

Romantic Love and Family Organization: A Case for Romantic Love as a Biosocial Universal

Victor de Munck¹, Andre Korotayev², and Jennifer McGreevey³

Abstract

We propose that romantic love is a biosocial phenomenon that may well be a universal and that its cultural aspects are a product of social conditions. This position is unique because romantic love is promoted as a cultural rather than social universal. We argue that culture, social, and psychological phenomena are too frequently conflated and their core definitional features underdefined by researchers. Culture refers to learned practices that have collectively shared meanings to the members of a society. Under social conditions in which romantic love does not confer reproductive and health advantages to a mother and child, it will often be suppressed, undeveloped, and rejected as a cultural component. Through a cross-cultural study, we show that female status and family organization are important features that help in regulating the sociocultural importance of romantic love as a basis for marriage.

Keywords

romantic love, family organization, female status, cultural universal, social conditions, reproduction, postmarital residence

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The authors propose that romantic love is more likely to be a biosocial universal than a biocultural universal. We understand that there is a great deal of overlap between social and cultural, but we intend to make clear the distinctions, as we see them, between these two concepts. Boyd and Richerson (1985, 2005) and Boehm (1999, 2012) have been proponents of a biocultural approach to the study of “the origin and evolution of cultures.” These researchers have developed a biocultural approach that remains true to the ethnographic cross-cultural approach of anthropology first advocated by Tylor (1889). Our work fits into this model for cross-cultural research, with the notable addition that the focus is on social conditions and practices from which cultural configurations emerge. In this study, we hope to accomplish the following tasks: First, we intend to demonstrate that the social aspect of romantic love has been neglected in cross-cultural research on love and is just as important as culture, if not more so, for the study of romantic love; second, we intend to show that female status and family organization are important features in regulating the sociocultural importance of romantic love, particularly (but not exclusively) as a basis for marriage; third, in our discussion, we present an argument for attending more carefully to definitions of core concepts (e.g., culture, romantic love) and the

explanatory limits and strengths (or parameters) of those definitions; and fourth, we seek to stimulate interest in developing better (i.e., more reliable and valid) codings of the concept of romantic love (and other expressive/subjective concepts) in the cross-cultural databases. We began such studies over 15 years ago (de Munck & Korotayev, 1999, 2007, 2009, 2011) and this article is a direct continuation of these studies.

Romantic Love: A Cross-Cultural or Cross-Social Variable?

Jankowiak and Fisher began their groundbreaking 1992 cross-cultural study on whether or not romantic love is a cultural universal with the following statement: “The anthropological

¹ Vytautas Magnus University and SUNY New Paltz, Kaunas, Lithuania

² National Research University Higher School of Economics and Oriental Institute of the Russian Academy of Sciences, Moscow, Russian Federation

³ University of Tallinn, Tallinn, Estonia

Corresponding Author:

Victor de Munck, Vytauto Didziojo Universitetas, Jonavos g. 66–305, Kaunas 44248, Lithuania.

Email: demunckv@gmail.com



study of romantic (or passionate) love is virtually nonexistent due to the widespread belief that romantic love is unique to Euro-American culture” (p. 149). Since that time, the study of romantic love, particularly in non-Western cultures, has thrived. A consequence of those studies is that the cultural universality of romantic love has become an axiom of evolutionary psychologists and anthropologists. The cross-cultural literature on romantic love often has an evolutionary aim, in part because it is difficult to imagine that such a strong motivational force as romantic love could be an independent cultural construct. How could each culture develop such a complex conceptual affective-behavioral complex with distinct (and at times, nonadaptive) features on its own? If romantic love is a cultural universal, then it would be completely implausible that it was an independent but universal cultural innovation.

Jankowiak (1995) and others have noted that where romantic love appears absent, it is likely due to sociocultural suppression. In such cultures, expressions of romantic love are not only discouraged but also punished. Social conditions then seem to serve as a kind of regulator for the cultural elaboration or suppression of expressions of romantic love. The import of the Jankowiak and Fischer’s study was that if romantic love is a cultural universal, then it must have evolutionary roots and thus a direct link between biology and culture was forged regarding not phenotypical features of humans but cultural features of human society! Researchers were motivated to study and find those roots through attachment theory (Hrdy, 2009; Shaver & Mikulincer, 2006), mating strategies and jealousy as a mate-guarding device (Buss, 1989, 2003; Schmitt, 2005, 2006); universality of features of romantic love (de Munck, Korotayev, Khaltourina, & de Munck, 2011; Hatfield & Rapson, 1996; Jankowiak, Volsche, & Garcia, 2015; Lindholm, 1997).

In what appears to be the first cross-cultural study conducted on romantic love, Rosenblatt (1966) sought to look at romantic love and marital residence. His study is also unique in that he expressly and directly sought to link romantic love with particular social (rather than biological, psychological, or cultural) correlates. In his study, he came to the conclusion that romantic love correlates positively with non-neolocal postmarital residence patterns (i.e., where the couple live either with or in proximity to one of the spouse’s parental home). We are concerned with his conclusions and intend in this article to provide an alternative explanation as the first two authors had promised in 1999 (deMunck & Korotayev, 1999, p. 267).

Previous cross-cultural studies by the first two authors attempted either to understand the social conditions that affect the cultural expression of romantic love (deMunck & Korotayev, 1999, 2007), or to determine universal criterial attributes of romantic love (2010, 2011). Our focus in the present paper is on the first of these questions. In the 1999 study, it was discovered that romantic love was most likely to be culturally endorsed and valued when female status was relatively high. Our reasoning was simple—romantic love cannot thrive or be culturally developed under conditions of high patriarchy with low female status where subjective valuations of female status

and personal capacities are likely to rate females as inherently far inferior to males. Such a complex of inequalities should not foster required romantic love, which presumes a mutual assessment of equality on subjective measures of personal worth.

For the first study (de Munck & Korotayev, 1999), we relied on Rosenblatt’s cross-cultural sample in which societies were scored as having high to low levels of romantic love based on 11 criteria coded by two independent researchers so that each society could be rated along a 0–22 point scale (by combining the ratings of the two coders). We dichotomized Rosenblatt’s ratings because we had our doubts that the ratings could be so fine grained as to rank societies along a 22-point scale. We did trust that Rosenblatt’s ratings would be reliable indicators of the less refined distinction between those societies that valued romantic love positively and those that did not.¹ We used the double standard for both premarital and extramarital relations as our indicators of gender inequality. In brief, we found that romantic love tends to be suppressed in cultures that promote a double standard for pre- and extramarital sexual relations; second, we found that where romantic love is culturally endorsed, it becomes a salient criterion for marriage.

In our second study on social conditions favoring the expression of romantic love, the first two authors reasoned that intimacy was a diacritical feature of romantic love and wanted to measure its relationship to female status. As noted, it is one of the three pillars of Sternberg’s (1988, 1998, 2006) triadic theory of romantic love, together with passion and commitment. We did not measure romantic love directly, but inferred that if romantic love correlates with high female status it would follow that so should intimacy. We used different indicators for intimacy and for female status than we used in the first study. We hypothesized that there should be a positive correlation between societies which promote intimate behaviors between husband and wife and female status. Indicators for intimacy were that the husband and wife sleep, eat, and pursue leisure activities together and the husband attends childbirth. We used Whyte’s (1978a, 1978b) 60 cross-cultural variables for female power in traditional societies as the indicators of female status.

Our results showed that overall indicators of intimacy correlated positively with markers of high status for females.² Intimacy by definition implies that the other is considered unique and incommensurable (or not easily replaceable). As we will discuss below in more detail, the social crucible for the development of intimacy is a small number of people who are relatively equal and interact in an informal way that often predisposes the exchange of vulnerable subjective information. By vulnerable we mean that one gives the other person information that if indiscriminately revealed could be harmful to one’s reputation or well-being (Raybeck, 1996).

In most of the literature on romantic love, a necessary criterion is the subjective appraisal of the beloved as occupying a unique and irreplaceable place in the other’s life. The idea that lovers cannot help but see the other in an overemphasized favorable light is captured by Clyde and Susan Hendricks (1988) who titled their paper *Lovers Wear Rose-Colored*

Glasses. Jankowiak and Fischer (1992) write that for romantic love to be present the other must be “idealized.” For Lindholm (1998, 1995), a critic of the idea that romantic love is a cultural universal, the kernel feature of romantic love is a feeling of transcendence that comes from perceiving the other, and the relationship, as unique. Gottschall and Nordlund (2006) describe the importance of both intimacy and idealization when, in their cross-cultural analysis of texts of oral folktales on romantic love, they begin their article by noting that to be in love . . . “is to experience a strong desire for union with someone who is deemed entirely unique” (p. 450). We note that appraising the beloved as unique develops over time and is not part of the first phase of romantic love which is usually unconscious and not directly cognitive.³

Uniqueness must be a necessary but not sufficient condition for romantic love because exclusivity, deep empathy, and the concentrated psychological force directed toward the beloved cannot occur if one thinks of the beloved as commensurable. Yet, one can think of others as unique without loving them. To test this idea, we used a new sample together with the Rosenblatt sample and compared the levels of love with nuclear and various forms of the extended family. We posited that the nuclear family provides a social structure and context for intimacy since there are only the husband and wife as the primary adults in the household, whereas in the extended family, by definition, there are other adults present. In the nuclear situation, the role of both spouses is heightened in importance and thus the function of romantic love becomes more important for the maintenance and well-being of the family. The spouse or mate in extended families is less unique functionally and emotionally than in the nuclear family.

The various criteria for romantic love described by Sternberg (1988, 2006), Harris (1997), Fisher, Aron, Mashek, Li, and Brown (2002), Jankowiak and Fischer (1992), de Munck (2008) and most others who write on the topic consist of a complex of passion/sexual desire, intrusive thinking, the uniqueness of the other, emotional dependency, idealization, commitment, intimacy, altruism, empathy, and the like.⁴ Lindholm hypothesizes that the above psychological states lead to an overall feeling of transcendence, which under the appropriate social conditions, allows lovers to feel as though the relationship will last forever. We believe these criterial features are more likely to be fostered in a social condition of the nuclear rather than the extended family. We posit that there are three conditions under which romantic love is culturally valued, one focuses on family organization (i.e., the nuclear vs. the extended family), a second is the perceived “uniqueness” of the beloved, and third that the beloved is perceived as being of “equal worth” or social value as ego.

The present study also concerns the issue of how to define romantic love, whether it is a “drive” or a psychological predisposition, and as such whether it is an “absolute” or “statistical cultural universal” (Gottschall & Nordlund, 2006, pp. 454–455). Our main contribution to the evolutionary literature on romantic love is to develop the idea that romantic love is a biosocial phenomenon and likely as such this precedes its

development as a cultural phenomenon. We will develop this proposition throughout this article.⁵

In order to situate our study in the evolutionary psychological and cultural literature on romantic love, we begin with a brief critique of some of the findings on romantic love as a cultural universal. As noted above, we do not doubt that romantic love is a biological psychological universal but we are wary of claims that it is a cultural universal, since it is suppressed in some cultures and in the “styles of love” literature (most prominently represented by Hendricks, 2006, 1992, 1988; J. A. Lee, 1976; Sternberg, 2006, 1988) there is evidence that many Westerners are predisposed and prefer styles of love other than erotic or romantic love. Some, it seems, may even be averse to the romantic style of love. As Frankfurt (2006) and Singer (2009) have written, companionate forms of love can also promote successful marital relations and child caretaking perhaps better than can romantic love. Thus, there is great intracultural as well as intercultural variation in the expression and apparent need for romantic love in the lives of people.

Can such a labile concept be a cultural universal or drive, like that for sex or hunger or even the fear of snakes? We suggest that it fits better the analogue of overeating and stress—the potential is there in humans to overeat when they feel high stress, but only some members of a culture actually overeat under those conditions, while others may watch TV, go for a long run, and so on. We hope to make a preliminary case for studying and understanding romantic love as a biosocial universal with the potential to foster or repress cultural constructions of romantic love.

Our data and analysis further demonstrates that romantic love is most likely to be fostered in social conditions that foster gender equality, conditions for intimacy and which confer a reproductive advantage as a result. Our argument is that romantic love is most likely to have a high cultural valence (i.e., endorsed as an important suite of feelings, beliefs, values, and behaviors) when the nuclear family is the culturally prescribed norm and when women have, more or less, status equality with men, and that it is most likely to be suppressed when the extended nonmatrilocal family is the norm.⁶ Cross-cultural variation in leisure or access to birth control technologies may also influence the cultural elaboration or suppression of romantic love.⁷

Romantic Love May Be a Biosocial Universal

The question of whether or not romantic love is a cross-cultural universal seems to have been settled by Jankowiak and Fisher in their much-cited 1992 article “Is Romantic Love a Cultural Universal?” Using the standard cross-cultural sample, they concluded that romantic love was a “near cultural universal” and is found even in societies where there are strong prohibitions against it (1992, pp. 153–154). Various other cross-cultural studies (Buss, 1989; de Munck & Korotayev, 2007; Hatfield & Rapson, 1996; Lindholm, 1998; Rosenblatt, 1966; Schmitt, 2005; Durkin et al., 2004) have been conducted on romantic love. Buss’s research is on 37 societies, using very

different sampling methods in each and Schmitt's is on 48 and 62 countries, respectively; these could be considered convenience samples in the choice of nations and the choice of survey respondents in each nation.

Romantic love has gained a vast number of perspectives since becoming a topic of interest to researchers in recent years. Love, as Buss wrote in an article titled "The Evolution of Love," "is an exquisitely honed set of psychological devices that for humans has served critical utilitarian functions in highly specific contexts" (2006, p. 65). He continues by stating that "these functions are sufficiently numerous to give credence to another aphorism that gets closer to the truth: love is a many-splendored thing" (p. 63). Buss considers romantic love to be an adaptation that became favorable, given the social nature of humans and the long period of infant dependency on their parents. Thus, parental investment relies on developing an enduring bond between the male and female parent, which would seem to be facilitated by romantic love. Buss argues that romantic love evolved to serve the following functions tied to human reproduction: "displaying reproductively relevant resources; providing sexual access; signaling sexual fidelity; promoting relationship exclusivity through mate guarding; displaying commitment; promoting actions that lead to successful reproductive outcomes, providing signals of parental investment" (Buss 2006, p. 66).

Helen Fisher, an anthropologist and one of the leaders in love research, also makes a case for the universality of romantic love. Fisher believes "romantic love is one of three discrete, interrelated emotion/motivation systems that all birds and mammals have evolved to direct courtship, mating, reproduction, and parenting" (2006, p. 89). Love, Fisher argues, is "designed to enable suitors to build and maintain an intimate relationship with a preferred mating partner" (2006, p. 92).⁸ Like Buss, Fisher identifies romantic love as having developed alongside mating strategies in order to aid human reproduction. We must add that we doubt that romantic love as we humans understand it is found among birds or any other species and here, we note, comes the problem with the rather large semantic tent under which romantic love resides. If we are to use the term scientifically, we cannot use it metaphorically. Scientifically, gravity refers to a force based on mass and is not confused with its use in statements such as "the gravity of the matter." Romantic love, we will argue, is a (social) force, like gravity, comprised of the social synthesis of two psychobiological components: love and sex.

Jankowiak and Fischer made it clear that they were not interested in variation in types of love or its importance for marriage or child rearing but simply its presence. Jankowiak and Fischer (1992, p. 152) use the following criteria to determine the presence of romantic love from the ethnographic records: "accounts depicting personal anguish and longing, the use of love songs or folklore that highlight the motivations behind romantic involvement, elopement due to mutual affection, native accounts affirming the existence of passionate love, and the ethnographer's affirmation that romantic love is present."

Interestingly, Jankowiak and Fisher noted that "in over 250 ethnographic and folkloric studies examined not a single researcher explicitly defined romantic love" (1992, p. 151). How could the researchers possibly identify romantic love if they failed to define the necessary components of romantic love? The researchers who confirmed that romantic love is a cultural universal admit: "our primary methodological problem arose from the absence of any clear and consistent usage of the terms love, lovemaking and lovers" (Ibid.: 151). Moreover, in order for cultures to be designated as having romantic love, only one of Jankowiak and Fishers' indicators had to be present (ibid.: 152).

The various criteria used differ in qualifying factors necessary for a culture's definition of romantic love; and the presence of one indicator is hardly reliable in a study aiming to ascertain cultural universality. We also wonder if there is not a conflation of the psychological universality of dispositions toward feelings of romantic love (varying across individuals as well as cultures) with the cultural construct of romantic love. That is, is the presence of one instance, which may be idiosyncratic, sufficient criteria for categorizing romantic love as a cultural construct in that society? Much depends on how one defines whether or not something is cultural. A definition of culture and requirements for meeting those necessary and sufficient criteria are remarkably absent in the romantic love literature. One cannot demonstrate the cultural universality of any concept without first having an independent definition of culture that fits the basic understanding of the concept of culture and demonstrating that the concept one is studying using ethnographic accounts meets those minimal requirements.

Jankowiak and Fischer demonstrated, without doubt, that passionate romantic love is not a Western invention and that it is a psychological universal that may also be a cultural universal; but they did not definitively show the latter. Nor, it is important to note, did they claim that it is. They claimed instead that it was a near cultural universal, although in subsequent publications Jankowiak does refer to romantic love as a cultural universal (Jankowiak, 1995, 2004).

Evolutionary Arguments for the Existence of Romantic Love

Behavioral indicators, as opposed to poetry, love songs, or folklore, that suggest relationships rooted primarily in passion, intimacy, and commitment, such as elopement, declarations of love, and love suicide, are perhaps the most reliable evidence of the prevalence of romantic love in a culture. Yet, even this kind of data falls short in assessing whether or not romantic love is a cultural universal, a "primary motivation system," as Helen Fisher suggested (2006, p. 93) or as David Buss has said, simply an "adaptation" (2006, p. 65). Evolutionary psychologists conceptualize romantic love as a necessary drive because it confers reproductive advantages to children born from romantic love unions over those born from none romantic love unions. Children from a long-term love union are likely to have more advantages than children from a

short-term sexual union because of the dual investment of mother and father in the former. A second argument made is that love allows sexual access to a partner and gives confidence that access is mutually exclusive. Without romantic love for long-term pair bonding, paternity is ambiguous particularly because of concealed ovulation among humans, and this paternity certainty also contributes to equal investment of the mother and father and confers an advantage for the child receiving this kind of care. It is important to note that in systems where the extended family takes care of the baby to maturity, romantic love is less necessary as is the dual investment of mother and father less necessary.

The focus of the evolutionists when it comes to the concept of love is on foragers, aided by the presupposition that the long evolutionary history of *Homo sapiens* and their ancestors living as foragers created the conditions for romantic love. However, not all foragers were nomadic; many particularly in Australia had quite complex and stratified social systems with extended family organizations (Boehm, 1999). Clearly with the introduction of agriculture, romantic love is often culturally muted and replaced by arranged marriage systems.⁹ The evolutionary argument is that love is still present because of our long history as hunters and gatherers. However, it still remains a question why romantic love is so maladaptive to arranged marriages or perhaps any extended family system, and why it is so easily replaceable as a means for mate selection or reproductive access and maintenance if it is a biological drive, as Fisher argues? We cannot have a cultural drive that prohibits eating. How then do we have any cultural sanctions that can prohibit a drive? Note that this is not the same as prohibiting certain kinds of foods or marriages between different ethnic, religious, or cast/class groups. Such prohibitions are always partial and not whole. A cultural prohibition on romantic love is a prohibition of the concept taken as a whole!

The advantages conferred by romantic love on the woman and her children is reduced and may well be converted to disadvantages in arranged marriage systems with extended family organizations being the norm. In this situation, there are alternative caretakers and providers to the man and even to the woman.

Romantic love is a social concept that requires two consenting adults. In that sense, it is a psychosocial drive if hardwired or a predisposition (as we think) if softwired. In either case, it is likely to be hardwired as a biopsychological emergent property activated at the idiosyncratic level by individuals who, for various reasons, tend toward the romantic (Lowie's famous "poetic-minded" [1983, p. 146]); and at the cultural level by social conditions favoring romantic love as a basis for long-term mate selection, as commonly seen in modern Western societies.

Almost all definitions of romantic love involve some necessary social conditions: the development of intimacy, reciprocal commitment, and mutual attraction and desire. Romantic love is first and foremost a type of social relationship (i.e., a unique dyad) fostered in and adaptive to specific social contexts. Its social nature a priori implies that it is a molecular

rather than atomistic concept. By this, we mean that a drive is atomistic. Hunger, sleep, or sex are drives that don't require, for their satisfaction, an enduring relationship with others based on the quasi-mystical articulation of unique but ineffable compatibilities. This makes the notion of romantic love as a drive dubious. More likely, it is an inherent biopsychological disposition whose strengths, like music, math, or spatial skills, vary across individuals and which can be suppressed or shaped by cultural factors but is triggered by social conditions.

We think romantic love is a biopsychological and socio-cultural complex. The romantic love style literature, first developed by J. A. Lee (1976) and later developed and researched by Clyde and Susan Hendricks (1998, 2002, 2006), argues for six primary love styles—*eros* (romantic), *pragma* (pragmatic, business like), *mania* (obsessive), *agape* (altruistic, sacrificing), *ludus* (playful, hedonistic), and *storge* (companionate, friendship). These styles have attained popular culture status, primarily because they give people options and combinations that are missing from the cultural imperative prevailing in Western culture that only *eros* or romantic love "counts" as a valid reason for marriage and is the most valorized love style. Societies are likely to endorse one or the other types of love styles.

While we do not test the theory of love styles, it does provide us with a theoretical perspective for proposing alternative types of love to romantic love as potentially also conferring reproductive advantages in social contexts that differ from those of the West. We intend to demonstrate in our study that romantic love is particularly adapted to the nuclear family organization and thus it will be culturally endorsed under this social condition, whereas romantic love will be culturally muted or sanctioned against in the extended family situation. This argument is based on two premises: first that where the nuclear family is the norm it is advantageous for the woman to promote love as a precondition for having sexual relations with a man, for sex without love could leave her to fend for herself and her child if she becomes pregnant. As Fisher et al. (2002) and others have noted, the main function of romantic love is to make sure that the man, without undue calculus, desires to care for his beloved and their child minimally over the period of her pregnancy and the first 2 years after the birth of the child (a period of 2–4 years). Romantic love is a potential love style that emerges from this basic impulse toward attraction that is never isolated but always combined with other psychological and social features to form different types of love or long-term mating relationships.

Romantic love is the most prominent bonding agent of dyadic reproductive relationships. But what of those relationships where there are others who are part of the family organization whose responsibilities extend to taking care of the mother and her children? In such circumstances, romantic love becomes less important and even a potentially disruptive force since other members of the household—such as the parents of the woman or man—are likely the ones to invest in caretaking and thus favor an arranged marriage in which they choose the most suitable spouse for their child. Under these conditions, *pragma*

Table 1. Nonmatrilocal Extended Family as a Predictor for the Presence of Arranged Marriage for Females (for the Nonmatrilocal Cultures of the Standard Cross-Cultural Sample).^{a,b}

Domestic Organization	Arranged Marriages For Females				
	1 (Absent: Woman Selects)	2 (Intermediate)	3 (Present Parents Choose)	Total	
Nonmatrilocal extended families versus nuclear families	0 (nuclear families)	16 45.7%	8 22.9%	11 31.4%	35 100.0%
	1 (extended families)	22 25.0%	18 20.5%	48 54.5%	88 100.0%
Total		38 30.9%	26 21.1%	59 48.0%	123 100.0%

Source. Murdock and Wilson (1972, 1985); Broude and Greene (1983, 1985); Khaltourina, Korotayev, and Divale (2002).

Note. $\rho = .23$, $p = .01$. We have used the following two Standard Cross-Cultural Sample variables: V68 (Form of Family, dichotomized) and V740 (Marriage Arrangements [Female], trichotomized).

^aFor an earlier cross-cultural test that produced rather similar results, see Stephens (1963, pp. 198–199). ^bNote that if we include matrilocal cultures into the sample, the correlation becomes extremely weak and only very marginally significant ($\rho = .12$, $p = .134$).

(or pragmatic love) or *storge* (companionate love) are likely to be culturally endorsed over romantic love. Long-term mating strategies do not require romantic love under the condition of the extended family and thus romantic love will be suppressed in nonmatrilocal societies that practice arranged marriage. The qualification of nonmatrilocal as a postmarital residence practice is important because as has been shown previously (de Munck & Korotayev, 1999, 2007), romantic love becomes a more important criterion for marriage as female status increases; and in the subsequent paper, we show that intimacy between husband and wife (a necessary feature of romantic love according to Sternberg 1984, 1988) is positively correlated with high female status. In matrilocal situations, female status is already, *ceturi paribus*, high and so in order to control for the effect of matrilocality we do not include these societies in our analysis.

In short, in previous papers on social conditions, we have shown that the increase in female status (or near-gender equality) and intimate social situations (e.g., eating, sleeping, and spending leisure time together) are positively correlated with the increased importance of romantic love in a culture. This study builds on those studies by investigating whether romantic love is positively valued in societies with nuclear families as the norm as opposed to those where extended family forms are the norm. Nuclear families living in subsistence systems typically require more independent choice than extended families. Reliance on independent choice enhances personal conviction in the autonomy of self and should then be a powerful factor for why cultures come to regard romantic love as a positive value.¹⁰

Materials and Method

For this article, we used three different data sets: the Standard Cross-Cultural Sample, the Ethnographic Atlas, and a new sample using our own codes using ethnographic data from the Electronic Human Relations Area Files (eHRAF).¹¹ The third data set of cultures with the relevant texts and references is presented in Online Appendix A.

We relied on the eHRAF files for coding a total of 74 societies from all the continents and ranging from foragers to commercial (i.e., modern, industrial societies). Table 1 presents all societies ranging across four levels of romantic love—from no love to high love and also in terms of subsistence economy from foraging to commercial. Most societies were not included in the data file because there was a lack of information or clear behavioral data. We had agreed prior to coding that if data were absent or unclear, we would not include the society in our sample. We have also not contacted researchers independently, as had Jankowiak, to determine whether or not romantic love is present in the group/culture studied. Further, we considered “love suicide” as a potential code for romantic love since it has been used by Jankowiak and Fischer (1992) and Lindholm (2000) in their surveys and seemed to be an important variable yielding “the presence of romantic love” in a culture. We decided against this unless there were additional factors. Our argument is simply that we take romantic love to be realized as a social dyad, and not as an “idiosyncratic” feeling by an individual for another, hence there has to be some evidence that romantic love actually exists in its realized state for it to be scored as romantic love since any evolutionary benefits it yields must be in its requited and not its unrequited state. Hence, we erred on the side of caution and conservatism in making our determination of whether there was an indication of romantic love or not in the culture.¹²

Another difficulty with many of the cross-cultural databases is that a consistent conception of romantic love was not found among all cultures. We strove to measure cultures based on the definition of romantic love provided by Jankowiak and Fischer (1992) who defined romantic love based on intimacy, passion, commitment, idealization, limerence (e.g., intrusive thinking), and so on. Some cultures very clearly had their own conception of romantic love. Some cultures are in a transition phase, where romantic love is slowly becoming the norm. Those cultures are largely found in medium love. We focused on behavioral data (including quotes or case studies material) as opposed to folktales or love poems. Folktales and love poems did not

automatically put a culture into high, medium, or low love if there were no supportive behavioral data. Almost all of the no-love cultures are explicitly said by the ethnographer to have no concept of romantic love. The four categories we used are defined as follows:

1. No love = There is no evidence of romantic love as a cultural form.
2. Low love = There is some evidence but not as a normative criteria for marriage.
3. Medium love = There is evidence of love as prevalent but not as a criteria for marriage or mate selection.
4. High love = Where romantic love is a criteria for mate selection.

Examples of cultures that fit into the four categories and a sample passage of the reason why are presented below.

1 = no love: Kpelle. Perhaps because of the corporate nature of lineage descent, people's primary allegiances are usually those to consanguineal kin. Consanguineal ties (which include filial ties) are regarded as more important and enduring than those with spouses. Therefore, Kpelle spouses have few inhibitions about expressing conjugal ties in pragmatic terms. Especially after marriage, relations between men and women are frequently marked by distance and by a business-like attitude focusing on rights and obligations. Recall, for example, how Kpelle women answered my question about whether it is better to be married or single (see chapter 4). Though embarrassment may have been a factor in these replies, it is significant that none of the Kpelle women mentioned companionship or love, as a woman from the United States might. Furthermore, the Kpelle do not speak in terms of tragedy or emotional trauma when they refer to divorce and adultery. This, of course, brings into question Western assumptions about the universality and almost biological necessity of romantic love (1980, p. 184).

2 = low love: Afikpo. Conversations with Afikpo on the topic of "love" tend to be confusing and result in conflicting statements such as references to the time before present-day conditions of frequent marital strife when "man and women still loved each other," and comments on the precontact period "before our people knew about love." In the latter sense, romantic love seems to be referred to, while in the former the definition of love appears to be somewhat different, possibly referring to the warm ties of affection between husband and wife that often developed after marriage in precontact times (Ottenberg, 1980, p. 135).

3 = medium love: Serbia. In these regions, abductions and elopements were daily occurrences, and the intense feelings which exist in marriage relationships sometimes flared up in conflagrations of jealousy, or we may find peasant women complaining of their husbands' excessive sexual demands (Erich, 1966).

4 = high love: Burma. In Burma, unlike these other societies, such sentiments as love and affection are certainly found in the marital relationship. Indeed, Burmese, like English, has many, if ambiguous, terms to designate these emotions, and different villagers (referring to them variously by such Burmese and Pali terms as *myitta*, *tanha*, *thamudaya*, *thanazaya*, and *thanyozin*) designate these sentimental ties as the bases for their continuing marriage. Some of these terms are more expressive of sexual and romantic attachments, while others connote attachments of sympathy, affection, and common ties. In short, although love and affection often comprise important emotional components of the marriage relationship, they are not often manifested in psychological intimacy or the sharing of emotional burdens, anymore than they are in most societies of the world outside the modern West (Spiro, 1977, p. 284).

For the test of this hypothesis, we used the random sample of the Human Relations Area Files that includes the following cultures: Afghans (Pashtun), Ainu, Amhara, Annamese, Arab Americans, Balinese, Brazilians, Burmese, Cambodians, Carolina, Chipewyan, Chitimach, Comanche, Croatians, Crow, Cuna, Eastern Pomo, Egyptians, Ganda, Garifuna, Gusii, Havasupai, Ibo, Ifaluk, Iroquois, Israelis, Japanese, Jivaro, Kaska, KiowaApache, Koreans, Kpelle, Kunama, Kung, Kurd, Lapps, Lozi, Malays, Manus, Miskito, Modern Mongolia, Mossi, Muria Gond, NA_Hasid_jews, Navaho, New England, Okinawans, Palauans, Palaung, Puerto Rico, Ruanda, Samoans, Santal, Sanusi, Saraguro Quichua, Sarakatsani (Greece), Serbs, Shantung, Siamese, Siriono, Somali, Tarahumara, Tlingit, Tongans, Trobrianders, Trukese, Tzeltal, Yapese, and Yaruro (Pume). The coding for "romantic love as a basis of marriage" was performed using the full text Human Relations Area Files "World Cultures" database (<http://hraf.yale.edu/online-data/bases/ehraf-world-cultures/>). The coding scheme has been described above.

The same sample has been used to code neolocality versus nonneolocality using the following definition by Murdock (1967, p. 156): "Neolocal, i.e. normal residence apart from the relatives of both spouses or at a place not determined by the kin ties of either."

The data for the other variables have been taken from the *Ethnographic Atlas* database (Bondarenko, Kazankov, Khaltourina, & Korotayev, 2005; Korotayev, Kazankov, Borinskaya, Khaltourina, & Bondarenko, 2004; Murdock, 1967, 1985), and the *Standard Cross-Cultural Sample* database (Broude & Greene 1983, 1985; Khaltourina, Korotayev, & Divale, 2002; Murdock & Wilson, 1972, 1985; variables V8 "Domestic Organization" [dichotomized]).

The following variables have been taken from the *Standard Cross-Cultural Sample* database:

- (1). V740. Marriage Arrangements (Female; Broude & Greene, 1983, 1985; Khaltourina et al., 2002). In the database, this variable has been coded in the following way: 1 = *Individual selects and/or courts partner autonomously: approval by parents or others unnecessary*; 2 = *Individual selects and/or courts partner*

autonomously: parental, kin, and/or community approval necessary or highly desirable; 3 = Individual suggests partner to parents or others; arrangements for courtship or marriage then proceed if choice is approved OR parents ask approval of individuals to initiate a match OR individual is approached by parent or others on behalf of suitor and can accept or reject the match; 4 = Individual choice and arranged marriages are alternatives; 5 = Parents choose partner: individual can object; 6 = Parents choose partner: individual cannot easily object or rarely objects in fact.

For the purposes of our test (whose results are presented in Table 1), this variable (i.e., Marriage Arrangement) has been trichotomized in accordance with the following recoding scheme: Values 1 and 2 have been merged into Category 1 = “*Arranged Marriages for Females are absent: woman selects*”; Values 3 and 4 have been merged into Category 2 = “*Intermediate*”; Values 5 and 6 have been merged into Category 3 = “*Arranged Marriages for Females are present: parents choose.*”

- (2) V68. Form of Family (Khaltourina et al., 2002; Murdock & Wilson, 1972, 1985). In the database, this variable has been coded in the following way: 1 = *Nuclear Monogamous, no polygyny*; 2 = *Nuclear Monogamous, <20% polygyny*; 3 = *Polygynous, >20% polygyny*; 4 = *Polyandrous*; 5 = *Stem family, monogamy*; 6 = *Stem family, <20% polygyny*; 7 = *Small extended, monogamy*; 8 = *Small extended, <20% polygyny*; 9 = *Small extended, >20% polygyny*; 10 = *Large extended, monogamy*; 11 = *Large extended, <20% polygyny*; 12 = *Large extended, >20% polygyny*.

For the purposes of our test (whose results are presented in Table 1), the above variable has been dichotomized according to the following recoding scheme: Values 1 and 2 have been merged into Category 0 = *nuclear families*; Values 3 through 12 have been merged into Category 1 = *extended families*.

The following variable has been taken from the *Ethnographic Atlas* database (Bondarenko et al., 2005; Korotayev et al., 2004; Murdock, 1967; Murdock et al., 1999–2000): V12. Marital Residence with Kin: after First Years. In the electronic database, this variable has been coded as follows: 1 = *Avunculocal* (corresponds to symbol “A” of the printed version of the *Ethnographic Atlas*), 2 = *Ambilocal* (corresponds to symbol “B” of the printed version), 3 = *Optionally uxorilocal or avunculocal* (corresponds to symbol “C” of the printed version), 4 = *Optionally patrilocal (or virilocal) or avunculocal* (corresponds to symbol “D” of the printed version), 5 = *Matrilocal* (corresponds to symbol “M” of the printed version), 6 = *Neolocal* (corresponds to symbol “N” of the printed version), 7 = *No common residence* (corresponds to symbol “O” of the printed version), 8 = *Patrilocal*

(corresponds to symbol “P” of the printed version), 9 = *Uxorilocal* (corresponds to symbol “U” of the printed version), and 10 = *Virilocal* (corresponds to symbol “V” of the printed version).

Cultures with Values 5 and 9 have been identified as “matrilocal.” Cultures with Values 1, 4, 6, 7, 8, and 10 have been identified as “nonmatrilocal.”

Results

There are two main reasons why we expect that the importance of romantic love as a basis for marriage will be significantly less pronounced in the context of extended families than in the context of nuclear families.¹³ First, the primary evolutionary function for the behavioral predisposition toward romantic love is to provide a female with a secure male during two critical periods—pregnancy and of even more importance, after the birth of a baby. However, this is not a serious problem within an extended family context where there is no risk that a female will be left with nobody to look after her and her newborn baby. Indeed, the availability of childcare within an extended household makes it possible for a mother to successfully combine her work related to subsistence practices with her maternal functions (Farooq, 1985). As has been demonstrated by Pasternak, Ember, and Ember (1976), in preindustrial societies “extended family households are likely to emerge when . . . work outside the home makes it difficult for a mother to care for her children . . .” (Ember & Levinson, 1991, p. 83).¹⁴ The second reason is that within the context of the patriarchal extended family, it is very likely that we will find predominantly arranged marriages¹⁵ (see Table 1). In this case, members of the husband’s family are expected to provide both direct and indirect support for the mother and child.

When the marriage partners are chosen by senior members of extended families, romantic love becomes an obstacle that can ruin “wise” marriage plans and schemes of clever senior adults in favor of the “romantic fantasies” of youngsters, leading to the cultural suppression of romantic love. Within such a social context, romantic love is highly unlikely to become a valid basis for marriage. As we expected, there was a significant correlation between arranged marriage practices and extended nonmatrilocal families ($p = .01$). This gives additional grounds to expect a significant negative correlation between the prevalence of extended nonmatrilocal families and romantic love as a basis of marriage. Conversely, we expect a significant positive correlation between the presence of romantic love and the nuclear family.

Our test for this hypothesis (i.e., a negative correlation for the importance of romantic love as a basis for marriage for cultures with extended nonmatrilocal families and a positive correlation when matched with nuclear families) is produced in Table 2.

As we see, the correlation is in the predicted direction; furthermore, it is quite strong and significant beyond any doubt. Thus, the test has supported the proposed hypothesis that

Table 2. Extended Family as a Predictor for the Absence of Romantic Love as a Basis of Marriage.

Domestic Organization		Romantic Love as a Basis for Marriage				Total
		0 (No Love)	1 (Low Love)	2 (Medium Love)	3 (High Love)	
Domestic organization	Independent nuclear families	3 12.5%	5 20.8%	8 33.3%	8 33.3%	24 100.0%
	Extended families	26 57.8%	11 24.4%	8 17.8%	0 0.0%	45 100.0%
Total		25 43.9%	29 42.0%	16 23.2%	16 23.2%	8 11.6%

Note. $\rho = -.555$; $p < .0001$. $\gamma = -.780$; $p < .0001$.

Table 3. Extended Family as a Predictor for the Absence of Romantic Love as a Basis of Marriage (Omitting Matrilocultural Cultures).

Domestic Organization		Romantic Love as a Basis for Marriage				Total
		0 (No Love)	1 (Low Love)	2 (Medium Love)	3 (High Love)	
Domestic organization	Independent nuclear families	3 14.3%	4 19.0%	7 33.3%	7 33.3%	21 100.0%
	Extended families	22 61.1%	10 27.8%	4 11.1%	0 0.0%	36 100.0%
Total		25 43.9%	14 24.6%	11 19.3%	7 12.3%	57 100.0%

Note. $\rho = -.592$; $p < .0001$. $\gamma = -.814$; $p < .0001$.

family organization influences the importance of romantic love as a basis for marriage and as a cultural construct.

Due to the reasons specified above, we have grounds to expect that the correlation will become stronger if we omit matrilocultural cultures from the sample (matrilocality promotes extended families, but it also enhances the female status raising the importance of romantic love as a basis for marriage¹⁶). The test below supports these expectations (see Table 3):

As we see, the omission of matrilocultural cultures enhances the correlation substantially but not dramatically, suggesting that the extended families serve as a strong independent inhibitor of romantic love as a basis for marriage (just as have been hypothesized above).

In his pioneering cross-cultural research on the factors of romantic love as a basis of marriage, Paul Rosenblatt (1967) made a somehow counterintuitive finding that romantic love is more likely to be the basis for marriage when residence is nonneolocal. Later, G. R. Lee and Stone (1980) confirmed this finding, but they also produced some findings that are perfectly congruent with ours—that arranged marriage is more likely when families are extended, and romantic love is less likely. In this regard, Carol Ember and David Levinson rightly remark: “Why romantic love goes with nonneolocal residence but not with extended families is somewhat puzzling” (1991, p. 83).

Indeed, our theory suggests that neolocal residence should correlate with romantic love positively rather than negatively. As has been mentioned above, the primary evolutionary function for the behavioral predisposition toward romantic love is to provide a female with a secure male during the critical

periods of pregnancy and, more importantly, after the birth of a baby. However, this is likely to be a serious problem just within a neolocal (rather than nonneolocal) contexts where there could be no relatives around and there is a real risk that a female will be left with nobody to look after her and her newborn baby. Against this background, it is highly remarkable that our test of this hypothesis on the basis of the newly collected data for the HRAF probability sample shows a significant positive (not negative) correlation between neolocality and romantic love as a basis of marriage (see Table 4).

Thus, our test using the new sample suggests that the real situation might not be as puzzling as it seemed to Ember and Levinson. Note that one of the reasons why the results of our test are so different from the ones obtained by Rosenblatt (1967) as well as G. R. Lee and Stone (1980) seems to be that the samples they used did not include any modern cultures at all, whereas the present-date HRAF collection includes a few of them.

Discussion

Earlier articles by the first two authors have demonstrated that the cultural importance of romantic love is influenced by social conditions. This is not surprising; what is surprising to us is that much of the social conditions for the importance of romantic love are either taken for granted, logically assumed but seldom researched and demonstrated, or passed over in favor of undefined and vague cultural factors. Love, and romantic love, too are often conflated even by experts on these subjects (for a critique and demonstration of this problem). Romantic

Table 4. Neolocal Residence as a Predictor for the Presence of Romantic Love as a Basis of Marriage.

Post Marital Residence Patterns		Romantic Love as a Basis for Marriage				Total
		0 (No Love)	1 (Low Love)	2 (Medium Love)	3 (High Love)	
Neolocality	0 (absent)	27 50.9%	12 22.6%	12 22.6%	2 3.8%	53 100.0%
	1 (present)	2 14.3%	2 14.3%	4 28.6%	6 42.9%	14 100.0%
Total		29 43.3%	14 20.9%	16 23.9%	8 11.9%	67 100.0%

Note. $\rho = -.592$; $p < .0001$. $\gamma = -.814$; $p < .0001$.

love is clearly an important subject of study for behavioral/social scientists as it is an important factor in the lives of most humans. We do not doubt and take as given that romantic love has a biopsychological basis and has played an important role in modern human evolution and is undoubtedly related to the adaptive problem of how to get a male to care for a pregnant woman and her (and also his, presumptively) child after birth. Romantic love offers a way for a man to perform altruistic actions volitionally and often happily, by taking care of his wife and child while the impulse for socioeconomic calculus is dampened.

We do not doubt that the above kind of cultural universal script is plausible and indeed probable, depending on two crucial factors: psychological predisposition and social conditions. We think that the literature on love styles discussed above indicates that *some* people are not psychologically disposed to romantic love and that alternative styles (e.g., *pragma*, *storge*) are available that can serve the same socioevolutionary function. At least prior to contemporary reproductive technologies, our continuity as a species depended on a man and a woman having sex. However, by itself, this does not imply that the man will take care of the woman after he impregnates her.

Under conditions of most nomadic foragers (Boehm, 1999, 2012), there was generalized gender equality with loose but primarily nuclear family organizations. There were also, particularly in Australia, sedentary and hierarchical foraging societies with complicated and extended family organizations. Nonetheless, according to the position of most evolutionary psychologists, romantic love is a response to the nucleated family conditions of early foragers and functions as a neuropsychological system that keeps males bonded and attentive to his mate in order to ensure that her children are also his, and therefore creates an impetus for him to assist in their survival and welfare. Social conditions of gender equality, the intimacy of daily living, activities such as eating and sleeping together, and distributing the labor for meeting daily subsistence needs then produce cultural values, norms, and practices supportive of romantic love.

Our research does not substantiate the above story line but provides support for it. It specifically foregrounds the necessary social conditions which favor the elaboration of universal biopsychological features in which evolutionary approach to romantic love is grounded. Cultural norms

regarding sex and romantic love are adaptations to the above complex of social conditions (e.g., marriage forms and female status) that endorse behaviors adaptive to the evolutionary universals of love and sex. Love is necessary for bonding and investment in children and sex is necessary for reproduction, but romantic love is a particular love that is elaborated as a cultural norm when the social conditions warrant. It is an emergent property of the two biopsychological universals of love and sex.

Lastly, we have argued that there are social conditions which do not favor romantic love as a cultural universal. While undoubtedly there are groups (perhaps the elite) and individuals who everywhere and at all times have felt romantic dispositions, there are still cultures that suppress and reject romantic love as a cultural value. If we define culture as shared, normative values, beliefs, and practices, then we cannot take as axiomatic that romantic love is a cultural universal. Humans and culture, we believe, are more plastic and complicated than that. Further, we believe this plasticity is itself evolutionarily adaptive for cultural evolution, which proceeds at a much faster speed than biological-psychological evolution. Our bigger brain must also have taken this into account by building flexible cognitive-affective capacities. The presumption that romantic love is a cultural universal conflates the past with the present, culture with psychology, and ignores the role of social conditions in influencing how culture works to adapt to its sociobiophysical environment. Our article is but one, rather limited, attempt to foreground the importance of social conditions in the cross-cultural and evolutionary study of romantic love.

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Notes

1. By reliable here we mean simply that while researchers will disagree with Rosenblatt's fine-grained rankings, they are likely to agree with the simple low-high dichotomy we used.
2. Indicators of high female status were female kinship power; control over child-rearing practices; the absence of socialization norms for training boys to be aggressive; monogamy is practiced and polygyny rare if not prohibited.
3. We thank the second reviewer for this suggestion. Our concern is not with stages, but it is with the ability of the elaboration of romantic love so that it bolsters long-term pair bonding. The uniqueness of the partner and the positive evaluation of that uniqueness is certainly an important feature for synthesizing sex and love into a social dyad.
4. We think there is a short list that of agreed-upon factors that without them it would be hard to imagine that one could have romantic love. Clearly however, most factors identified with romantic love such as commitment, emotional dependency, concern for the well-being of the other (Hegi & Bergner, 2010), and intimacy can also be applied to all sort of other love and social relationships. Passion and intrusive thinking, and a need to be with them are three factors that seem to stand out. We intend this to be developed for a subsequent paper. But clearly there are conditions such as intimacy which are necessary, but not sufficient, and passion which may be sufficient but not necessary. The definitional problem may be a red herring, in that there is no one and only list that suffices for love cross-culturally, but some set of criteria among which a number should be necessary and sufficient. Hegi and Bergner (2010) to their credit are the only ones we know who have seriously tackled this issue.
5. We recognize that our argument conforms with cultural materialist theory as espoused by Harris; but while we don't mind such an association, indeed appreciate it, this would be a misreading of our argument. We suggest that the psychological predispositions to romantic love and that social organizations then are the stimuli or the ground upon which these predispositions either bloom or not. The material conditions are not clearly determinants of these social conditions.
6. We want to affirm, time and again, that people are not rocks and there is inherent variation at the micro-, meso-, and macro levels of analysis. However with that variation in mind, we also note patterns of probabilities that rise and fall depending on the conjunction and disjunctions of variables, thus it is not just the nuclear family but also gender equality in numerous areas, and contexts for the regular expression of cross-gender intimacy.
7. We thank the first anonymous reviewer for this suggestion.
8. An anonymous reviewer noted inconsistencies in the way the term "mating" is used. Most of our usage of this term is in quotes and thus from other authors. It is true that it is quite unclear whether mating refers only to sexual intercourse or as subsumed under forms of long-term pair bonding (e.g., marriage). Our default unmarked use refers to sexual mating in the context of pair bonding.
9. Lewellyn in a nice summary article refers to such societies as "societies at middle level of complexity" and suggests that for many

- reasons such societies are where you are least likely to find high levels of romantic love or love as a basis for marriage (Hendrix, 1997, p. 7).
10. We are indebted to the reviewer who opined that nuclear families, by default, require more independent decision-making by individuals, and this condition enhances the psychocultural value placed on the autonomous self as an agent capable of making good decisions on her or his own. Hence, this positive sense of self may well be a precondition both for valuing romantic love and the cultural elaboration of romantic love. It is an idea we anticipate developing in future research.
 11. One author did the initial coding and the other two authors checked the quotes and cites for the coding. The coding algorithm was developed by the authors.
 12. In this, we diverge from Lindholm and Jankowia and Fischer and others who rely on love suicide. We are not critical of those who adopt this strategy, to each his own. It may well be that suicidal tendencies are limited to individuals who have both access to the means of commit suicide (as do peasant farmers who have easy access to anthrax and other pesticides) and who chafe at cultural restrictions related to sexual or emotional desires.
 13. Especially nonmatrilocal ones.
 14. A vivid example of this is shown in a study at the Tea Tole Estate in Cameroon, which provided a day care center (crèche) free of charge for the children under school age for its female workers. Yet, only 7% of the wage-employed women at Tole (with young children) used the crèche. Some 62% of the women had their young children cared for by members of their extended families (Delancey, 1982). Another study of women employed as hospital nurses in Accra showed similar results—combining wage employment with childrearing was significantly eased for them through the help of relatives within their extended families (Oppong, 1975).
 15. Note that it is not as likely with respect to matrilocal extended families, as matrilocality correlates positively with a higher female status (Korotayev & Kazankov, 2003; Murdock, 1949, p. 205; Schlegel, 1972; Schneider & Gough, 1961; Whyte, 1978a, 1978b, pp. 132–133)—including more control by women over their own sexual behavior (Johnson & Hendrix, 1982), whereas, as we have shown earlier (de Munck & Korotayev, 1999), a higher female status correlates positively with romantic love as a basis for marriage (and, hence, with less arranged marriages).
 16. See references in notes above.

References

- Bledsoe, C. H. (1980). *Women and marriage in Kpelle society*. Stanford, CA: Stanford University Press. Retrieved from <http://ehrafworldcultures.yale.edu/document?id=fd06-003>
- Boehm, C. (1999). *Hierarchy in the forest: The evolution of egalitarian behavior*. Cambridge, MA: Harvard University Press.
- Boehm, C. (2012). *Moral origins: The evolution of virtue, altruism, and shame*. New York, NY: Basic Books.
- Bondarenko, D., Kazankov, A., Khaltourina, D., & Korotayev, A. (2005). Ethnographic atlas XXXI: Peoples of easternmost Europe. *Ethnology*, 44, 261–289.
- Boyd, R., & Richerson, P. J. (1985). *Culture and the evolutionary process*. Chicago, IL: University of Chicago Press.
- Boyd, R., & Richerson, P. J. (2005). *The origin and evolution of cultures*. London, England: Oxford University Press.

- Broude, G., & Greene, S. J. (1983). Cross-cultural codes on husband–wife relationships. *Ethnology*, 22, 263–280.
- Broude, G., & Greene, S. J. (1985). Cross-cultural codes on husband–wife relationships. *World Cultures*, 1, Files STDS29.DAT, STDS29.COD.
- 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. (2003). *The evolution of desire: Strategies of human mating* (Rev. ed.). New York, NY: Basic Books.
- Buss, D. M. (2006). The evolution of love. In R. J. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 65–86). New Haven, CT: Yale University Press.
- Delancey, V. (1982). *The relationship between female wage employment and fertility in Africa: An example from Cameroon*. Paper presented at the annual meetings of the Southern Economic Association, Atlanta, Georgia, USA.
- De Munck, V. (2008). Self, other and the love dyad in Lithuania: Romantic love as fantasy and reality or, when culture matters and doesn't matter. In W. Jankowiak (Ed.), *Intimacy* (pp. 65–95). New York, NY: Columbia University Press.
- De Munck, V. C., & Korotayev, A. (1999). Sexual equality and romantic love: A reanalysis of Rosenblatt's study on the function of romantic love. *Cross-Cultural Research*, 33, 265–277.
- De Munck, V. C., & Korotayev, A. (2007). Husband intimacy and female status in cross-cultural perspective. Korotayev. *Journal of Cross-Cultural Research*, 4, 307–335.
- De Munck, V. C., Korotayev, A., & Khaltourina, D. (2009). A comparative study of the structure of love in the U.S. and Russia: Finding common core of characteristics and national and gender differences. *Ethnology*, 48, 337–357.
- De Munck, V. C., Korotayev, A., Khaltourina, D., & de Munck, J. (2011). The structure of love: Cross-cultural analysis of models of romantic love among U.S. residents, Russians and Lithuanians. *Cross-Cultural Research*, 20, 1–27.
- Durkin, K., Schmitt, D. P., Alcalay, L., Allensworth, M., Allik, J., Ault, L., . . . De Souza, E. (2004). Patterns and universals of adult romantic attachment across 62 cultural regions: Are models of self and of other pancultural constructs? *Journal of Cross-Cultural Psychology*, 35, 367–402.
- Ember, C. R., & Levinson, D. (1991). The substantive contributions of worldwide cross-cultural studies using secondary data. *Behavior Science Research*, 25, 79–140.
- Erllich, V. St. (1966). *Family in transition: A study of 300 Yugoslav villages*. Princeton, NJ: Princeton University Press. Retrieved from <http://ehrafworldcultures.yale.edu/document?id=ef06-015>
- Farooq, G. M. (1985). Household fertility decision-making in Nigeria. In G. M. Farooq & G. B. Simmons (Eds.), *Fertility in developing countries. An economic perspective on research and policy issues* (pp. 312–350). New York, NY: St Martin's Press, Inc.
- Fisher, H. (2006). The drive to love. In R. J. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 87–115). New Haven, CT: Yale University Press.
- Fisher, H. E., Aron, A., Mashek, D., Li, H., & Brown, L. L. (2002). Defining the brain systems of lust, romantic attraction, and attachment. *Archives of Sexual Behavior*, 31, 413–419.
- Frankfurt, H. G. (2006). *The reasons for love*. Princeton, NJ: Princeton University Press.
- Gottschall, J., & Nordlund, M. (2006). *Romantic love a literary universal? Philosophy and Literature* 30, 450–470.
- Harris, H. (1997). Rethinking polynesian heterosexual relationships: A case study on Mangaia, Cook Islands. In W. Jankowiak (Ed.), *Romantic passion: A universal cultural experience?* (pp. 95–127). New York, NY: Columbia University Press.
- Hatfield, E., & Rapson, R. L. (1996). *Love and sex: Cross-cultural perspectives*. Boston, MA: Allyn Bacon.
- Hegi, K. E., & Bergner, R. M. (2010). What is love? An empirically-based essentialist account. *Journal of Social & Personal Relationships*, 27, 620–636.
- Hendrick, C., & Hendrick, S. (1988). Lovers wear rose-colored glasses. *Journal of Social and Personal Relationships*, 5, 161–183.
- Hendrick, C., & Hendrick, S. (1992). *Romantic love*. Newbury Park, CA: Sage.
- Hendrick, C., & Hendrick, S. (2006). Styles of romantic love. In R. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 149–170). New Haven, CT: Yale University Press.
- Hrdy, S. B. (2009). *Mothers and others: The evolutionary origins of mutual understanding*. Boston, MA: Harvard University Press.
- Jankowiak, W. R. (1995). *Romantic passion: A universal experience?* New York, NY: Columbia University Press.
- Jankowiak, W. R. (2004). Further support for the universality of love. *World Cultures*, 15, 128–152.
- Jankowiak, W. R., & Fischer, E. F. (1992). A cross-cultural perspective on romantic love. *Ethology*, 31, 149–155.
- Jankowiak, W. R., Volsche, S. L., & Garcia, J. R. (2015). Is the romantic-kiss a near cultural universal? *American Anthropologist*, 117, 535–539.
- Johnson, G. D., & Hendrix, L. (1982). A cross-cultural test of Collin's theory of sexual stratification. *Journal of Marriage and the Family*, 44, 675–684.
- Khaltourina, D., Korotayev, A., & Divale, W. (2002). A corrected version of the standard cross-cultural sample database. *World Cultures*, 13, 62–98. File STDS.SAV.
- Korotayev, A., & Kazankov, A. (2003). Factors of sexual freedom among foragers in cross-cultural perspective. *Cross-Cultural Research*, 37, 29–61.
- Korotayev, A., Kazankov, A., Borinskaya, S., Khaltourina, D., & Bondarenko, D. M. (2004). Ethnographic atlas XXX: Peoples of Siberia. *Ethnology*, 43, 83–92.
- Lee, G. R., & Stone, L. H. (1980). Mate selection systems and criteria: Variations according to family structure. *Journal of Marriage and the Family*, 42, 319–326.
- Lee, J. A. (1976). *The colors of love*. Toronto, ON: The New Press.
- Lindholm, C. (1997). Love as an experience of transcendence. In W. Jankowiak (Ed.), *Passionate love* (pp. 57–71). New York, NY: Columbia University Press.
- Lindholm, C. (1998). Love and structure. *Theory, Culture & Society*, 15, 243–263.
- Lindholm, C. (2000). Romantic love and anthropology. *Ethnoforum*, 10, 1–12.
- Lowie, R. (1983). The mothers: The matriarchal theory of social origins. *American Anthropologist*, 33, 120–167.

- Murdock, G. P. (1949). *Social structure*. New York, NY: Macmillan.
- Murdock, G. P. (1967). Ethnographic atlas: A summary. *Ethnology*, 6, 109–236.
- Murdock, G. P., & Wilson, S. F. (1972). Settlement patterns and community organization: Cross cultural codes 3. *Ethnology*, 11, 254–295.
- Murdock, G. P., & Wilson, S. F. (1985). Settlement patterns and community organization: Cross cultural codes 3. *World Cultures*, 1, Files STDS03.DAT, STDS03.COD.
- Opong, Ch. (1975). *Pilot study of family system planning and size in Accra: The case of married nurses*. A report submitted to the National Family Planning Program, Accra, Ghana.
- Ottenberg, P. (1980). *Marriage relationships in the double descent system of the Afikpo Ibo of southeastern Nigeria*. Ann Arbor, MI: University Microfilms. Retrieved from <http://ehrafworldcultures.yale.edu/document?id=ff26-016>
- Pasternak, B., Ember, C. R., & Ember, M. (1976). On the conditions favoring extended family households. *Journal of Anthropological Research*, 32, 109–123.
- Raybeck, D. (1996). *Mad dogs, Englishmen, and the errant anthropologist: Fieldwork in Malaysia*. Long Grove, IL: Waveland Press.
- Rosenblatt, P. C. (1966). Marital residence and the function of romantic love. *Ethnology*, 6, 471–480.
- Rosenblatt, P. (1967). Marital residence and the functions of romantic love. *Ethnology*, 6, 471–480.
- Schlegel, A. (1972). *Male dominance and female autonomy*. New Haven, CT: HRAF Press.
- Schmitt, D. P. (2005). Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating. *Behavioral and Brain Sciences*, 28, 247–275.
- Schmitt, D. P. (2006). Evolutionary and cross-cultural perspectives on love. In R. J. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 249–273). New Haven, CT: Yale University Press.
- Schneider, D. M., & Gough, K. (1961). *Matrilineal kinship*. Berkeley, CA: University of California Press.
- Shaver, P. R., & Mikulincer, M. (2006). A behavioral systems approach to romantic love relationships: Attachment, caregiving and sex. In R. J. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 64–89). New Haven, CT: Yale University Press.
- Singer, I. B. (2009). *Philosophy of love: A partial summing up*. Cambridge, MA: MIT Press.
- Spiro, M. E. (1977). *Kinship and marriage in Burma: A cultural and psychodynamic analysis*. Berkeley: University of California Press. Retrieved from <http://ehrafworldcultures.yale.edu/document?id=ap04-033>
- Stephens, W. N. (1963). *The family in cross-cultural perspective*. New York, NY: Holt, Rinehart and Winston.
- Sternberg, R. J. (1988). *The triangle of love*. New York, NY: Basic.
- Sternberg, R. J. (1998) *Love is a Story*. New York: Oxford University Press.
- Sternberg, R. J. (2006). A duplex theory of love. In R. J. Sternberg & K. Weis (Eds.), *The new psychology of love* (pp. 184–199). New Haven, CT: Yale University Press.
- Tylor, E. B. (1889). On a method of investigating the development of institutions, applied to laws of marriage and descent. *Journal of the Anthropological Institute of Great Britain and Ireland*, 18, 245–269.
- Whyte, M. K. (1978a). *Cross-cultural codes dealing with the relative status of women*. *Ethnology* 17, 211–237.
- Whyte, M. K. (1978b). *The status of women in preindustrial societies*. Princeton, NJ: Princeton University Press.