in their responses:

*Please think of people you know of your own gender (sex) who have been or are currently trying to form new friendships. With these individuals in mind, write down **five acts or behaviors** that they have performed (or might perform) in order to attract friends. Be sure to write down acts or behaviors. An act is something that a person does or did, not something that they are. Do not say “she is infatuated” or “she is love-struck.” These are not behaviors. You should describe acts or behaviors that someone could read and answer the questions: “Did you ever do this?” and “How often have you done this?”*

Results

Following methodology used in prior research using the act nomination procedure (Buss, 1988a, 1988b; Buss & Craik, 1983; Moran & Wade, 2017; Wade, et al., 2009, Wade & Feldman, 2016; Wade & Slempe, 2015), the nominated acts were examined by the authors. Consensus nominated acts by participants were retained. An act was considered consensus if it was nominated multiple times by participants. Consistent with

act nomination research methodology, any discrepancies were resolved via discussion. Study 1 revealed 13 consensus actions, see Table 1.

Table 1. Consensus Girl Flirting Acts

Girl Flirting Act	
1.	Spends time with her
2.	Asks to go to a meal together
3.	Asks about common interests
4.	Invites her to pregame/go to a party
5.	Laughs with her
6.	Texts her
7.	Asks to do homework or study together
8.	Tells jokes
9.	Compliments her
10.	Smiles at her
11.	Joins new clubs or organizations
12.	Talks to a classmate
13.	Friends her on social media

STUDY 2

Hypothesis

Since prior research indicates that the strongest theme in women's friendship formation is emotional bonding (Radtke, 2016), actions suggesting a desire to form an emotional connection or an opportunity to form an emotional connection were expected to receive the highest effectiveness ratings. Specifically, the acts "Spends time with her", "Asks to go to a meal together", "Asks about common interests", and "Laughs with her" were expected to be rated as most effective because these actions facilitate, or allow for, emotional bonding (see De Castro, 1994; Gray, Parkinson, & Dunbar, 2015; Rubin, 1970; Waugh & Frederickson, 2006; Walker, Curren, & Jones, 2016).

Method

Participants

Participants were 222 women, age range = 18 to 65, $M = 21.15$, $SD = 4.88$. They were recruited via email invitation and postings on the authors' Facebook pages. No participants received compensation for their participation, and no women who participated in Study 1 also participated in Study 2. Avoiding dual participation was accomplished by not sending the email invitation to women who had been emailed an invitation to participate in Study 1, and by not having posted the invitation to participate in Study 1 on the authors' Facebook pages. Participants Ethnicity was as follows: 86.1% were White, 4.5% were Black, 6.1% were Asian, and 3.2% were Other. For sexual relationship experience, 83.9% of participants had sexual relationship experience while

16.1% did not have sexual relationship experience. For relationship status, 57.6% of participants were “Single”, 36.2 percent were “In a relationship”, and 6.1% were “Unsure”. Participants sexual orientations were as follows: 89.3 % were Heterosexual, 1.6% were Homosexual, 6.5% were Bisexual, 1.9% were Other, and .6 percent “Preferred Not To Say”. Women participants birth control usage was as follows: 66% were on hormonal birth control and 34% were not using birth control. Lastly, once again this research was approved by the Institutional Review Board at the authors’ institution.

Procedure

Participants received an online questionnaire with demographic questions (age, race, sexual orientation, current relationship status: single, in a relationship, unsure; sexual relationship experience: yes or no; birth control usage: “Are you currently on birth control medication (the pill, patch, or injection such as DepoProvera)?”-yes or no) and the following instructions:

Following are listed acts that a woman might perform to try to form a friendship with another woman (attract other women as friends). We are interested in how effective you think each act would be at achieving this goal for you(if a woman did this to attract you to become her friend). Please read each act carefully, and think about its consequences. Then rate each act in terms of how likely the act is to be effective in attracting you as a friend. Use the 7-point scale below. A “7” means that you feel the act is very likely to be effective in attracting you as a friend. A “1” means that you feel the act is not very likely to be effective in attracting you as a friend. A “4” means that you feel the act is moderately likely to be effective in attracting you as a friend. Use intermediate numbers for intermediate likelihoods of effectiveness in attracting you as a friend.

Results

A series of mixed model repeated measures ANOVAs were computed. A 2(sexual relationship experience) x 2(birth control status) x 13 (friendship tactics) Mixed Model Repeated Measures ANOVA revealed a significant effect for friendship tactics, $F(12, 207) = 28.17, p < .0001, \eta^2 = .62$, see Table 2. Bonferroni corrected comparisons revealed that the most effective tactics were: “spends time with her”, “asks to go out to a meal together”, “asks about common / shared interests”, and “invites her pregame or go out to a party together”.

Additionally, a significant interaction of sexual relationship experience and friendship tactics occurred, $F(12, 207) = 2.83, p < .001, \eta^2 = .14$, see Table 3. Independent samples t-tests revealed that women with sexual relationship experience rated the tactics: “asks her to pregame together or go out to a party together” as more effective than women without sexual relationship experience ($t(238) = 3.99, p < .001$), while women without sexual relationship experience rated the tactics “joins new organizations”, and “talks to a classmate” as more effective than women with sexual relationship experience ($t(230) = -2.10, p < .04$, and $t(228) = -2.54, p < .012$, respectively).

Table 2: Mean Perceived Effectiveness of Girl Flirting Acts

Girl Flirting Act	Mean (SD)
(a) Spends time with her	5.92 (1.14)
(b) Asks to go to a meal together	5.87 (1.11)
(c) Asks about common interests	5.59 (1.14)
(d) Invites her to pregame/go to a party	5.41 (1.61)
(e) Laughs with her	5.28 (1.27)
Texts her ^{ab}	5.26 (1.26)
Asks to do homework or study together ^{abc}	5.16 (1.26)
Tells jokes ^{abce}	5.00 (1.32)
Compliments her ^{abce}	4.96 (1.32)
Smiles at her ^{abc} .	4.36 (1.43)
Joins new clubs or organizations ^{abcde}	4.23 (1.53)
Talks to a classmate ^{abcde}	4.07 (1.42)
Friends her on social media ^{abcde}	4.02 (1.63)

Note: higher numbers indicate greater effectiveness, comparisons were Bonferroni corrected also. Superscripts denote significant differences, $p < .05$, e.g. mean for row a, "spends time with her", is significantly different from means for rows that have an 'a' in their superscript, etc.. Comparisons for all 13 means are not included in the table.

Table 3: Mean Perceived Effectiveness of Girl Flirting Acts as a Function of Sexual Relationship Experience

Girl Flirting Act	Sexual Relationship Experience	
	Yes	No
Invites her to pregame/go to a party	5.64*** (1.46)	4.60***(1.85)
Joins new clubs and organizations	4.14* (1.55)	4.70* (1.38)
Talks to a classmate	3.96** (1.42)	4.58** (1.22)

Note: higher numbers indicate greater effectiveness, *** = $p < .001$, ** = $p < .01$, * = $p < .05$. Standard deviations are in parentheses.

To see how responses were affected by participant's ages, a multiple regression was computed. Age was the dependent variable, and the friendship tactics were the independent variables. The regression was significant $F(13, 172) = 2.78, p < .001, R^2 = .17$, adjusted $R^2 = .11$. The significant predictors of age were "invites her to pregame/go to a party", $b = -.25, p < .003$, "laughs with her", $b = .25, p < .047$; and "asks her to do homework or study together", $b = -.20, p < .015$, see Table 4. These results suggest that younger women perceive pregaming or going to a party together and studying or doing homework together as more effective than older women, while older women find laughing with her as more effective than younger women do.

Table 4. Multiple Regression for Age and Friendship initiation tactics

Tactic	B	SE	β	t	p
Compliments her	.19	.32	.51	.59	.56
Texts her	.06	.35	.02	.18	.86
Invites her to pregame/go to a party	-.76	.25	-.25	-3.06	.003
Smiles at her	-.28	.37	-.09	-.77	.44
Laughs with her	.92	.46	.25	1.998	.047
Tells jokes	.24	.36	.07	.66	.51
Asks to go to a meal together	.47	.36	.11	1.32	.19
Friends her on social media	.27	.22	.10	1.26	.21
Asks to do homework or study together	-.74	.30	-.20	-2.45	.015
Asks about common interests	-.31	.36	-.08	-.85	.40
Joins new clubs or organizations	-.27	.31	-.09	-.88	.38
Spends time with her	.18	.39	.04	.47	.64
Talks to a classmate	-.37	.31	-.11	-1.22	.22
R²	.17				
Adjusted R²	.11				

DISCUSSION

Actions that ranged from doing things together to smiling or talking were nominated as ways to form friendships with other women, and the results were consistent with the hypothesis for Study 2. Tactics that allow for emotional bonding to occur or suggest a desire to emotionally bond were perceived as the most effective way to start/develop friendships with other women. Following Hrdy's (2007, 2009) work on cooperative breeding, and Radtke's (2016) allomothering hypothesis where women seek to form alliances with other women, women create these alliances by forming an emotional bond with these other women. In terms of specific tactics, the tactic "she spends time with her" was perceived as highly effective because it shows a desire to attach oneself to another woman and attachment indicates an emotional connection/commitment (Rubin, 1970). The tactic "she asks to go out to a meal together" may have been rated as most effective because social bonding occurs during meals (De Castro, 1994). The tactic, "she asks about common/shared interests may have been perceived as most effective because sharing interests allows one to experience personal growth, success in worthy endeavors, and wider relational fulfillment, which are important in forming friendships (Walker, Curren, & Jones, 2016). Laughter may have been rated as a very effective tactic because laughter allows for social bonding. Gray, Parkinson, and Dunbar (2015) point out that laughing together stimulates more intimate self-disclosure and releases endorphins. Thus, since self-disclosure permits bonding (Vittengl & Holt, 2000) and sharing positive feelings also promotes attraction (Waugh & Frederickson, 2006) women perceive laughing with another woman as a very effective friendship attraction strategy. Also, it is

not surprising that the tactic “she friends her on social media” was perceived as less effective since online relationships are viewed as less authentic (Ribe, 2015).

The significant interaction of sexual relationship history and friendship tactics may have occurred because female friendships are heavily influenced by sexual behavior. Billy and Udry (1985) and Billy, Udry, and Rodgers (1984) point out that females are extremely likely to form friendships with other females whose sexual behavior is like their own sexual behavior. Additionally, in terms of specific items, women with sexual relationship experience may have rated the tactic “asks her to pregame or go out to a party together” as more effective than women without sexual relationship experience because this situation may be a situation where women feel they would need support in the form of protection from being exploited. Radtke (2016) points out that women may form friendships with other women for help with avoiding predatory sexual behavior and sexual aggression from men. Also, prior research indicates that men may try to sexually exploit women who have been drinking (Goetz, Easton, Lewis, & Buss, 2012). Women with sexual relationship experience may have experienced this type of situation more than women without sexual relationship experience. That explanation may be applicable. But, additional research is needed to ascertain its validity. Additionally, women with sexual relationship experience may have rated the tactics “joins new clubs and organizations, and “talks to a classmate” as less effective than women without sexual relationship experience because they feel these actions are too general, perhaps not directly allowing for emotional bonding, or perhaps women with sexual relationship experience have tried these tactics in the past and found them less effective. Further research is needed to determine why this difference occurred.

Younger women may have found the tactic “asks her to pregame or go out to a party together” as more effective than older women because younger women may be more prone to pregame or party. O'Malley, and Johnston (2002) report that alcohol use is very high among college aged women. So, pregameing or going out to a party together may be more frequent among the younger, college aged, women. Younger women may have rated “asks her to do homework or study together” as more effective than older women because the younger women in the sample are college students who are in a situation where they have homework while older women do not have the opportunity to do homework with another woman. It is not clear why older women found “laughs with her” more effective than younger women. Perhaps older women have a greater need for the release of endorphins that occurs with laughter. However, additional research is necessary to ascertain the validity of that explanation.

Overall, these results indicate that women's actions which suggest a desire to bond emotionally or provide an opportunity for emotional connections to develop are most effective for attracting women friends. Emotional access is important for women's non-romantic relationships with women just as it is for women's romantic relationships with men (Buss, 1989, 2006; Wade & Brown, 2012; Wade, Mogilski, & Schoenberg, 2017). These findings are in contrast to research examining men's friendship formation which is most often a product of less intimate and less emotion based actions (Tognoli, 1980), and most often involves sharing physical activities such as sports (Adams, Blieszner, & De Vries, 2000; Clark & Ayers, 1993; Walker, 1994). This research adds additional information to the allomothering hypothesis and cooperative breeding research showing

that evolutionary theory can account for the formation of women's friendships just as it does for women's romantic relationships.

Limitations

The present research investigated the perceived effectiveness of women's efforts to attract female friends rather than the actual effectiveness of such actions. Observational research investigating the actual effectiveness of these actions is warranted. The present research also did not take into account whether women in the sample already have children or desire children in the near future, and thus would have a greater need for allomothers. Women with a more pressing need of allomothers may value emotional closeness more than other women. So, future research examining emotional closeness and women's friendship formation should focus on women's status as mothers and women's desire to have children. Additionally, while culture interacts with evolutionary adaptations (Buss, 1995; Crawford & Anderson, 1979; Murray & Schaller, 2010; Schaller & Murray, 2011; Symons, 1995; Wade, 2003) additional research investigating friendship formation actions among women across cultures is warranted to see if women's friendship solicitation behavior is universal.

REFERENCES

- Adams, R.G., Blieszner, R. & De Vries, B. (2000). Definitions of friendship in the third age: Age, gender, and study location effects. *Journal of Ageing Studies*, 14(1), 117-133. [DOI](#)
- Balaji, A.B., Claussen, A.H., Smith, D., Visser, S.N., Morales, M. & Perou, R. (2007). Social support networks and maternal mental health and well-being. *Journal of Women's Health*, 16, 1386-1396. [DOI](#)
- Benenson, J.F. (2013). The development of human female competition: Allies and adversaries. *Philosophical Transactions of The Royal Society, B*, 368(1631). [DOI](#)
- Bernardi, L. (2003). Channels of social influence on reproduction. *Population Research and Policy Review*, 22, 527–55. [DOI](#)
- Bernardi, L., Keim, S. & von der Lippe, H. (2007). Social influences on fertility a comparative mixed methods study in Eastern and Western Germany. *Journal of Mixed Methods Research*, 1, 23–47. [DOI](#)
- Billy, J.O. & Udry, J.R. (1985). Patterns of adolescent friendship and effects on sexual behavior. *Social Psychology Quarterly*, 27-41. [DOI](#)
- Billy, J.O., Udry, J.R. & Rodgers, J.L. (1984). Adolescent sexual behavior and friendship choice. *Social Forces*, 62(3), 653-678. [DOI](#)
- Björkqvist, K. (1994). Sex differences in physical, verbal, and indirect aggression: A review of recent research. *Sex Roles*, 30, 177-188. [DOI](#)
- Björkqvist, K., Österman, K., & Lagerspetz, K.M. (1994). Sex difference in covert aggression among adults. *Aggressive Behavior*, 20(1), 27-33. [DOI](#)
- Buss, D.M. (2006). Strategies of human mating. *Psychological Topics*, 15(2), 239–260. [DOI](#)
- Buss, D.M. (1995). Psychological sex differences: Origins through sexual selection. *American Psychologist*, 50(3), 164-168. [DOI](#)
- Buss, D.M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12(01), 1–14. [DOI](#)

- Buss, D.M. (1988a). Love acts: The evolutionary biology of love. In R. J. Sternberg & M. L. Barnes (Eds.), *The psychology of love* (pp. 100-118). New Haven, CT: Yale University Press.
- Buss, D.M. (1988b). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology*, 9(5), 291-317. [DOI](#)
- Buss, D.M., & Craik, K.H. (1983). The act frequency approach to personality. *Psychological Review*, 90(2), 105. [DOI](#)
- Chapais, B. (2008). *Primeval kinship: How pair-bonding gave birth to human society*. Cambridge, MA: Harvard University Press.
- Clark, M.L. & Ayers, M. (1993). Friendship expectations and friendship evaluations: Reciprocity and gender effects. *Youth and Society*, 24, 299-313. [DOI](#)
- Crawford, C.B. & Anderson, J. L. (1989). Sociobiology: An environmental discipline? *American Psychologist*, 44, 1449-1459. [DOI](#)
- De Castro, J.M. (1994). Family and friends produce greater social facilitation of food intake than other companions. *Physiology and Behavior*, 56(3), 445-455. [DOI](#)
- Fisher, M.L. & Moule, K.R. (2013). A new direction for intrasexual competition research: Cooperative versus competitive motherhood. *Journal of Social, Evolutionary, and Cultural Psychology*, 7(4), 318-325. [DOI](#)
- Fletcher, G.J.O., Simpson, J.A., Campbell, L. & Overall, N.C. (2015). Pair-Bonding, romantic love, and evolution: The curious case of Homo Sapiens. *Perspectives on Psychological Science*, 1, 20-36. [DOI](#)
- Galen, B.R., & Underwood, M.K. (1997). A developmental investigation of social aggression among children. *Developmental Psychology*, 33(4), 589. [DOI](#)
- Goetz, C.D., Easton, J.A., Lewis, D.M., & Buss, D.M. (2012). Sexual exploitability: Observable cues and their link to sexual attraction. *Evolution and Human Behavior*, 33(4), 417-426. [DOI](#)
- Goodman, E. & O'Brien, P. (2000). *I know just what you mean: The power of friendship in women's lives*. New York: Simon & Shuster.
- Gray, A.W., Parkinson, B. & Dunbar, R.I. (2015). Laughter's influence on the intimacy of self-disclosure. *Human Nature*, 26(1), 28-43. [DOI](#)
- Hess, N.H., & Hagen, E.H. (2006). Sex differences in indirect aggression: Psychological evidence from young adults. *Evolution and Human Behavior*, 27(3), 231-245. [DOI](#)
- Hill, K. & Hurtado, A.M. (2009). Cooperative breeding in South American hunter-gatherers. *Proceedings of the Royal Society B*, 276, 3863. [DOI](#)
- Hrdy, S.B. (1999). *Mother nature: A history of mothers, infants, and natural selection*. New York: Pantheon Books.
- Hrdy, S. B. (2009). *Mothers and others*. Harvard UP, Cambridge (MA).
- Lizarralde, M. & Lizarralde, R. (1991). Bari exogamy among their territorial groups: Choice and/or necessity. *Human Ecology*, 19(4), 453-467. [DOI](#)
- Miller, C.W. (2013). Sexual selection: Male-male competition. *The Princeton Guide to Evolution*, 641-646.
- Moran, J., & Wade, T. J. (2017). Sex and the perceived effectiveness of short term mate poaching acts in college students. *Human Ethology Bulletin*, 32(3) 109-128. [DOI](#)
- Morgan, E.M., & Thompson, E.M. (2011). Process of sexual orientation questioning among heterosexual women. *Journal of Sex Research*, 48, 16–28. [DOI](#)
- Murray, D. R., & Schaller, M. (2010). Historical prevalence of infectious diseases within 230 geopolitical regions: A tool for investigating origins of culture. *Journal of Cross-Cultural Psychology*, 41(1), 99-108. [DOI](#)

- O'Malley, P.M., & Johnston, L.D. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol, Supplement, (14)*, 23-39. [DOI](#)
- Radtke, S. (2017). Self-identified heterosexual women who engage in same-sex sexual behavior: A thematic analysis. *EvoS Journal: The Journal of the Evolutionary Studies Consortium, NEEPS X*, 33-39.
- Radtke, S. (2016). *The allomothering hypothesis: An examination of the adaptiveness of female sexual fluidity in self-identified heterosexual and mostly straight women.* (Doctoral Dissertation, Ryerson University).
- Ribe, E. (2015). Book Review: Deborah Chambers, Social Media and Personal Relationships: Online Intimacies and Networked Friendship. *Sociology, 49(4)*, 804-805. [DOI](#)
- Rubin, Z. (1970). Measurement of romantic love. *Journal of Personality and Social Psychology, 16(2)*, 265. [DOI](#)
- Salmivalli, C. & Kaukiainen, A. (2004). "Female aggression" revisited: Variable-and person-centered approaches to studying gender differences in different types of aggression. *Aggressive Behavior, 30(2)*, 158-163. [DOI](#)
- Schaller, M. & Murray, D. R. (2011). Infectious disease and the creation of culture. *Advances in Culture and Psychology, 1*, 99-151. [DOI](#)
- Stockley, P. & Campbell, A. (2013). Female competition and aggression: Interdisciplinary perspectives. *Philosophical Transactions of The Royal Society B, 368*, 1-11. [DOI](#)
- Symons, D. (1995). Beauty is in the adaptations of the beholder: The evolutionary psychology of human female sexual attractiveness. In P. R. Abramson and S. D. Pinkerton, (Eds.), *Sexual nature/sexual culture*, (pp. 80-118). Chicago: University of Chicago Press.
- Tognoli, J. (1980). Male friendship and intimacy across the life span. *Family Relations, 273-279*. [DOI](#)
- Tooby, J. (2017). *Coalitional instincts*. Edge Foundation, Inc.
- Vaillancourt, T. (2013). Do human females use indirect aggression as an intrasexual competition strategy?. *Philosophical Transactions of The Royal Society B, 368*, 1631. [DOI](#)
- Vittengl, J. R., & Holt, C. S. (2000). Getting acquainted: The relationship of self-disclosure and social attraction to positive affect. *Journal of Social and Personal Relationships, 17(1)*, 53-66. [DOI](#)
- Wade, T. J. (2003). Evolutionary theory and African American self-perception: Sex differences in body-esteem predictors of self-perceived physical and sexual attractiveness, and self-esteem. *Journal of Black Psychology, 29(2)*, 123-141. [DOI](#)
- Wade, T.J., Auer, G., & Roth, T.M. (2009). What is love: Further investigation of love acts. *Journal of Social, Evolutionary and Cultural Psychology, 3(4)*, 290-304. [DOI](#)
- Wade, T. J., & Brown, K. (2012). Mate expulsion and sexual conflict. In T. Shackelford & A. Goetz, (Eds.), *The Oxford Handbook of Sexual Conflict in Humans*, New York: Oxford University Press, Inc..
- Wade, T.J., & Feldman, A. (2016). Sex and the perceived effectiveness of flirtation techniques. *Human Ethology Bulletin, 31(2)*, 30-44. [DOI](#)
- Wade, T.J., Mogilski, J., & Schoenberg, R. (2017) Sex differences in reconciliation behavior after romantic conflict. *Evolutionary Psychological Science, 3*, 1-7. [DOI](#)
- Wade, T.J., & Slep, J. (2015). How to flirt best: The perceived effectiveness of flirtation techniques. *Interpersona, 9(1)*, 32-43. [DOI](#)
- Walker, K. (1994). Men, women, and friendship: What they say, what they do. *Gender and Society, 8*, 246-265. [DOI](#)
- Waugh, C.E., & Fredrickson, B.L. (2006). Nice to know you: Positive emotions, self-other overlap, and complex understanding in the formation of a new relationship. *The Journal of Positive Psychology, 1(2)*, 93-106. [DOI](#)