



## Original Article

# Jealousy in a small-scale, natural fertility population: the roles of paternity, investment and love in jealous response

Brooke A. Scelza\*

Department of Anthropology, University of California, Los Angeles (UCLA), Los Angeles, CA 90095–1553, USA

## ARTICLE INFO

## Article history:

Initial receipt 1 August 2013

Final revision received 8 November 2013

## Keywords:

Jealousy  
Life history  
Paternity  
Himba

## ABSTRACT

Evolutionary scientists have predicted a universal sex difference in response to different forms of infidelity, with men expected to be more upset than women by a sexual infidelity when both a sexual transgression and an emotional transgression occur. Although this finding has proven to be robust, the vast majority of studies have occurred in industrialized countries and student populations. Here I present the first test of the jealousy hypothesis among a small-scale, natural fertility population, the Himba of Namibia. In this population, the majority of both men and women report greater distress over a sexual infidelity, with men reaching an almost unanimous consensus (96%). Despite the skew for both men and women, there is a significant sex difference in the direction predicted by the evolutionary hypothesis, providing further support for this view. The increased risks of both pregnancy and paternity loss that occur in this natural fertility population may help to explain why these results differ from previously studied populations. More broadly, these data suggest that both the type and the intensity of jealousy expressed may be facultative responses and that further investigation of correlates related to life history trade-offs, forms of investment, and the sexual division of labor can help us to understand the inter-cultural variation in jealous response.

© 2014 Elsevier Inc. All rights reserved.

## 1. Introduction

Traditional interpretations of sexual selection theory in humans predict that men and women will respond differently to threats of infidelity (Symons, 1979; Daly, Wilson, & Weghorst, 1982; Buss, Larsen, Westen, & Semmelroth, 1992). Men, it is thought, will tend to be more upset than women by sexual infidelity, reflecting a mating strategy that aims to increase paternity certainty, which is critical to successfully moderating investment in offspring. Women, on the other hand, are expected to be more upset than men by emotional infidelity, which is thought to reflect the reliability of future male support and therefore represents the female strategy of garnering reliable investment from men. Men and women are thought to have benefited reproductively from both emotional and sexual jealousy; however, because only men experience uncertainty of parentage, and women carry a larger investment burden than men (due to pregnancy and lactation), the sex difference in jealous response is thought to be largely impervious to cultural variation and local norms (Buss, Larsen, & Westen, 1996; Buss & Haselton, 2005). For example, even where the majority of both men and women are more upset by one type of infidelity than the other, men are expected to be more upset than women by sexual infidelity.

Meta-analyses of jealousy studies show strong support for this prediction using both forced choice (Harris, 2003) and continuous

(Sagarin et al., 2012) measures. However, the supposition of universality is premature, as it has yet to be tested in a population that deviates significantly from the social norms and sexual stereotypes of the industrialized world. The vast majority of studies come from W.E.I.R.D (Western, Educated, Industrialized, Rich and Democratic) societies (Henrich, Heine, & Norenzayan, 2010), mainly university populations. Studies conducted in non-western settings are also almost exclusively conducted with undergraduates (e.g. Buss et al., 1999 in Korea and Japan, Geary, Rumsey, Bow-Thomas, & Hoard, 1995 in China, Fernandez, Sierra, Zubeidat, & Vera-Villaruel, 2006 in Chile, and Brase, Caprar, & Voracek, 2004 in Romania). To date, there are no studies that have been published using data from respondents from a small-scale society or natural fertility (non-contracepting) population.

University samples differ markedly, and in important ways, from the majority of extant human societies and from the types of societies that existed for most of human history. Therefore, it is crucial to examine jealous response in more representative samples before making broad generalizations about human behavior on the basis of the existing evidence. For example, although student respondents may be sexually active, they have widespread access to contraception and are rarely married or have children. The reproductive stakes of infidelity are therefore much lower than they would be in other populations where sex is more likely to result in pregnancy and to have long-term consequences. Similarly, the social consequences of infidelity among young adult student populations might also differ from those in small-scale societies. In small-scale societies individuals

\* Corresponding author.

E-mail address: [bscelza@gmail.com](mailto:bscelza@gmail.com).

are often in very close contact with their partner's kin, and they may be subject to formal punishments if their infidelities become known (Betzig, 1989). Finally, the typical level of paternal investment varies greatly across societies, and certain types of fathering such as direct care are generally greater in W.E.I.R.D. populations (Whiting & Edwards, 1988; Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Pleck & Masciadrelli, 2004). Given that behavioral responses such as jealousy could be conditioned on local mating vs. parenting trade-offs (as predicted by Buss and colleagues in their original paper, but never explicitly tested), the jealous response of a typical western male will not necessarily be observed among men in societies where paternal investment is lower. Similarly, female jealous responses could also be conditional on typical levels of paternal investment within a given society. For these reasons, studies of jealousy in small-scale, natural fertility populations are crucial to understanding the range of responses men and women express in response to threats of infidelity, and to determining the plausibility of a universal sex difference in jealous response.

In addition to providing a strong test of the prediction that there will be a universal sex difference in jealous response, this study also explores the range of evolutionarily relevant factors that are expected to affect jealous response. This will build upon the general notion that jealousy is a facultative response, and expands upon previous work from other disciplines, which has focused largely on the influences of personal experience.

Non-evolutionary studies of jealousy have shown that factors such as relationship experience (Murphy et al. 2006) experience with infidelity (Harris, 2002; Edlund, Heider, Scherer, Farc, & Sagarin, 2006; Johnson, 2006; Sagarin et al., 2012), and sexual orientation (Harris, 2002; DeSouza, Verderane, Taira, & Otta, 2006; Sagarin et al., 2003) are important moderators of how people perceive jealous threats. We also know from previous work that there is significant variation in the magnitude of the sex difference that is seen, as well as variation in how upset men and women are to different types of jealousy when it is measured continuously (Harris, 2003). For example, in Buss and colleagues' original study of American undergraduates, 60% of males reported more distress to a sexual infidelity than an emotional one, compared to only 17% of women (Buss et al., 1992); however, in both Germany and the Netherlands the majority of both men and women report more distress to the hypothetical emotional infidelity, and the differences between the sexes are less pronounced than they are in the U.S. sample (Buunk, Angleitner, Oubaid, & Buss, 1996). Similarly, in Romania men and women also had very comparable responses, with 36.6% of men and 30% of women being more upset by a sexual infidelity (Brase et al., 2004).

If jealousy is a facultative response, it could be conditional upon either individually specific context and behavior or group-level norms (Buunk & Hupka, 1987; Geary et al., 1995) and the evidence discussed above seems to point to a role for both. However, once again we are currently limited in our ability to see the full spectrum of variation because of similarities in the populations where jealousy tests have been run. Whether the triggers of variation in western cultures are the same as those in other places is currently unknown, but there is good reason to believe that they might differ. While in western societies, romantic love, commitment and marriage are largely intertwined, these phenomena are often separate, or at least more complexly related, in societies that have polygyny, arranged marriage and frequent divorce or infidelity. As mentioned above, levels of paternal investment and female reliance on male resources are also quite variable, and these can affect intra-population sex differences as well as cross-cultural averages.

Here I present the first test of the Buss jealousy hypothesis from a small-scale, natural fertility population, the Himba of northwest Namibia. The Himba were chosen because they differ from previously studied populations in three key ways. First, the Himba

are a non-contraceptive using population. In interviews with 50 women, only 30% had ever heard of a modern method of contraception, and only 14% had ever used contraception, with none currently using. Second, the Himba profess to have very high rates of infidelity and have one of the highest reported rates of extra-pair paternity in the world (Scelza, 2011), reflecting a prevalent risk of paternity uncertainty for men. Relatedly, infidelity is normatively permitted for both men and women, representing a very different level of social acceptance than is found in typical western populations. Third, paternal investment by Himba men is relatively low. The majority of wealth is inherited matrilineally, brideprice paid for sons' marriages is low compared to other African pastoralists, and direct care by fathers is minimal.

Given this suite of cultural traits, the Himba are predicted to differ from previously studied populations in the following ways: (i) *Himba men will exhibit more distress over sexual infidelity than men in other populations.* This is because of the high level of reproductive risk that occurs in a natural fertility population, coupled with the local behavioral norms for frequent infidelity and autonomy in female mate choice; (ii) *Himba women will exhibit less distress over emotional infidelity than their same-sex counterparts in other populations.* This is because Himba women expect less investment from males than is typical in western populations. Therefore, to the extent that emotional infidelity by men predicts diversion of resources from their wives, Himba women have less to lose as a result of emotional infidelity than western women. In addition, the frequent occurrences of arranged marriage and divorce may be associated with looser emotional bonds between couples, making emotional infidelity a weaker cue for investment than is seen in other cultures; (iii) *A significant sex difference in jealous response will still exist, with men being more upset by sexual infidelity than women.* Despite the predictions that both sexes will be more likely to skew their responses toward sexual infidelity, men should still be more upset than women because they face uncertain parentage, which women do not, and because there is some reliance of women on male resources.

A set of variables relating to individual relationship status will be used to determine any predictors of intra-population variation. These will include current marital status, number of marriages, and whether the current (or last in the case of those currently single) relationship was a love match or an arranged marriage. Age and number of children will also be evaluated as these are linked to reproductive value and reproductive success respectively. I am not making *a priori* predictions about the direction of the effects these variables will have, as this is an exploratory study.

## 2. Methods

The standard protocol of a forced choice short vignette experiment is used in order to facilitate comparisons with existing studies. Specifically, the present study was designed as a replication of Buss et al. (1999). This particular iteration of the forced choice model was chosen because it was designed to address concerns about the possibility of a "double-shot" or "logical beliefs" effect (Buss et al., 1996). These hypotheses suppose that emotional jealousy and sexual jealousy are not perceived as independent by participants, and that because men are more likely to believe sexual infidelity implies emotional infidelity and women the opposite, a sex difference could result because emotional infidelity signifies two indiscretions for women and sexual infidelity two indiscretions for men (DeSteno & Salovey, 1996; Harris & Christenfeld, 1996). To solve this dilemma, Buss and colleagues designed a study explicitly stating that both kinds of infidelity had occurred and asked participants to choose which of the two was most distressing (Buss et al., 1999). That statement was used here, and reads:

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات