

Mate Retention Tactics in Spain: Personality, Sex Differences, and Relationship Status

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ABSTRACT Mate retention is an important problem in romantic relationships because of mate poachers, infidelity, and the risk of outright defection. The current study ($N = 892$) represents the first study of mate retention tactics conducted in Spain. We tested hypotheses about the effects of gender, relationship commitment status, and personality on mate retention tactics. Women and men differed in the use of resource display, appearance enhancement, intrasexual violence, and submission/self-abasement as mate retention tactics. Those in more committed relationships reported higher levels of resource display, appearance enhancement, love, and verbal signals of possession. Those in less committed relationships more often reported intentionally evoking jealousy in their partner as a mate retention tactic. Personality characteristics, particularly Neuroticism and Agreeableness, correlated in coherent ways with mate retention tactics, supporting two evolution-based hypotheses. Discussion focuses on the implications, future research directions, and interdisciplinary syntheses emerging between personality and social psychology and evolutionary psychology.

Individuals in sexually reproducing species face two critical adaptive problems—selecting a mate and attracting a mate. Because potential mates differ in mate value, judicious selection offers adaptive benefits over mating indiscriminately (Andersson, 1994; Buss, 2003; Symons, 1979; Trivers, 1972; Williams, 1975). These include acquiring resources that can increase the survival and reproductive success of offspring, as well as high-quality genes that can be transmitted to offspring. Because potential mates with desirable qualities are always in short supply compared with the numbers seeking to mate with

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them, tactics of mate attraction are essential for the successful enactment of mate preferences (Buss, 1988a; Schmitt & Buss, 1996).

Although many avian species form long-term pair-bonded relationships, humans are among the roughly 3% of mammalian species that form long-term committed relationships as part of their sexual strategies (Buss & Schmitt, 1993; Reichard, 2002; Symons, 1979). Consequently, attracting a desirable mate is not enough. Successful retention of the selected mate becomes a key concern. The importance of successful mate retention becomes amplified to the degree that mate poachers attempt to lure them away (Schmitt & Buss, 2001), and to the degree that mates are tempted by the prospect of infidelity or total defection (Buss, 1988b, 2003).

Many species that lack long-term mating strategies confront the problem of mate guarding, which often involves fending off rivals long enough to permit successful consummation (Thornhill & Alcock, 1983). Insect mate-guarding tactics, for example, include sequestering the mate, departing from the vicinity of rivals, physically driving off rivals, emitting scents that conceal the attractant signals of a mate, and even remaining physically attached to the mate for a period of time long enough to ensure successful conception (Thornhill & Alcock, 1983). Although humans too face the problem of mate guarding, mate retention is a broader concept that involves the maintenance of a mating relationship over a temporally extended period (Buss, 1988b). Socially monogamous avian species also face the adaptive problem of mate retention (Dubois & Cezilly, 2002). Consequently, successful mate retention often requires tactics that do not come into play in temporally delimited mate guarding, such as providing reproductively relevant resources that fulfill the initial mate preferences of a partner over long expanses of time.

Although much research has been devoted to studying mate selection and mate attraction, only a handful of empirical studies have focused on tactics of human mate retention (Buss, 1988b; Buss & Shackelford, 1997; Goetz et al., 2005; Shackelford, Goetz, Buss, Euler, & Hoier, 2005; Starratt, Shackelford, Goetz, & McKibbin, 2007). With two exceptions, these studies have been based exclusively on American samples. One study examined the link between mate retention tactics and sociosexuality in a Croatian sample (Kardum, Hudek-Knezevic, & Gracanin, 2006). Another study explored mate retention tactics in homosexual individuals in a Canadian sample (VanderLaan & Vasey, 2008). The current study was

designed to examine mate retention tactics in a Spanish population, to test the generality of some of the key findings discovered in primarily American-only samples, and to explore predictors of mate retention tactics that heretofore have been unexamined.

Hypotheses About Sex Differences in Mate Retention Tactics

Both women and men have been predicted to use a wide variety of mate retention tactics. In the first study of human mate retention tactics, for example, Buss (1988b) developed a taxonomy of 19 tactics, ranging from vigilance to violence (see Table 1). The 19 tactics are organized into two overarching domains—intersexual manipulations (those directed at one's romantic partner) and intrasexual manipulations (those directed at same-sex rivals). Within these domains, the tactics are further grouped into more precise categories. For example, the category of Direct Guarding includes the tactics of vigilance (e.g., checking up on the partner), concealment of mate (e.g., not taking partner to a party where other men would be present), and monopolization of time (e.g., insisting that the partner spend all her free time with me). Other categories of intersexual manipulations include negative inducements (e.g., punishing mate's infidelity) and positive inducements (e.g., displays of love and care). Within the domain of intrasexual manipulations are the categories of public signals of possession (e.g., verbal signals of possession, such as mentioning to same-sex others that one's partner is "taken") and negative inducements that range from verbal threats to physical violence.

Two key sex differences in mate retention tactic usage have been hypothesized, one predicting greater male usage and the other predicting greater female usage. Men more than women have been hypothesized to use resource display as a mate retention tactic. This hypothesis is based on the logic of sexual selection theory (Darwin, 1871; Trivers, 1972), and in particular the link between the two component processes of sexual selection—intrasexual competition and intersexual selection (preferential mate choice). Specifically, successful mate retention tactics are predicted to be those that embody the initial mate preferences of the partner (Buss, 1988a). Because displays of love are highly valued by both sexes in long-term mating, both sexes should use love displays equally as tactics of mate retention. Because women more than men across cultures prefer resources

Table 1
Example Items and Reliabilities (Cronbach's α) of MPI and NEO-PI-R

Scale	Example Item	Total	Male	Female
Dom. 1: Intersexual manipulations		.79	.80	.74
Cat. 1: Direct guarding		.75	.73	.82
Tac. 1: Vigilance	"Called to make sure my partner was where she said she would be"	.79	.79	.79
Tac. 2: Concealment of mate	"Did not take my partner to a party where other men would be present"	.58	.48	.70
Tac. 3: Monopolization of time	"Insisted that my partner spend all her free time with me"	.68	.67	.71
Cat. 2: Intersexual negative inducements		.76	.76	.76
Tac. 4: Jealousy induction	"Talked to another woman (or man) at a party to make my partner jealous"	.76	.75	.77
Tac. 5: Punish mate's infidelity	"Threatened to break up if my partner ever cheated on me"	.74	.74	.74
Tac. 6: Emotional manipulation	"Pretended to be mad so that my partner would feel guilty"	.72	.70	.75
Tac. 7: Commitment manipulation	"Told my partner that we needed a total commitment to each other"	.18	.19	.18
Tac. 8: Derogation of competitors	"Pointed out to my partner the flaws of another man (or woman)"	.75	.75	.74

(Continued)

Table 1 (Cont.)

Scale	Example Item	Total	Male	Female
Cat. 3: Positive inducements		.74	.76	.75
Tac. 9: Resource display	“Bought my partner an expensive gift”	.76	.74	.80
Tac. 10: Sexual inducements	“Acted sexy to take my partner’s mind off other men (or women)”	.53	-.53	.52
Tac. 11: Appearance enhancement	“Made sure that I looked nice for my partner”	.81	.80	.81
Tac. 12: Love and care	“Was helpful when my partner really needed it”	.65	.67	.62
Tac. 13: Submission and debasement	“Told my partner that I would change in order to please her”	.62	.62	.59
Dom. 2: Intrasexual manipulations		.54	.51	.60
Cat. 4: Public signals of possession		.68	.69	.67
Tac. 14: Verbal possession signals	“Mentioned to other men (or women) that my partner was taken”	.56	.55	.58
Tac. 15: Physical possession signals	“Held my partner closer when another man (or woman) walked into the room”	.81	.82	.79
Tac. 16: Possessive ornamentation	“Gave my partner jewelry to signify that she was taken”	.51	.57	.50
Cat. 5: Intrasexual negative inducements		.54	.45	.63
Tac. 17: Derogation of mate	“Told others my partner was a pain”	.69	.62	.80

(Continued)

Table 1 (Cont.)

Scale	Example Item	Total	Male	Female
Tac. 18: Intrasexual threats	“Told other men (or women) to stay away from my partner”	.78	.75	.82
Tac. 19: Violence against rivals	“Hit a man (or woman) who made a pass at my partner”	.66	.42	.82
NEO-PI-R				
Neuroticism		.84	.82	.88
Extroversion		.74	.71	.80
Openness		.71	.70	.72
Agreeableness		.73	.71	.74
Conscientiousness		.83	.83	.84

Note. Dom.: mate retention domains; Cat.: mate retention categories; Tac.: Mate retention tactics.

in their initial mate selection (Buss, 1989), successful male mate retention tactics should involve the continued provision of resources.

Men, on the other hand, universally place a greater premium than do women on physical appearance in their initial mate selection (Buss, 1989), although this sex difference is attenuated in short-term mating as contrasted with long-term mating (Buss & Schmitt, 1993).

Physical attractiveness, contrary to decades of conventional wisdom in the social sciences, provides a wealth of information about a woman's age, health, and fertility (Sugiyama, 2005; Symons, 1979). Consequently, successful female mate retention tactics are predicted to involve appearance enhancement. These two hypotheses about sex difference in the usage and effectiveness of mate retention tactics have been confirmed in American samples, including married couples (Buss, 1988b; Buss & Shackelford, 1997), as well as a Croatian sample (Kardum et al., 2006). It remains unknown whether these sex differences generalize to other cultures.

Two other sex differences have been discovered in American samples, although these were not predicted in advance. First, men were found to use the submission and self-abasement (e.g., "I went along with everything she said"; "I acted against my will to let her have her way") tactic more frequently than women, both in undergraduate dating couples and samples of married couples (Buss, 1988b; Buss & Shackelford, 1997). This sex difference was also found in a Croatian sample (Kardum et al., 2006). The greater use of submission by men is particularly interesting, in that it goes against the common stereotype of women as the more submissive sex. It remains unknown whether this counterintuitive sex difference occurs in other cultures, such as Spain.

The other consistent sex difference discovered in American samples involves the use of intrasexual threats (e.g., "I threatened to hit the guy who was making moves on my partner"), with males using this tactic more frequently than females (Buss, 1988b; Buss & Shackelford, 1997). Unlike the use of submission and self-abasement, the greater use of violence and violent threats accords with both gender stereotypes, as well as with empirical findings. Men commit the vast majority of acts of same-sex violence, including homicide (Archer, 2009; Daly & Wilson, 1988). Based on these prior findings, we anticipated that men more than women would use intrasexual threats and violence in their mate retention tactics in the current Spanish sample.

Relationship Status and Mate Retention

Theoretically, the link between relationship status, particularly degree of commitment, and mate retention effort is expected to be positive. In short-term uncommitted sexual relationships, for example, the problem of mate retention is not paramount. Thus, we predicted that effort allocated to mate retention should be higher in committed relationships than in less committed relationships—a prediction that has been confirmed in a limited sample of dating couples (Buss, 1988b). On the other hand, as the relationship progresses and commitment becomes more secure, less effort may need to be expended on mate retention. The link between degree of relationship commitment and effort allocated to mate retention has not yet been thoroughly investigated. Consequently, the current study examined mate retention tactics among couples who were engaged or married (high commitment) as contrasted with single or dating (lower commitment).

Personality and Mate Retention

No prior research has explored the relationship between personality traits and tactics of mate retention. Nonetheless, several predictions were made, based on recent conceptualizations of personality traits. Specifically, Neuroticism has been hypothesized to reflect individual differences in sensitivity to the adaptive problem of social exclusion. High Neuroticism has been hypothesized to be beneficial in causing increased vigilance to social danger (Nettle, 2006; Tamir, Robinson, & Solberg, 2006). One form of social danger comes from mate poachers, who threaten to lure a romantic partner away from an existing relationship (Schmitt & Buss, 2001). A related social danger comes from threats from the partner indicating defection from the existing relationship. Thus, we hypothesized that those high on Neuroticism would ratchet up the amount of effort allocated to mate retention, given their sensitivity to social threats.

The trait of Conscientiousness reflects a long-term strategy of delayed gratification and tenacity of goal pursuit versus a more impulsive strategy that involves low inhibition against seizing immediate adaptive benefits (Nettle, 2006). High Conscientiousness is a personality trait linked with long-term resource acquisition and successful hierarchy negotiation (Kyl-Heikku & Buss, 1996; Lund, Tamnes, Moestue, Buss, & Vollrath, 2007). Consequently, we

expected that those high on Conscientiousness would be better able to use resource display as a tactic of mate retention.

Agreeableness is linked with a cooperative strategy (Buss, 1991b, 1996; Nettle, 2006). The trait of aggressiveness, the low end of Agreeableness, is linked with a host of cost-inflicting tactics in social interaction (Larsen & Buss, 2008). Those low on Agreeableness, for example, tend to be more abusive, jealous, and sexually withholding toward their spouses (Buss, 1991a). Thus, we expected that those low on Agreeableness would be more likely to use cost-inflicting rather than benefit-bestowing tactics of mate retention.

Extraversion is a personality trait linked with aspects of sexuality, such as trying out different sexual positions and acquiring a variety of different sexual partners (Eysenck, 1976; Nettle, 2006). Consequently, we expected that those high on Extraversion would be more adept at providing sexual inducements to a partner as a tactic of mate retention. We made no predictions with respect to the trait of Openness.

METHOD

Participants

The sample consisted of 893 participants (641 women and 252 men). The mean age was 22.23 ($SD = 6.04$, 20–50 range). The mean age for men was 23.28 ($SD = 7.24$). The mean age for women was 21.83 ($SD = 5.47$).

The sample was divided into the following mating status categories: single (33.2%), dating (13.8%), engaged (48%), and married (5%). Because there was only one participant (female) who had the mating status of being divorced, she was dropped from subsequent analyses. Participants were further instructed, “If you have never had a relationship, please do not complete this questionnaire.” All those who had never been in a romantic relationship were excluded from the current study. Those who had previously been in a relationship, including the one divorced participant, but were not currently in a relationship, were considered “single.”

Research Instruments

Participants completed a set of research instruments that included a five-factor personality instrument, the NEO-PI-R (Costa & McCrae, 1992), the Mate Retention Inventory (MRI; Buss, 1988b), and 10 other instruments as part of a larger data collection. Confidentiality and anonymity were ensured.

Translation of the MRI. The MRI has been shown to be a reliable and valid measure of mate retention tactics (Shackelford, Goetz, & Buss,

2005). The MRI was first translated from English to Spanish by one bilingual speaker. Two teachers from International British Yeoward School (a British school in Tenerife Island) made the back translation. Four versions of the MRI were then created: female heterosexual, male heterosexual, female homosexual, and male homosexual. Each participant chose the relevant version to complete. Those currently in a romantic relationship were asked to complete the MRI with respect to their current relationship. Those who had previously been in a relationship, but were not currently in a relationship, were asked to complete the MRI with respect to their most recent relationship. Thus, while those currently in a relationship reported on acts of mate retention within the past year, those who had previously been in a relationship reported on acts of mate retention for the last year of their relationship.

Participants read these specific instructions: "On the following pages are listed a series of acts or behaviors. In this study, we are interested in the acts that people perform in the context of their relationship with their romantic partner. For each act, use the following scale to indicate how frequently *you* performed the act *within the past ONE year*: 0 = *Never* performed this act; 1 = *Rarely* performed this act; 2 = *Sometimes* performed this act; 3 = *Often* performed this act. Please write in the blank to the left of each item the number that best represents how frequently you performed the act *within the past ONE year*. For example, if you *never* performed the act within the past one year, write a '0' in the blank to the left of the item."

Procedure

Data collection occurred during two academic years (2006–2007 and 2007–2008) from students of a Personality Psychology course. First, the students downloaded a file from a Web site that contained those instruments, answered it in 1 week, and then sent the file to the first author by email. Second, the students could have one additional point if 10 friends also completed the instruments. Friends could be students or workers or relatives. All participants, including friends, sent their responses directly via email to the first author. All participants were offered the opportunity to receive their personality profile and an explanation of its meaning—a procedure designed in part to increase honest responding. All participants completed the instruments in the same order. The NEO-PI-R appeared first in the battery; the MRI appeared fourth out of the 12 instruments.

RESULTS

The small number of homosexual and bisexual participants precluded separate analyses for these subsamples. Because the relation-

ship dynamics of those with these sexual orientations may differ in currently unknown ways from those of heterosexual relationships, these small subsamples were excluded from subsequent analyses.

Reliabilities of the MRI and NEO-PI-R

Cronbach's alpha reliabilities were computed for each of the mate retention tactic clusters, as well as for the five personality variables assessed through the NEO-PI-R (see Table 1). These reliability values are roughly comparable with those found for American samples (Buss, 1988b; Buss & Shackelford, 1997; Buss, Shackelford, & McKibbin, 2008; Shackelford, Goetz, & Buss, 2005) and sufficiently high to proceed with further statistical analyses.

Multiple Regression Analyses of Predictors of Mate Retention Tactics

We conducted separate regression analyses for each of the outcome variables, that is, the 26 clusters of mate retention tactics (see Table 2). This permitted the simultaneous analysis of the unique effects of gender (female = 0; male = 1), commitment status (single = 1; dating = 2; engaged = 3; married = 4), age, and personality variables on mate retention. We consider sex differences in mate retention tactics, relationship status differences, and personality correlates. As an exploratory analysis, we also examined whether mate retention tactics covaried with age, although we had no a priori hypotheses with respect to age.

Gender Differences in Mate Retention Tactics

The largest gender differences supported the first two evolution-based hypotheses. Men more than women used resource display as a mate retention tactic ($\beta = .22, p < .0001$). Women more than men used appearance enhancement as a mate retention tactic ($\beta = -.21, p < .0001$).

Men more than women used the submission and self-abasement mate retention tactic ($\beta = .13, p < .0001$), as well as intrasexual threats ($\beta = .12, p < .001$), replicating prior research on American samples. Two unpredicted sex differences showing greater female than male use were vigilance ($\beta = -.14, p < .002$) and punishing mate's threats of infidelity ($\beta = -.11, p < .001$). Two unpredicted sex differences showing greater male than female use were sexual

Table 2
Regressions Using Age, Gender, Commitment Status, and Personality Traits

Scale	Coefficients Standardized β									
	R^2	Age	Gender	Commitment	N	E	O	A	C	
Dom. 1: Intersexual manipulations	.16	-.11*	-.03	.18*	.27*	.18*	-.01	-.18*	.05	
Cat. 1: Direct guarding	.12	-.04	-.06	.04	.29*	.10*	.00	-.17*	-.05	
Tac. 1: Vigilance	.14	-.06	-.14***	.06	.26***	.14***	-.04	-.19***	.01	
Tac. 2: Concealment of mate	.04	-.01	.06	-.06	.13***	.03	-.07*	-.11***	-.06	
Tac. 3: Monopolization of time	.09	-.02	-.07*	.05	.22***	.06	.00	-.15***	.00	
Cat. 2: Intersexual negative inducements	.17	-.06	-.06	.06	.36***	.17***	-.03	-.20***	.00	
Tac. 4: Jealousy induction	.13	-.01	-.10**	-.09**	.18***	.16***	.02	-.18***	-.12***	
Tac. 5: Punish mate's infidelity	.14	-.06	-.11**	.00	.31***	.16***	-.05	-.12***	.00	
Tac. 6: Emotional manipulation	.16	-.11**	-.03	.09**	.31***	.07*	-.06	-.18***	-.01	
Tac. 7: Commitment manipulation	.07	-.10**	.09*	.22***	.15***	.05	.00	.01	.11**	
Tac. 8: Derogation of competitors	.15	-.05	-.05	.02	.24***	.14***	-.02	-.28***	-.04	
Cat. 3: Positive inducements	.15	-.13***	.05	.25***	.13***	.21***	.05	-.15***	.11**	
Tac. 9: Resource display	.13	-.11**	.22***	.24***	.08*	.18***	.06	-.05	.11**	
Tac. 10: Sexual inducements	.08	-.06	.09*	.09**	.10**	.16***	.09**	-.15***	.01	
Tac. 11: Appearance enhancement	.18	-.08*	-.21***	.18***	.11**	.22***	-.01	-.14***	.15***	
Tac. 12: Love and care	.14	-.22***	.02	.36***	.01	.02	.10**	-.05	.06	
Tac. 13: Submission and abasement	.07	-.04	.13***	.04	.21***	.09**	-.06	-.10**	.01	

(Continued)

Table 2 (Cont.)

Scale	Coefficients Standardized β									
	R^2	Age	Gender	Commitment	N	E	O	A	C	
Dom. 2: Intrasexual manipulations	.16	-.20***	.11**	.11**	.17***	.17***	-.01	-.19***	.03	
Cat. 4: Public signals of possession	.13	-.21***	.09**	.14***	.12***	.17***	.01	-.16***	.04	
Tac. 14: Verbal possession signals	.13	-.17***	-.06	.24***	.10**	.20***	.01	-.13***	.02	
Tac. 15: Physical possession signals	.09	-.20***	.09**	.08*	.10**	.10**	-.01	-.12***	.06	
Tac. 16: Possessive ornamentation	.11	-.12***	.21***	.01	.11**	.14***	.02	-.14***	.03	
Cat. 5: Intrasexual negative inducements	.12	-.09**	.11**	.01	.22***	.10**	-.05	-.19***	-.02	
Tac. 17: Derogation of mate	.04	-.04	-.03	-.05	.08*	.03	-.01	-.13***	-.09*	
Tac. 18: Intrasexual threats	.12	-.11**	.12***	.05	.21***	.11**	-.06	-.18***	.01	
Tac. 19: Violence against rivals	.04	-.04	.08*	-.04	.14***	.05	-.01	-.09**	-.01	

Commitment: single = 1, dating = 2, engaged = 3, married = 4. Gender: female = 0, male = 1.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

inducements ($\beta = .09$, $p < .02$) and possessive ornamentation ($\beta = .21$, $p < .0001$). The most frequently reported mate retention tactic was the use of love and care, which showed no gender differences for the total sample.

Relationship Status and Differences in Mate Retention Tactics

Those in more committed relationships tended to use commitment manipulation, resource display, appearance enhancement, love and care, and verbal signals of possession more than women in less committed relationships (all $ps < .0001$). To a somewhat lesser extent, those in committed relationships also used emotional manipulation ($p < .009$) and physical signals of possession ($p < .02$) more than those in less committed relationships. In contrast, those in less committed relationships tended to use jealousy induction more than their more committed peers ($p < .02$). This finding is especially interesting in that jealousy induction has been hypothesized to be a tactic more heavily used by people in circumstances in which they are more committed to their relationship than their partner, inducing jealousy as a tactic for attempting to increase the commitment of their partner (Buss, 2000; White, 1980).

Personality and Mate Retention Tactics

We have predicted that those scoring high on Neuroticism would engage in heavier usage of mate retention tactics than their more emotionally stable counterparts. This prediction was robustly confirmed with 16 of the 19 mate retention tactics. Neuroticism was positively associated with the reported usage of vigilance, concealment of mate, monopolization of mate's time, jealousy induction, punishing mate's threat to infidelity, emotional manipulation (e.g., guilt induction), commitment manipulation, derogation of competitors (a tactic specifically aimed at potential interlopers), appearance enhancement, submission and self-abasement, verbal signals of possession, physical signals of possession, possessive ornamentation, derogation of mate, intrasexual threats, and violence against rivals.

Because the trait of Conscientiousness is linked with achievement and resource acquisition, we expected that high scorers would be more likely to use resource display as a tactic of mate retention. This expectation was confirmed ($\beta = .11$, $p < .002$). Conscientiousness was

also positively associated with appearance enhancement and negatively correlated with jealousy induction and mate derogation.

Agreeableness was negatively correlated with the following cost-inflicting mate retention tactics: punishing mate's infidelity threats, emotional manipulation, and derogation of one's mate. Those low on the trait of Agreeableness also engage in more sequestering and direct mate-guarding behavior, as reflected in the tactics of concealing the mate, monopolizing the mate's time, and increasing vigilance of the mate. Low scorers on Agreeableness were also more likely to inflict costs on rivals, as reflected in the tactics of verbal derogation of competitors, intrasexual threats, and violence against rivals.

Those high on Extraversion used sexual inducements as mate retention efforts more than low scorers ($\beta = .16, p < .0001$). Extraversion was also positively correlated with jealousy induction, punishment of mate's infidelity threats, derogation of competitors, resource display, appearance enhancement, verbal signals of possession, and possessive ornamentation.

Openness was negatively associated with the tactic of concealing one's mate, perhaps revealing within romantic relationships a social openness that reflects the more general personality disposition. Openness was positively correlated with the use of sexual inducements and the use of love and care.

Age and Mate Retention Tactics

Age was negatively correlated with the following tactics: emotional manipulation, commitment manipulation, resource display, appearance enhancement, love and care, verbal and physical signals of possession, possessive ornamentation, and intrasexual threats. Overall, younger individuals of both sexes engaged in both more intersexual and intrasexual tactics of mate retention than did older individuals.

DISCUSSION

For people who seek to implement a long-term mating strategy, mates gained must be retained to reap the rewards inherent in effort allocated to mate assessment, mate selection, and tactics of attraction. Over human evolutionary history, failures at mate retention often would have resulted in diminished reproductive success due to the failure to secure relationship resources against mate poachers

and partner defection. The hypothesis that humans have evolved adaptations designed to hold on to their mates, ward off mate poachers, and prevent mate defections has received growing support from empirical studies.

This evidence comes from empirical studies of “design features” predicted in advance by evolutionary hypotheses about mate retention adaptations. Mate retention effort increases to the degree that an individual is confronted with the problem of partner infidelity (Buss & Shackelford, 1997). The problem of mate retention is also more severely confronted when mating with partners who are high on sociosexuality—those who are more likely to pursue a short-term mating strategy. This design feature has also been confirmed in a Croatian sample, which discovered that women mated with men high on sociosexuality increase their level of intersexual mate retention tactics (those targeted toward the partner), whereas men mated to women high on sociosexuality are more likely to engage in intrasexual mate guarding (those designed to fend off mate poachers; Kardum et al., 2006).

Mate retention effort is sensitive to sex-linked components of the mate value of romantic partners, such as youth and physical attractiveness (components of female mate value) and resources (a component of male mate value; Buss & Shackelford, 1997). Mate retention tactics are sex-differentiated, corresponding to sex differences in the mate preferences of the opposite sex (Buss, 1988b; Buss & Shackelford, 1997). All these findings support the general hypothesis that humans have evolved adaptations for mate retention that have psychological design features that cause individuals to increase or decrease effort allocated to mate retention, depending on the sex of the mate retainer, to the degree that mate poachers and defection are threats, and to the degree that one is mated to a partner of high mate value.

The current study is the first to explore the usage and predictors of mate retention tactics in a Spanish sample. In addition to testing hypotheses about gender differences, the current study explores two important classes of predictors that have not previously been examined—degree of commitment as indexed by relationship status and personality traits as indexed by the Big Five.

Gender Differences in Mate Retention

The current study in Spain replicated gender differences in mate retention that have been discovered in American and Croatian

samples. Men more than women use resource display, and women more than men use appearance enhancement as mate retention tactics. The robustness of these sex differences lends support to the hypothesis that these two sex-differentiated design features are core components of the human mate retention adaptation.

The current study also discovered that men more than women use submission and self-abasement in mate retention—a finding contrary to common stereotypes that women are the more submissive sex. This sex difference too has been found in American samples of married and dating couples (Buss, 1988b; Buss & Shackelford, 1997), as well as in a Croatian sample (Kardum et al., 2006). Although not predicted by any extant theories of which we are aware, the replicability of this sex difference calls for further research and theoretical attention. One speculation is that since women are more likely to end relationships than men, submission and self-abasement represents a last-ditch desperation tactic by some men to ward off an impending breakup.

Women more than men punished their mate's infidelity threats as a mate retention tactic. This sex difference was also found in a sample of American married couples (Buss & Shackelford, 1997) as well as in the Croatian study (Kardum et al., 2006). Although not predicted in advance, this consistent sex difference warrants further research and theoretical attention. One speculation is that women confront the problem of a mate's sexual infidelity more than do men—men are more likely than women to have sexual affairs (Buss, 2003). Consequently, women are more likely to face this problem, which may explain the sex difference in the frequency with which they report punishing their mate's signals of infidelity. Circumstantial support for this speculation comes from the correlation between the use of this tactic and a partner's proclivity to pursue short-term matings (Kardum et al., 2006), although more direct evidence is needed to confirm it.

Relationship Status and Mate Retention

The current study found that women in more committed relationships (engaged or married) tended to use commitment manipulation (e.g., discussing marriage or total commitment, getting pregnant), resource display, appearance enhancement, love and care, and verbal signals of possession more than women in less committed relationships (single or dating). Men in more committed relationships, like

their committed female counterparts, also used commitment manipulation, resource display, and love and care more than did men in less committed relationships. Although these findings seem intuitively obvious in retrospect, they provide the first evidence of its kind documenting precisely which mate retention tactics characterize committed as opposed to less committed mating relationships.

Those in less committed relationship tended to use jealousy induction more than their more committed peers—flirting with other men in front of their partners, showing interest in other men to make their partners jealous, going out with others to make their partners jealous, and talking to other men to make their partners jealous. Jealousy induction has been hypothesized to be a tactic effective for those who are more committed to the relationship than their partner (Buss, 2000; White, 1980). It presumably functions to increase the partner's perceptions of their desirability by showing that others find them desirable, and thus that they have alternative mating options. Whether jealousy induction in relationships characterized by a mate value discrepancy actually succeeds in increasing their partner's commitment remains an important topic for future research.

Personality and Mate Retention

Although personality researchers have long emphasized the importance of personality dispositions for social interaction (e.g., Buss, 1987, 1996; Eysenck, 1976), only recently have personality theorists explicitly conceptualized specific personality traits within an evolutionary framework (e.g., Buss & Hawley, 2011; Denissen & Penke, 2008; Nettle, 2006).

The trait of Neuroticism has been hypothesized to reflect high sensitivity to social threats, with high scorers benefiting by increasing social vigilance (Nettle, 2006; Tamir et al., 2006). The current study provides support for this conceptualization, finding that Neuroticism is strongly positively associated with increased use of vigilance as a tactic of mate retention. Neuroticism was also significantly correlated with an array of other mate retention tactics, including mate concealment, monopolizing mate's time, jealousy induction, punishing mate's threat to infidelity, emotional manipulation, derogation of competitors, submission and self-abasement, derogation of mates, intrasexual threats, and intrasexual violence.

Although these findings support the social threat interpretation of Neuroticism, specifically in the context of romantic relationships, several key questions remain unanswered: Why do high scorers on Neuroticism feel so socially threatened? Have they endured previous social experiences, such as mate or friend defections, that render them especially vigilant about social threats? Do those high on Neuroticism possess mate value flaws that render them especially vulnerable to being socially rejected? And critically, does the tremendous effort that high scorers on Neuroticism devote to mate retention actually work in keeping a mate? These questions await future research.

The trait of Agreeableness proved to be a good predictor of mate retention tactics. Those at the disagreeable end of this dimension tend to perform a host of cost-inflicting tactics, both toward their partner (e.g., jealousy induction, mate derogation, punishing mate's threat to infidelity) as well as toward rivals (e.g., derogation of competitors, intrasexual threats). Although we expected that high Agreeableness would be linked with benefit-bestowing mate retention tactics, the current study found no evidence for this. Resource display and appearance enhancement as a mate retention tactic instead correlated positively with the trait of Conscientiousness.

We had predicted that Extraversion would be correlated with the sexual inducement mate retention tactic, given the link between Extraversion, sexual experience, and short-term mating strategies. This expectation was supported. Extraversion was also significantly correlated with the use of jealousy induction, punishment of mate's infidelity threats, derogation of competitors, resource display, verbal signals of possession, and possessive ornamentation.

Limitations of the Study

This study contained several limitations that should be kept in mind when interpreting its results. First, both personality traits and mate retention tactics were obtained through self-report as the data sources. Although previous research has documented reasonable correspondence between self-reports and partner reports of mate retention (Shackelford, Goetz, & Buss, 2005), as well as between self-reports and third-party reports of personality (e.g., McCrae & Costa, 2008), future studies could profitably use independent or multiple data sources to assess both. Second, although the current sample possessed some age diversity (range: 20–50), the sample was pre-

dominantly concentrated in the age of the early twenties. Future studies could examine older samples to determine whether the results found in this study generalize across the life span. A third limitation is that the current study was conducted only within a single country—Spain. Future research could profitably explore cultures that differ along dimensions such as individualism and collectivism to explore the degree to which tactics of mate retention and predictors of mate retention remain consistent across cultures, or conversely vary across cultures in predictable ways.

Conclusions

Given these limitations, the current study possesses some unique qualities that render its findings valuable—its large sample size, the fact that this represents the first study conducted on mate retention tactics in Spain, the unique analysis of the links between relationship commitment and mate retention, and the unique analysis of the links between personality and mate retention.

More broadly, the current study makes a contribution to two growing interdisciplinary fields that have been rising in importance. The first is the integration of personality and social psychology (Swann & Seyle, 2005). Despite decades of separation between the two subdisciplines, new syntheses are being forged, and the current study contributes to those integrations. Specifically, personality traits appear to have a profound effect on tactical maneuvers within romantic relationships. Personality does not passively reside within individuals but actively influences the tactics that individuals use to impact those around them. The second interdisciplinary field to which this study contributes is evolutionary psychology. Although evolutionary psychology historically has focused on species-typical or sex-typical adaptations, the current study contributes to the recognition of the importance of adaptively patterned individual differences (Buss & Hawley, 2011)—a trend that we expect will become increasingly important in the coming decades.

REFERENCES

- Andersson, M. (1994). *Sexual selection*. Princeton, NJ: Princeton University Press.
- Archer, J. (2009). Does sexual selection explain human sex differences in aggression? *Behavioral and Brain Sciences*, **32**, 249–311.

- Buss, D. M. (1987). Selection, evocation, and manipulation. *Journal of Personality and Social Psychology*, **53**, 1214–1221.
- Buss, D. M. (1988a). The evolution of human intrasexual competition: Tactics of mate attraction. *Journal of Personality and Social Psychology*, **54**, 616–628.
- Buss, D. M. (1988b). From vigilance to violence: Tactics of mate retention in American undergraduates. *Ethology and Sociobiology*, **9**, 291–317.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, **12**, 1–49.
- Buss, D. M. (1991a). Conflict in married couples: Personality predictors of anger and upset. *Journal of Personality*, **59**, 663–703.
- Buss, D. M. (1991b). Evolutionary personality psychology. *Annual Review of Psychology* (pp. 459–491). Palo Alto, CA: Annual Reviews.
- Buss, D. M. (1996). Social adaptation and five major factors of personality. In J. S. Wiggins (Ed.), *The five-factor model of personality: Theoretical perspectives* (pp. 180–207). New York: Guilford Press.
- Buss, D. M. (2000). *The dangerous passion: Why jealousy is as necessary as love and sex*. New York: Free Press.
- Buss, D. M. (2003). *The evolution of desire* (Rev. ed.). New York: Basic Books.
- Buss, D. M., & Hawley, P. (2011). *The evolution of personality and individual differences*. New York: Oxford University Press.
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, **100**, 204–232.
- Buss, D. M., & Shackelford, T. K. (1997). From vigilance to violence: Mate retention tactics in married couples. *Journal of Personality and Social Psychology*, **72**, 346–361.
- Buss, D. M., Shackelford, T. K., & McKibbin, W. F. (2008). The Mate Retention Inventory-Short Form (MRI-SF). *Personality and Individual Differences*, **44**, 322–334.
- Costa, P. T., & McCrae, R. R. (1992). *NEO PI-R, Revised NEO Personality Inventory and NEO Five-Factor Inventory (NEO-FFI)*. Odessa, FL: Psychological Assessment Resources (Spanish translation, 1999, TEA Ediciones, S.A.).
- Daly, M., & Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine.
- Darwin, C. (1871). *The descent of man and selection in relation to sex*. London: Murray.
- Denissen, J. J. A., & Penke, L. (2008). Motivational individual reaction norms underlying the five-factor model of personality: First steps toward a theory-based conceptual framework. *Journal of Research in Personality*, **42**, 1285–1302.
- Dubois, F., & Cezilly, F. (2002). Breeding success and mate retention in birds: A meta-analysis. *Behavioral Ecology and Sociobiology*, **52**, 357–364.
- Eysenck, H. J. (1976). *Sex and personality*. Austin: University of Texas Press.
- Goetz, A. T., Shackelford, T. K., Weekes-Shackelford, V. A., Euler, H. A., Hoier, S., Schmitt, D. P., et al. (2005). Mate retention, semen displacement, and human sperm competition: A preliminary investigation of tactics to prevent and correct female infidelity. *Personality and Individual Differences*, **38**, 749–763.
- Kardum, I., Hudek-Knezevic, J., & Gracanin, A. (2006). Sociosexuality and mate retention in romantic couples. *Psihologijske Teme*, **5**, 277–296.

- Kyl-Heku, L., & Buss, D. M. (1996). Tactics as units of analysis in and personality psychology: An illustration using tactics of hierarchy negotiation. *Personality and Individual Differences*, **21**, 497–517.
- Larsen, R., & Buss, D. M. (2008). *Personality: Domains of knowledge about human nature* (3rd ed.). New York: McGraw-Hill.
- Lund, O. C. H., Tamnes, C. K., Moestue, C., Buss, D. M., & Vollrath, M. (2007). Tactics of hierarchy negotiation. *Journal of Research in Personality*, **41**, 25–44.
- McCrae, R. R., & Costa, P. T., Jr. (2008). The five-factor theory of personality. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality* (pp. 159–181). New York: Guilford Press.
- Nettle, D. (2006). The evolution of personality variation in humans and other animals. *American Psychologist*, **61**, 622–631.
- Reichard, U. H. (2002). Monogamy—A variable relationship. *Max Planck Research*, **3**, 62–67.
- Schmitt, D. P., & Buss, D. M. (1996). Strategic self-promotion and competitor derogation: Sex and context effects on the perceived effectiveness of mate attraction tactics. *Journal of Personality and Social Psychology*, **70**, 1185–1204.
- Schmitt, D. P., & Buss, D. M. (2001). Human mate poaching: Tactics and temptations for infiltrating existing mateships. *Journal of Personality and Social Psychology*, **80**, 894–917.
- Shackelford, T. K., Goetz, A. T., & Buss, D. M. (2005). Mate retention in marriage: Further evidence of the reliability of the Mate Retention Inventory. *Personality and Individual Differences*, **39**, 415–425.
- Shackelford, T. K., Goetz, A. T., Buss, D. M., Euler, H. A., & Hoier, S. (2005). When we hurt the ones we love: Predicting violence against women from men's mate retention tactics. *Personal Relationships*, **12**, 447–463.
- Starratt, V. G., Shackelford, T. K., Goetz, A. T., & McKibbin, W. F. (2007). Male mate retention behaviors vary with risk of female infidelity and sperm competition. *Acta Psychologica Sinica*, **39**, 523–527.
- Sugiyama, L. (2005). Physical attractiveness in adaptationist perspective. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 292–343). Hoboken, NJ: Wiley.
- Swann, W. B., Jr., & Seyle, C. (2005). Personality psychology's comeback and its emerging symbiosis with social psychology. *Personality and Social Psychology Bulletin*, **31**, 155–165.
- Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford.
- Tamir, M., Robinson, M. D., & Solberg, E. C. (2006). You may worry, but can you recognize threats when you see them? Neuroticism, threat identifications, and negative affect. *Journal of Personality*, **74**, 1481–1506.
- Thornhill, R., & Alcock, J. (1983). *The evolution of insect mating systems*. Cambridge, MA: Harvard University Press.
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man, 1871–1971* (pp. 136–179). Chicago: Aldine.

- VanderLaan, D. P., & Vasey, P. L. (2008). Mate retention behavior of men and women in heterosexual and homosexual relationships. *Archives of Sexual Behavior, 37*, 572–585.
- White, G. L. (1980). Inducing jealousy: A power perspective. *Personality and Social Psychology Bulletin, 6*, 222–227.
- Williams, G. C. (1975). *Sex and evolution*. Princeton, NJ: Princeton University Press.

