

Original Article

Sex Differences in Feelings of Guilt Arising from Infidelity

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Abstract: Although there is extensive literature regarding sex differences in jealousy due to infidelity, guilt resulting from infidelity remains unexplored. We hypothesize that men will feel guiltier from imagined emotional rather than sexual infidelity, as it is most important for their partner's reproductive success. Similarly, we predict that women will feel more guilt from imagined sexual rather than emotional infidelity. The findings indicate a different pattern; men feel guiltier following sexual infidelity, whereas women feel guiltier following emotional infidelity. Results also show that both sexes believe their partners would have a more difficult time forgiving sexual, rather than emotional, infidelity, but women and not men report that sexual infidelity would more likely lead to relationship dissolution. These findings are discussed in view of evolved mating strategies and individual reproductive success.

Keywords: infidelity, sex differences, guilt, mate selection.

Introduction

Infidelity in romantic relationships is far from rare; recent national surveys of Americans have documented that between approximately 20 to 25% of respondents report at least one sexual affair during their lifetime (Atkins, Baucom, and Jacobson, 2001; Laumann, Gagnon, Michael, and Michaels, 1994). All infidelity is not the same, however, as women and men apparently do not perceive their affairs in an equivalent manner. Women tend to state that their affairs are more emotional than sexual, while men tend to state that their affairs are more sexual than emotional (Glass and Wright, 1985). This sex

difference in the emotional versus sexual characterization of infidelity has been echoed in numerous evolutionary-based studies.

One of the most well documented, evolutionary-based sex differences in behavior is that of jealousy resulting from a mate's infidelity. A myriad of investigations show that women tend to be more jealous of a mate's emotional infidelity, and men tend to be more jealous of a mate's sexual infidelity (e.g., Brase, Caprar, and Voracek, 2004; Buss, Larsen, Westen, and Semmelroth, 1992; Buss et al., 1999; Shackelford, Buss, and Bennett, 2002). Emotional infidelity occurs when an individual who is in a committed relationship becomes emotionally involved with (e.g., feels romantic love towards) a person other than their mate (Brase et al., 2004), whereas sexual infidelity is sexual involvement with a third party. The explanation for this sex difference lies in its importance to an individual's reproductive success. Daly, Wilson, and Weghorst (1982) argued that male sexual jealousy evolved as a cuckoldry avoidance mechanism, because men are not assured of paternity and are at risk of providing for the progeny of another man. In contrast, women, who have full maternal confidence, should be more threatened by emotional infidelity than by sexual infidelity, because their mating strategy involves finding and retaining a mate willing to provide long-term investments in children. Emotional infidelity increases the probability that a man's time, attention, and, ultimately, resources will be redirected to a rival woman and her children (Daly et al., 1982; c.f. DeSteno, Bartlett, Braverman, and Salovey, 2002, for an alternative explanation).

Given that jealousy due to infidelity has been well studied, it is curious that there has been little attention devoted to the feelings of people who actually engage in, or at least contemplate, infidelity. Undoubtedly, numerous emotions must result as a consequence of infidelity. However, guilt should be a primary consequence, as unfaithful individuals will likely perceive themselves as breaking a prior commitment or social contract. Guilt has been defined as "an interpersonal phenomenon that is functionally and causally linked to communal relationships of people...It is a mechanism for alleviating imbalances or inequities in emotional distress within the relationship" (Baumeister, Stillwell, and Heatherton, 1994, p. 243). Guilt is central to responsible behavior (Bear, Manning, and Izard, 2003) and may serve as a warning that one's actions are unacceptable to the partner and social group. The resulting aversive emotional state that follows from guilt may cause infidelity to be viewed as an objectionable social transgression, making it unappealing and less likely to be repeated.

Within social species, guilt, which is associated with the threat of doing harm and the desire for reparation, shapes the behavior of individuals and determines their social standing and acceptance within the group (Drickamer and Vessey, 1982). Guilt fosters a general interest in the wellbeing of others in the group, making individuals more responsive to each other's distress, and hence, more likely to offer sympathy and aid (Gilbert, 1997). That is, one purpose of guilt is to stimulate individuals to examine the hardship that they cause others through their actions and, as a consequence, to evoke reparative behaviors. Once a transgression has been committed, guilt may help to reestablish the individual as a member of the group by motivating reparative behaviors. In the case of infidelity, the display of guilt might help rebuild trust by indicating to the offended party that the perpetrator does not plan to repeat the behavior.

Previous research on extramarital sexual relationships has indicated that men report experiencing less guilt following an infidelity and are more likely to see it as being justified

than women (Johnson, 1970). Similarly, although both sexes believe extramarital coitus is the result of marital problems, women are more prone to feeling guilt following infidelity than men (Spanier and Margolis, 1983). However, the experience of guilt does not seem to depend on spousal knowledge of the infidelity (Spanier and Margolis, 1983). Moreover, Mongeau, Hale, and Alles (1994) presented undergraduates with scenarios of sexual infidelity that varied according to whether the infidelity was intentional or unintentional. Participants were asked to imagine themselves as engaging in the infidelity. The results showed that guilt was the only feature inversely influenced by intent. That is to say, the more intentional the act, the less guilt was reported, demonstrating it to be a critical factor in studies of infidelity. These initial results on infidelity are promising, but limited. In particular, they do not encourage evolutionary-based predictions, such as the comparison across various forms of infidelity (i.e., sexual versus emotional). The present study allows us to directly test evolutionary-based theories, adding to the overall knowledge of guilt following infidelity, and helps to bridge the gap between guilt and previous jealousy research. Additionally, as there is little known about forgiveness following infidelity and its relationship to guilt, the secondary aim of the present research is to address this need.

Although infidelity is a major cause of divorce (Atkins, Yi, Baucom, and Christensen, 2005; Betzig, 1989), not all couples choose to dissolve their relationship after a transgression (Lawson, 1988). In part, the decision to forgive a mate instead of choosing to end the relationship stems from the form of infidelity that took place. Men, relative to women, find it more difficult to forgive a mate's sexual rather than emotional infidelity and are more prone to end the relationship following their partner's sexual infidelity (Shackelford, Buss, and Bennett, 2002). To date, however, there has been no investigation of guilt in conjunction with the decision to either forgive the mate or dissolve the relationship, based on the form of infidelity.

As previously stated, the primary goal of the current study is to investigate sex differences in guilt and forgiveness with respect to infidelity. To draw comparisons with prior research on jealousy, the forced-choice measure of jealousy that is commonly used in this line of research (i.e., Sexual Jealousy Scale; Buss et al., 1992, 1999) was adapted by substituting the term "guilt" for any mention of the term "jealousy." There have been criticisms about the use of forced-choice procedures in infidelity research, such as those suggested by De Steno et al. (2002) who proposed that this format does not adequately capture a participant's true intentions. They contended that the sex difference in infidelity originates from the measurement format, and that there is a complex decision-making process involved that leads women to override any initial leanings towards sexual infidelity and to select emotional infidelity ultimately as the most distressing. If this contention were true, one would predict a longer reaction time in responses for women given the forced-choice dilemma. However, an analysis of response times for choosing sexual versus emotional infidelity clearly negates this idea. Schützwohl (2004) found that men are far quicker at selecting sexual infidelity and women at selecting emotional infidelity. DeSteno et al.'s (2002) claim was further refuted by Pietrzak, Laird, Stevens, and Thompson (2002) who compared forced-choice responses with continuous rating scales and physiological measures that included heart rate, skin temperature, electrodermal activity, electromyographic activity of the forehead muscle, and systolic and diastolic blood pressures. All measures indicated the same outcome: men are more distressed by imagined sexual infidelity, and women by imagined emotional infidelity. Interestingly, men and

women reported feeling more angry about the type of infidelity that distressed them, thus providing the possibility that other emotions, such as guilt, may be important in people's experience of infidelity.

Regardless of the potential flaws with the format, our ultimate reason for using the forced-choice format is to examine guilt in the same manner as jealousy so that parallels can be made between the two emotions. Hence, to permit comparison, we adopted the typical style of measurement that has been used in this area of research (e.g., Buss et al., 1992; Buss et al., 1999; Pietrzak et al., 2002; Schützwohl, 2004).

Since one function of guilt is to prohibit people from behaving in undesirable ways within social relationships, individuals are likely to experience guilt with respect to the cost of the infidelity on their partner's reproductive success. Therefore, men are predicted to experience more guilt from an imagined performance of emotional rather than sexual infidelity, paralleling prior findings that women are more distressed by a mate's emotional infidelity (e.g., Buss et al., 1992; Pietrzak et al., 2002). Likewise, it is hypothesized that women experience more guilt from the performance of an imagined sexual rather than emotional infidelity. Further, we propose that women will expect a partner to have more difficulty forgiving sexual infidelity, and that sexual infidelity will be more likely to lead to relationship dissolution. Similarly, we expect men to indicate that a partner will have more difficulty forgiving emotional infidelity, and that emotional infidelity will be more likely to lead to relationship dissolution.

Materials and Methods

Sixty-six female (M age = 27.7, SD = 7.5) and 65 male (M = 28.4, SD = 8.2) heterosexual participants were solicited from various community locations in the metropolitan city of Toronto, Canada. Fifty-seven percent of all participants claimed to be in a committed relationship, 10% reported being in a casual relationship, and 33% reported they were not currently involved in a romantic relationship. Self-reported ethnicity of participants was varied; 33% reported that they were "Caucasian/White descent," 22% replied "Canadian," 22% replied "Asian/East Asian/South Asian," 14% replied "African/Black descent" and 9% replied "other."

The survey was patterned after Buss et al.'s Sexual Jealousy Scale (1992, 1999). The wording of the survey matched this measure as closely as possible, but was designed to probe guilt rather than jealousy. The survey also introduced a third party, who was intended to be the person with whom the affair took place. The dilemmas were counterbalanced across two versions of the survey, and through the alternation of response options within each survey. In Part 1 of the survey, participants were presented with the following instructions:

"Please think of a serious or committed romantic relationship that you have had in the past, that you are currently having, or that you would like to have. Imagine that, without your partner knowing, you have become interested in someone else (Person S). What would make you feel more guilt? Please circle only one answer."

Participants then answered the following forced-choice dilemmas. Dilemma 1: "Imagining yourself enjoying passionate sexual intercourse with Person S" or "Imagining yourself forming a deep emotional attachment to Person S." Dilemma 2: "Imagining yourself trying different sexual positions with Person S" or "Imagining yourself falling in

love with Person S.” Dilemma 3: “Passionate sexual intercourse with Person S” or “Deep emotional attachment to Person S.” Dilemma 4: “Imagining yourself having sexual intercourse with Person S, but you are certain that you will not form a deep emotional attachment” or “Imagining yourself forming a deep emotional attachment to Person S, but you are certain that you will not have sexual intercourse.” Dilemma 5: “Imagining that you are still sexually interested in Person S, but are no longer in love with this person” or “Imagining that you are still emotionally involved with Person S but are no longer sexually interested in this person.” Lastly, Dilemma 6: “Imagining you have sexual intercourse for one night with Person S with no chance of any emotional involvement” or “Imagining you become emotionally involved with Person S with no chance of any sexual involvement.”

Part 2 of the study was derived from the work of Shackelford et al. (2002), who used the standpoint of jealousy to examine the influence of infidelity on a mate’s decision to forgive or dissolve the relationship. Mentions of jealousy were replaced with guilt and then participants were asked to assume the imagined affair had already occurred. Participants were then asked three questions pertaining to infidelity and requested to choose between sexual or emotional alternatives. These three questions were: “Which aspect of your involvement with Person S would make you feel more guilty?” (Dilemma 7), “Which aspect of your involvement do you think would be more difficult for your committed partner to forgive?” (Dilemma 8), and “Which aspect of your involvement with Person S would be more likely to lead you to break up with your committed partner?” (Dilemma 9).

With regards to procedure, a female researcher approached participants individually in a variety of public locations and asked them to participate in a brief study on personal relationships. Individuals were solicited only if they appeared to be alone and unhurried. Participants completed an informed consent form, followed by the survey, and a short debriefing session. Completed surveys were returned in a sealed, unmarked envelope to the researcher.

Results

A significant sex difference emerged for the six summated items of the survey (Part 1), producing small to moderate effects according to the benchmarks of Cohen (1988). Independent-sample *t* tests indicated that women ($M = 3.2$, $SD = 2.0$) chose imagined emotional infidelity as a cause of guilt significantly more than men ($M = 2.6$, $SD = 1.6$; $t_{129} = 2.01$, $p < .05$, $d = 0.35$). In contrast, men ($M = 3.4$, $SD = 1.6$) chose imagined sexual infidelity as a cause of guilt significantly more often than women ($M = 2.7$, $SD = 2.0$; $t_{129} = 2.07$, $p < .05$, $d = 0.36$).

Chi-square analyses for the individual items in Part 1 yielded three significant within-sex differences. d_{Cox} was also calculated (see Sánchez-Meca, Marín-Martínez, and Chacón-Moscó, 2003), a metric based on odds ratios, as a measure of effect size to allow the benchmarks of Cohen’s *d* effect size (1988) to be applied. Significantly more women reported that they would feel more guilt from falling in love rather than from trying different sexual positions (Dilemma 2) ($\chi^2 = 6.06$, $p < .01$, $d_{\text{Cox}} = 0.38$) but the proportion of women was equivalent for the remaining dilemmas. Significantly more men reported they would feel more guilty following sexual infidelity without emotional involvement rather than emotional infidelity without sexual involvement (Dilemma 3) ($\chi^2 = 4.45$, $p < .05$, $d_{\text{Cox}} = 0.36$), even when the sexual infidelity occurred on a one-night basis (Dilemma

6) ($\chi^2 = 4.45, p < .05, d_{\text{Cox}} = 0.32$). The proportion of men was equivalent for the remaining dilemmas.

The summated three items of the survey pertaining to partner forgiveness (i.e., Part 2) did not yield a significant sex difference for emotional infidelity, ($t_{129} = 0.60, p > .05$), nor for sexual infidelity ($t_{129} = 0.76, p > .05$). However, within-sex chi-square analyses yielded three significant differences. Although relatively equal numbers of males ($\chi^2 = 0.14, p > .05$) and females ($\chi^2 = 0.39, p > .05$) felt that either form of infidelity would lead them to feel guilty (Dilemma 7), both sexes thought that a partner would find it significantly more difficult to forgive sexual as opposed to emotional infidelity (Dilemma 8) (women: $\chi^2 = 4.45, p < .05, d_{\text{Cox}} = 0.30$, and men: $\chi^2 = 8.14, p < .001, d_{\text{Cox}} = 0.45$). Women, but not men, thought that their sexual infidelity would be more likely to lead to a break-up than would emotional infidelity (Dilemma 9) ($\chi^2 = 6.06, p < .01, d_{\text{Cox}} = 0.38$).

Discussion

Women have historically depended on men for resources and protection (e.g., Hrdy, 1981). Hence, women may be sensitive to a partner's emotional infidelity, as it signals he may allocate resources and protection to other women, and therefore, they express jealousy over a mate's emotional infidelity (e.g., Buss et al., 1992). This theory is extended to propose that men will feel more guilt over imagined emotional rather than sexual infidelity, as emotional infidelity may jeopardize a mate's reproductive success. Likewise, given paternal uncertainty, men may be more sensitive to women's sexual infidelity. Hence, women are predicted to feel more guilt over imagined sexual infidelity rather than emotional infidelity because it potentially decreases a mate's reproductive success. However, the results indicate the reverse of both these predictions to be true. That is, the findings indicate that men feel more guilt over imagined sexual infidelity, and women feel more guilt over imagined emotional infidelity. We now discuss a variety of possible reasons for these unexpected results.

First, throughout evolutionary history, men have sought to establish paternal confidence so as to avoid erroneously investing time, resources, and energy in children who are not biologically related to them (e.g., Daly et al., 1982). Thus, it is hardly surprising that men are relatively more likely to express jealousy when their partners commit sexual infidelity but less so over emotional infidelity. Perhaps men are prone to experience more guilt over sexual rather than emotional infidelity given the importance they place on it in their relationships. They may believe that their sexual loyalty is as important to their mates as it is to them, and consequently, feel more guilt after performing an act of sexual infidelity.

Emotional infidelity may effectively signal a lack of dedication towards one's mate. Since women have historically relied on men's resources (e.g., Hrdy, 1981), which are likely allocated towards individuals with whom they feel emotional loyalty, this form of infidelity should be important to women. Similar to the reasoning above, one explanation for the results of the current study is that women cannot see past the importance they place on emotional loyalty, and hence, it causes them the most guilt.

Second, the results suggest an absence of cross-sex mind reading (Haselton and Buss, 2000). When trying to ascertain the intentions of the opposite sex, individuals routinely make errors and the findings of the current study may be another instance of this

behavior. If individuals do not correctly “mind read” the opposite sex then it might not be possible for them to feel guilt over the form of infidelity that could potentially harm a mate’s reproductive success. Instead, if an individual assumes that everyone, regardless of their sex, is most concerned with the same form of infidelity that they themselves are most concerned about, this person would consequently make false inferences leading to feelings of guilt. This faulty logic may then lead women to feel more guilt over emotional infidelity, under the belief that men consider emotional infidelity most important. A similar process could occur for men.

Third, there are sex differences in how extra-dyadic relations are perceived. Glass and Wright (1985) found that women believe their affairs to be more emotional than sexual, and that men believe their affairs to be more sexual than emotional. It is possible that women experience guilt over emotional infidelity because they actually perceive their relationships to be primarily emotional. In contrast, because men perceive their affairs to be primarily sexual, their guilt is focused on the sexual aspects of the relationship.

Fourth, it is possible that guilt is a consequence of intra-sexual competition. That is, as men know that other men, against whom they compete for mates, are most upset by sexual infidelity, men will thus feel most guilty about sexual infidelity in an attempt to minimize the likelihood or severity of competing males’ retribution. The opposite is possible for women in that they feel the greatest guilt over emotional infidelity, as it is more likely to trigger retributive actions by other women against whom they are competing for mates.

Our findings of a sex difference in guilt resulting from sexual or emotional infidelity diverge further from the jealousy literature in that the differences we obtained are smaller and seen for only three of the six dilemmas in Part 1. There are at least three potential explanations for this difference. First, guilt may be less suitable for the use of a self-report methodology than jealousy, in that it may be a deeper, more reflective emotion, and subsequently harder for individuals to report. However, we expect that both guilt and jealousy fall victim to a social desirability bias. Second, perhaps the nature of the task caused the difference, but this option seems unlikely as the limitations of the forced-choice questionnaire and the use of imagined scenarios are the same format as was used in earlier studies (see Shackelford et al., 2002, for discussion). Third, the divergence is partly explained by differences in sampling procedure; the current investigation used a community sample, but Buss et al., (1992), and Shackelford et al. (2002), tested undergraduate samples. Support for this contention was obtained by Voracek (2001), who found that marital status is a stronger predictor of responses towards infidelity than participant’s sex. It should be noted that in the current study the possibility of a marital status effect was examined but exploratory regression analyses on the data showed that it is not a significant predictor. As well, it may be the case that the lack of difference is due to some combination of these explanations and is not simply the result of a single factor.

The dilemmas pertaining to a mate’s decision to forgive or dissolve the relationship are particularly illuminating. We hypothesize that it would be advantageous for each sex to feel maximal guilt for the form of infidelity considered most important to the opposite sex because guilt should facilitate reparations within social relationships. We further predict that this pattern would relate to forgiveness. Men should expect their partners to find it difficult to forgive emotional infidelity and that it more likely leads to relationship dissolution. Similarly, the reverse is hypothesized to be true for women. Again, the results

for the items on forgiveness did not yield the expected findings. Women believe it would be more difficult for men to forgive sexual infidelity, and sexual infidelity would be more likely lead to relationship dissolution. Given that men are more distressed by sexual infidelity, it is logical that women perceive it to be harder for men to forgive this form of transgression. To clarify, this finding suggests that women are aware of the importance men place on sexual loyalty. Contrariwise, men seem to believe that sexual infidelity would not necessarily lead to a break-up more often than emotional infidelity, although men clearly find sexual infidelity more difficult to forgive than emotional infidelity. This result indicates that men are aware, to some extent, of the importance women place on emotional loyalty. Furthermore, one can speculate from these findings that men may believe women have a stronger need for the relationship, and hence, they will be more tolerant of transgressions by choosing to forgive rather than dissolve the relationship. This contention has some support, as women are far less likely to terminate a relationship because of a husband's infidelity (Betzig, 1989), whereas men are more likely than women to perceive a sexual infidelity as grounds for divorce (Shackelford, 1998). This finding suggests that cross-sex mind reading is in fact occurring, and that the second explanation for men feeling more guilt over sexual infidelity and conversely women feeling more guilt over emotional infidelity is thus not very likely. That is, it is unlikely that a failure to perform cross-sex mind reading is the cause of the unexpected results.

One on-going debate in the jealousy literature is whether participants interpret the two types of infidelity as distinct or overlapping. DeSteno and Salovey (1996) argued that men perceive women's sexual infidelity as simultaneously signaling emotional infidelity because women rarely engage in sexual behavior without an emotional commitment. They posit that women believe men can engage in sexual infidelity without emotional infidelity, but that emotional commitment automatically implies sexual activity. Using mutually exclusive wording of the dilemmas, Buss and colleagues (1999) concluded that the two forms are distinct. We included these dilemmas in the present study of guilt and found only one to yield a sex difference. When asked which would lead to more guilt, emotional involvement with no chance of sexual involvement or sexual intercourse for one night with no chance of emotional involvement (i.e., Dilemma 6), men more frequently chose the latter option. Perhaps no other dilemma captures the dichotomy between the infidelities as strongly; people rarely expect nor seek emotional involvement from this type of relationship. Since there are sex differences in involvement in one night stands (i.e., a sexual encounter where the participants met that night), in that males' infidelity is more likely to take this form and involve someone of limited acquaintance (Humphrey, 1987), the result may be partly due to plausibility. Perhaps women do not relate well to the idea of having a one-night stand, whereas men have no trouble, and this difference in believability has implications for the results. There is at least partial support for this theory, as Fenigstein and Peltz (2002) found that, although both women and men believe each infidelity could occur independent of the other, participants felt sex-only infidelity was more plausible for men and emotion-only infidelity more plausible for women. In conclusion, the two forms of infidelity seem distinct, but that the form of stimuli used in jealousy research (and subsequently this study) may lead to a consistent sex difference partly because of plausibility.

One may readily identify the limitations of the current study. Participants were not necessarily individuals who had experienced actual infidelity, and instead, imagined

scenarios were used especially to replicate the original research on jealousy and infidelity. With respect to jealousy, whether imagined responses parallel actual distress remains unresolved. Harris's (2005) review of the literature concluded that individuals involved in real infidelity respond differently, often in contradiction, to those who are asked to imagine their response. However, Edlund, Heider, Scherer, Farc and Sagarin (2006) demonstrated that the hypothetical findings remain robust when compared with those who experienced actual infidelity. Thus, it is not possible to yet determine whether imagined versus actual infidelity will cause different results for perceptions of guilt. Also, as we used a community-based sample as opposed to undergraduate students that may have limited experience in relationships, it is possible that participants were better able to imagine infidelity because they have experienced it at some time in their life.

There are many directions for further research. One immediate direction is for researchers to collect reaction times in responding to the scenarios, perhaps using identical methods of Schützwohl (2004). This procedure would address the issues surrounding the use of a forced-choice procedure. Alternatively, one could explore the underpinnings of infidelity that lead to guilt. As there are many cues to a partner's impending infidelity, such as sexual boredom or argumentativeness (Shackelford and Buss, 1997b), the subsequent experience of guilt may be associated with the salience of these cues. That is to say, because sexual boredom is a strong cue for sexual infidelity, people who use this cue prior to engaging in sexual infidelity may experience relatively low guilt, as they believe that they have forewarned the mate. When these signals lie undetected, the individual may believe that the mate is not concerned enough to respond. Similarly, it would be informative to explore how people determine that an infidelity is justified, and how this perception corresponds with feelings of guilt.

Another area for research pertains to personal mate value. Women who have higher value for mating, in that they are more physically attractive than their husbands, may experience less guilt following an infidelity, as they are aware that they can more easily find a new relationship should the current one end (Shackelford and Buss, 1997a). In contrast, women whose mate value is lower may feel guiltier, leading them to expend more effort on repairing the relationship. The same pattern could emerge for men.

Although jealousy in conjunction with infidelity has been a frequent topic of research for over a decade, there has been little, if any, attention to the feelings of people actually engaged in or contemplating infidelity. One emotion experienced in this situation is guilt, so an exploration of whether feelings of guilt correspond to the form of infidelity that is most important for a mate's reproductive success was undertaken. The findings offer a much needed, alternative view to the ongoing story of jealousy research and represent a promising start to a new line of inquiry.

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