

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

The intentional object of romantic jealousy

Achim Schützwohl

Brunel University

to appear in *Evolution and Human Behavior*

Date: October 16, 2007

Running head: Intentional object of jealousy

Correspondence concerning this article should be addressed to Achim Schützwohl,
Department of Psychology, Brunel University West London, Uxbridge, Middlesex, UB8 3PH,
United Kingdom. Email: achim.schuetzwohl@brunel.ac.uk

Word count: 5,865 words including References

27 **Abstract**

28 Three studies tested the hypothesis derived from evolutionary psychological considerations of
29 sex differences in the intentional object of romantic jealousy. In Study 1 and 3, participants
30 had to indicate in a forced-choice whether their jealousy would be primarily directed towards
31 the partner or the rival. In Study 2, participants rated separately the extent to which their
32 jealousy would be primarily aimed at the partner and the rival. In Study 1 and 2, the
33 participants' answers referred to either a mate's actual emotional or sexual infidelity, in Study
34 3 they referred to suspected infidelity. As predicted, in each study significantly more women
35 than men reported that their jealousy would be primarily directed at the rival. Also as
36 predicted, these sex differences were especially pronounced when confronted with the
37 adaptively primary infidelity type (i. e., male emotional and female sexual infidelity,
38 respectively). Finally, Study 3 additionally showed that these sex differences are moderated
39 by the participants' current relationship status and their own unfaithfulness. Limitations and
40 implications of the findings are discussed.

41

42 **Keywords:** jealousy; sexual infidelity; emotional infidelity; evolutionary psychology; sex
43 differences; intentional object

44

45 **1. Introduction**

46
47 When we love, hate, pity, or fear, then we typically love, hate, pity, fear someone or something.
48 And when we are angry, proud or surprised, then we are typically angry at, proud of, surprised
49 about someone or something. This *someone* or *something* towards which emotions are directed is
50 traditionally called the *intentional object* of the respective emotion. The intentional object has been
51 considered a fundamental characteristic shared by all mental phenomena including emotions by
52 both philosophical and psychological emotion theorists (e.g., Brentano, 1874/1973; Green, 1992;
53 Meinong, 1894; Ortony, Clore, & Collins, 1988; Searle, 1983; Siemer, 2005). In the above
54 examples of emotions, the intentional objects are usually readily identifiable: If we love or hate
55 someone, the intentional object of our love or hate is the person concerned; if we are proud of the
56 achievement of our child, the intentional object of our pride is the achievement of our child; and if
57 we are surprised about the unexpected success of our favorite soccer team, that success is the
58 intentional object of our surprise. Furthermore, these examples suggest that emotions can be
59 directed either at individual things (e.g., people), or at states of affairs (e.g., Meinong, 1894).
60 Ortony et al. (1988) further refined this classification by proposing that emotion can be directed at
61 three different aspects of our world: objects, agents, and events. In the above examples, the focus
62 of love is on an object, the loved person and her properties; pride is directed towards the actions of
63 an agent; and surprise focuses on an event and its consequences.

64
65 With respect to the intentional object of romantic jealousy, however, matters seem to be
66 considerably more complicated: Although there is wide-spread agreement in the literature with
67 respect to the causes and consequences of romantic jealousy, no agreement exists on its intentional
68 object. That is, most authors agree that romantic jealousy is (a) aroused by a perceived threat to a
69 valued romantic relationship generated by a real or imagined attraction between the partner and a
70 (perhaps imaginary) rival and (b) motivates behavior aimed at countering the threat (e.g., Buss,

71 2000; Daly, Wilson & Weghorst, 1982, White & Mullen, 1989). In contrast, as concerns the
72 intentional object of romantic jealousy, many prominent theories of jealousy simply fail to specify
73 this object (cf. Paul, Foss & Galloway, 1993); and others consider either objects, events, or actions
74 as the intentional object of jealousy. To illustrate, Spinoza (1677/1948) defined jealousy as hatred
75 towards the partner together with envy of the rival; presumably, then, being a mixture of two other
76 emotions, jealousy has *two* intentional objects. More recently, Solomon (2000) conjectured that the
77 object of romantic jealousy involves “not only a threatened loss but a perpetrator as well (perhaps
78 the threatened object as a perpetrator too), and possibly the larger social situation in which
79 jealousy involves not only loss but humiliation as well” (p. 11). At an empirical level, Pines and
80 Friedman (1998) provided some evidence that women might focus their jealousy more than men
81 on the threat to the relationship imposed by a mate’s infidelity. In the scheme of Ortony et al.
82 (1988), *hatred* and *envy* are directed at a person qua object, whereas the threat to the relationship
83 imposed by a mate’s infidelity focuses on an event and its consequences. Moreover, emotional and
84 sexual infidelity can be conceived of as events, but they can also be construed as actions by two
85 agents (the partner and the rival).

86
87 The diversity of the proposed objects of jealousy could simply reflect the complexity of
88 jealousy itself. Indeed, authors such as Spinoza (1677/1948) and Freud (1924) have argued that
89 jealousy may not be a discrete emotion but should be considered to be a compound of several other
90 emotions, such as hate and envy; grief and enmity; or sadness, fear, anger, self-pity, rage, hate,
91 each of which is directed at a specific object (cf. Hupka, 1984). However, the disagreement about
92 the intentional object of romantic jealousy could also reflect that jealousy theorists have not paid
93 sufficient attention to this issue, possibly because they considered it to be of only minor
94 significance for the understanding of this emotion. In contrast, I believe that the intentional object
95 of jealousy is essential for a proper understanding of this emotion for at least three reasons. First,
96 any jealousy theory is incomplete without the identification of its intentional object. Second, the

97 identification of the intentional object of jealousy contributes to the delineation of jealousy from
98 other emotions that might co-occur in the context of a partner's suspected or actual infidelity but
99 have other intentional objects. And third, it seems crucial for the deduction of hypotheses relating
100 to the regulation of cognitive and behavioral processes motivated by men's and women's jealousy
101 mechanism. For it is the intentional object – and not necessarily the cause or elicitor – of jealousy
102 that presumably guides and directs these cognitive and behavioral processes. Daly et al.'s (1982)
103 definition of jealousy as “a state that is aroused by a perceived threat to a valued relationship or
104 position and motivates behavior aimed at countering that threat” (p. 12) may help to illustrate this
105 point: If we want to understand more precisely *how* men and women will try to counter the
106 perceived threat to a valued relationship in the typical case, it is not sufficient to know that
107 jealousy has been aroused by that threat; we also need to know the intentional object of jealousy
108 because the threat will presumably be countered primarily by taking action against the object of
109 jealousy.

110
111 In this article I propose a functional, evolutionary psychological perspective on the issue of
112 the intentional object of romantic jealousy. Evolutionary psychologists view jealousy as a
113 psychological mechanism that evolved because it recurrently solved an essential problem of
114 individual reproduction in our evolutionary history: Infidelity in reproductive relationships (Daly
115 et al., 1982; Symons, 1979). A distinctive feature of the evolutionary view is the assumption of a
116 sex-specific evolved jealousy mechanism because different infidelity types have recurrently
117 threatened male and female reproductive success. Specifically, a woman's sexual infidelity
118 deprives her mate of a reproductive opportunity and may burden him with years of investment in a
119 genetically unrelated child. In contrast, a man's sexual infidelity does not burden his mate with
120 unrelated children, but he may divert resources from his mate's progeny. This resource threat may
121 be signaled by his level of emotional attachment to another female. As a consequence, men are
122 predicted to be more concerned than women with the prevention of the (re-) occurrence of a mate's

123 sexual infidelity, whereas, conversely, women are predicted to be more concerned than men with
124 the prevention of the (re-) occurrence of a mate's emotional infidelity (Buss, Larsen, Westen, &
125 Semmelroth, 1992; Schützwohl, 2005; 2006; Schützwohl & Koch, 2004).

126
127 Thus, jealousy is not just a complex or combination of other emotions, but a discrete
128 emotion the intentional object of which is likely an *individual* (the partner or rival), rather than just
129 a particular event or an act of infidelity involving these individuals. Although jealousy is typically
130 evoked by specific events or acts of infidelity involving the partner and a rival, it would not be
131 functional to be jealous about a particular transient act of infidelity that can take on many different
132 forms because this act is only a potential and often ambiguous signal of a deeper and more
133 enduring adaptive threat. Rather, to successfully cope with this threat it appears essential to
134 identify temporally stable local causes of these acts potentially signaling infidelity because only
135 then is it possible to predict and – possibly – to prevent the occurrence of future acts of infidelity
136 (Heider, 1958). The temporally stable local causes of these acts, however, are the partner and the
137 rival who therefore lend themselves as the preferred intentional objects of romantic jealousy.

138
139 Several arguments suggest sex differences with respect to the preferred person as the
140 intentional object of jealousy. Each of these arguments by itself might not be entirely conclusive
141 but given the fact that they all arrive at the same conclusion, taken together they make a strong
142 point for the prediction of sex differences. First, Trivers' (1972) parental investment theory
143 predicts that the sex that invests more in offspring will be more discriminating or selective in
144 mating and that the sex that invests less in offspring will compete for access to the higher investing
145 sex. Thus, it is the female who does the choosing in sexual and emotional affairs and therefore
146 lends herself as the primary target of jealousy. Second, as pointed out by one of the reviewers, a
147 perhaps even more compelling reason why Trivers' theory might imply that women will be the
148 primary target of jealousy is that the female is the more valuable sex in human mating. Third, a

149 main goal of the evolved jealousy mechanism is to prevent the (re-) occurrence of a mate's
150 infidelity. To achieve this goal, it is important to change the behavior of the individuals involved
151 and it is in all likelihood easier to change the behavior of the physically weaker sex (i.e. the
152 females' behavior). These considerations result in the main hypothesis that men and women
153 preferentially direct their jealousy towards the respective female part in the "eternal triangle"
154 (Buss, 2000). For the jealous man, this is his partner and for the jealous woman, this is the
155 (potential) rival. Additionally, based on accumulating evidence that the sex differences predicted
156 by the evolutionary view of jealousy are most pronounced when comparing men's and women's
157 response to the adaptively primary infidelity type (i.e., female sexual and male emotional
158 infidelity; Schützwohl, 2004; 2005; in press; Schützwohl & Koch, 2004), a second hypothesis is
159 proposed according to which this sex-specific preference in the intentional object of romantic
160 jealousy might be especially pronounced when facing the adaptively primary infidelity type than
161 the adaptively secondary infidelity type (i.e., female emotional and male sexual infidelity). These
162 hypotheses are tested in three studies. Study 1 used a forced-choice response format, asking
163 participants whether their jealousy would be primarily directed towards their partner or towards the
164 rival. In contrast, the participants of Study 2 indicated the extent to which their jealousy would be
165 directed towards their partner and towards the rival on continuous rating scales. In both studies, the
166 participants responded either to a mate's imagined actual sexual or emotional infidelity. Study 3
167 tested the hypotheses for suspected sexual or emotional infidelity using the forced-choice response
168 format. Additionally, the participants' current relationship status, their own and their partner's
169 (un)faithfulness were assessed as potential moderators in this study.

170

171 **2. Study 1**

172

173 *Participants*

174 The participants were 104 female and 92 male students at the University of Bielefeld. Their
175 age ranged from 17 to 33 years ($M = 23.3$; $SD = 2.5$). They were not paid for their voluntary
176 participation.

177

178 2.2. *Material*

179 The participants were first instructed to think of a committed romantic relationship that they
180 had had in the past, that they were currently having, or that they would like to have.

181 Depending on the condition, they were then informed that they discovered that their partner

182 had fallen in love or had sexual intercourse with another person. Subsequently, they were

183 asked to indicate whether their jealousy would be primarily directed towards their partner or

184 towards the rival. The order of the presentation of the two response alternatives was

185 counterbalanced across participants' sex and infidelity type.

186

187 2.3. *Procedure*

188 The participants were individually approached in the public areas of the university and asked

189 to fill out a short questionnaire. They were randomly assigned to the sexual or emotional

190 infidelity condition. To enhance the anonymity of the study, the participants were requested to

191 fold the questionnaire immediately after its completion and throw it into an opaque box.

192

193 3. **Results**

194 Table 1 shows the percentages of men and women reporting that their jealousy would be

195 primarily targeted at the rival as a function of infidelity type (sexual vs. emotional infidelity).

196 As predicted, combined across infidelity types, 71% of the women but only 45% of the men

197 reported that their jealousy would be primarily directed towards the rival, $\chi^2 = 14.23$; $df = 1$;

198 $N = 196$; $p < .001$, which represents a fairly large effect size (Hasselblad & Hedges, 1995), d

199 = .61. These differences were obtained for both emotional infidelity, $\chi^2 = 6.98$, $df = 1$; $N = 95$;

200 $p = .008$, $d = .61$, and sexual infidelity, $\chi^2 = 7.37$, $df = 1$; $N = 101$; $p = .007$, $d = .68$. As shown
201 in Table 1, in both conditions, significantly more women than men selected the rival as the
202 main target of their jealousy. Also as predicted, the sex-specific differences were especially
203 pronounced when confronted with the adaptively primary infidelity type: 83% of the women
204 confronted with emotional infidelity selected the rival, whereas only 33% of the men
205 confronted with sexual infidelity chose the rival, $\chi^2 = 26.00$, $df = 1$; $N = 101$; $p < .001$, $d =$
206 1.26. In contrast, women's and men's choices confronted with the adaptively secondary
207 infidelity type (i.e., male sexual and female emotional infidelity, respectively) did not
208 significantly differ (60% of the women and 58% of the men chose the rival), $\chi^2 < 1$ (see Table
209 1).

210 Insert Table 1 about here

211

212 **4. Study 2**

213

214 *4.1. Participants*

215 The participants were 167 female and 169 male students at the University of Bielefeld. Their
216 age ranged from 19 to 45 years ($M = 23.1$; $SD = 3.9$). They were not paid for their voluntary
217 participation.

218

219 *4.2. Material*

220 The participants in the sexual and emotional infidelity condition received the same
221 instructions as in Study 1, with the exception that they were asked to indicate the extent to
222 which their jealousy would be directed at their partner and at the rival on 8-point ratings
223 scales ranging from 0 (not at all) to 7 (very strongly). The order of the presentation of the two
224 rating scales was counterbalanced across participants' sex and infidelity type.

225

226 4.3. Procedure

227 The procedure was the same as in Study 1.

228

229 **5. Results**

230

231 Table 2 shows the men's and women's mean ratings of the focus of their jealousy on the
232 partner and the rival. A three-way analysis of variance (ANOVA) with sex and infidelity type
233 (emotional vs. sexual infidelity) as the between subjects factors and the jealousy ratings
234 towards the partner and the rival as the within-subjects factor yielded a significant main effect
235 for the within-subjects factor, $F(1, 332) = 9.73$, $MSE = 4.16$, $p = .002$, $\text{partial } \eta^2 = .028$. This
236 main effect was modified by a highly significant interaction with the participants' sex, $F(1,$
237 $332) = 11.54$, $p = .001$, $\text{partial } \eta^2 = .034$. The significant interaction is due to men providing
238 higher jealousy ratings towards the partner than women (4.61 vs. 3.83), $t(334) = 3.51$, $p =$
239 $.001$, $d = .38$. In contrast, no significant differences were found for men's and women's
240 jealousy ratings towards the rival (4.56 vs. 4.86), $t(334) = 1.28$, $p > .20$.

241

242 Insert Table 2 about here

243

244 Within-sex comparisons revealed that women reported that their jealousy would be
245 directed more at the rival than the partner (4.86 vs. 3.82), $t(166) = 4.58$, $p < .001$, $d = .51$, and
246 this difference was significant for both infidelity types, $ts > 2.75$, $ps < .008$, $ds > .42$. Men's
247 jealousy ratings, however, did not significantly differentiate between the partner and the rival
248 (4.61 vs. 4.56), $t(168) < 1$. The three-way interaction just fell short of the conventional
249 significance threshold, $F(1, 332) = 3.36$, $p = .068$, $\text{partial } \eta^2 = .01$. The remaining main
250 effects and interactions were not significant, $F_s < 2.5$, $ps > .10$.

251

252 To allow a direct comparison of the present ratings with the results of Study 1, the
253 percentages of men and women who provided higher jealousy ratings for the rival than the
254 partner are also presented in Table 1. Participants who did not differentiate (i.e., who rated
255 that their jealousy would be equally directed towards the partner and the rival) were excluded
256 in order to facilitate the comparison with the results of Study 1. This exclusion applied to 20%
257 of the men and 13% of the women, leaving 135 men and 145 women in the ensuing statistical
258 analyses.

259
260 Replicating the results of Study 1, combined across infidelity types, significantly more
261 women than men reported that their jealousy would be primarily directed at the rival (71% vs.
262 48%), $\chi^2 = 15.26$, $df = 1$; $N = 280$; $p < .001$, $d = .54$. Comparisons between men and women
263 separately for emotional and sexual infidelity also yielded significant sex-differences for both
264 infidelity types, $\chi^2 = 4.52$, $df = 1$; $N = 148$; $p = .034$, $d = .40$, and $\chi^2 = 11.88$, $df = 1$; $N = 132$;
265 $p = .001$, $d = .69$, respectively. As in Study 1, in both infidelity conditions significantly more
266 women than men selected the rival as the main target of their jealousy (cf. Table 1). Also as
267 predicted, the sex differences were again more pronounced in response to the adaptively
268 primary (71% of the women and 41% of the men chose the rival) than the adaptively
269 secondary infidelity type (71% of the women and 54% of the men chose the rival), $\chi^2 = 12.51$,
270 $df = 1$; $N = 139$; $p < .001$, $d = .69$, vs. $\chi^2 = 4.26$, $df = 1$; $N = 141$; $p = .039$, $d = .40$ (see Table
271 1).

272

273 **6. Study 3**

274 In the previous studies, the participants were asked to imagine a partner's actual infidelity. In
275 contrast, the participants in Study 3 were instructed to imagine a partner's suspected
276 infidelity. In the present context, the major difference between actual and suspected infidelity
277 concerns the rival. In actual infidelity, the jealousy mechanism typically deals with one

278 known actual rival, whereas in suspected infidelity the jealousy mechanism more likely faces
279 suspected potential rivals. Thus, in suspected infidelity the salience of the rival as the
280 intentional object of jealousy is reduced whereas at the same time the salience of the partner is
281 enhanced.

282

283 *6.1. Participants*

284 The participants were 77 female and 86 male students at the University of Bielefeld. Their age
285 ranged from 17 to 41 years ($M = 24.9$; $SD = 3.7$). They were not paid for their voluntary
286 participation.

287

288 *6.2. Material*

289 The participants in the sexual and emotional infidelity condition received the same
290 instructions as in Study 1, with the following exceptions. (a) Depending on the condition, they
291 were instructed to imagine that they suspected that their partner might have fallen in love or
292 might have sexual intercourse with another person. (b) Subsequently, (wo)men were asked to
293 indicate whether their jealousy would be primarily directed towards their partner or towards
294 other (wo)men (i.e., towards potential rivals). The order of the presentation of the two
295 response alternatives was counterbalanced across participants' sex and infidelity type.

296 Additionally, participants indicated in yes-no response formats whether they are currently
297 involved in a committed heterosexual relationship, whether they ever had been cheated on
298 sexually or emotionally, and whether they ever had been sexually or emotionally unfaithful.

299

300 *6.3 Procedure*

301 The procedure was the same as in Study 1.

302

303 **7. Results**

304 The number of participants included in the following analyses varies due to partially missing
305 or invalid data.

306

307 Fifty percent of the men and 64% of the women reported being currently involved in a
308 committed heterosexual relationship. Moreover, 26% of the men and 36% of the women
309 indicated that they had been cheated on sexually. An emotionally unfaithful partner was
310 reported by 54% the men and 53% of the women. Finally, 32% of the men and 25% of the
311 women admitted having been sexually unfaithful, whereas 52% of the men but only 36% of
312 the women conceded having been emotionally unfaithful. Only the latter sex difference was
313 significant, $\chi^2 = 4.01$, $df = 1$; $N = 160$; $p = .045$, $d = .36$; remaining χ^2 s < 3.1 , $ps > .05$.

314

315 Table 1 shows the percentages of men and women reporting that their jealousy would
316 be primarily targeted at potential rivals as a function of the suspected infidelity type (sexual
317 vs. emotional infidelity). Combined across infidelity type, as predicted by the main hypothesis
318 81% of the women but only 53% of the men reported that their jealousy would be primarily
319 targeted at potential rivals $\chi^2 = 13.00$; $df = 1$; $N = 155$; $p < .001$, $d = .72$. This sex difference
320 was obtained for both emotional infidelity, $\chi^2 = 9.78$, $df = 1$; $N = 79$; $p = .002$, $d = .99$, and
321 sexual infidelity, $\chi^2 = 4.52$, $df = 1$; $N = 76$; $p = .034$, $d = .57$. Supporting the second
322 hypothesis, the sex-specific differences were especially pronounced when confronted with the
323 adaptively primary infidelity type: 88% of the women confronted with emotional infidelity
324 selected the rival, whereas only 50% of the men confronted with sexual infidelity chose the
325 rival, $\chi^2 = 12.07$, $df = 1$; $N = 72$; $p = .001$, $d = 1.11$. In contrast, women's and men's choices
326 confronted with the adaptively secondary infidelity type differed only marginally significantly
327 (74% of the women and 56% of the men chose the rival), $\chi^2 = 2.93$, $df = 1$; $N = 83$; $p = .087$, d
328 $= 0.44$ (see Table 1).

329

330 Relationship status and own unfaithfulness moderated the sex-differences reported
331 above. No significant sex-differences were found for participants who were not currently
332 involved in a committed heterosexual relationship and who had neither been sexually nor
333 emotionally unfaithful to their partner, $\chi^2 = 2.26$ and $\chi^2 = 0.24$, respectively, $ps > .10$. In
334 contrast, 50% of the men but 84% of the women currently involved in a committed
335 heterosexual relationship indicated a preferred focus of their jealousy on potential rivals, $\chi^2 =$
336 11.81, $df = 1$, $N = 87$, $p = .001$, $d = .93$. This sex-difference was even more pronounced for
337 participants who had been sexually and/or emotionally unfaithful inasmuch that only 41% of
338 the unfaithful men but 90% of the unfaithful women selected the potential rivals as the
339 preferred targets of their jealousy, $\chi^2 = 18.68$, $df = 1$, $N = 79$, $p < .001$, $d = 1.42$.

340

341 Figure 1 illustrates that relationship status interacted with suspected sexual but not
342 with suspected emotional infidelity. Facing suspected emotional infidelity, significantly more
343 women than men chose the potential rivals as the preferred object of their jealousy,
344 irrespective of their current relationship status, $\chi^2 > 4.50$, $ps < .05$, $ds > .91$. In contrast,
345 suspected sexual infidelity resulted in significant sex differences for participants with a
346 romantic partner, $\chi^2 = 6.66$, $df = 1$, $N = 43$, $p = .01$, $d = .97$, but not for participants without a
347 romantic partner, $\chi^2 < 1$ (see Figure 1).

348

349 Insert Figures 1 and 2 about here

350

351 Participants' own unfaithfulness interacted with both suspected infidelity types. As
352 shown in Figure 2, no sex differences emerged for faithful men and women suspecting sexual
353 or emotional infidelity, $\chi^2s < 1$. In contrast, suspecting sexual infidelity, only 26% of the
354 unfaithful men reported that their jealousy would be primarily directed towards the potential
355 rivals, whereas conversely 83% of the unfaithful women indicated that their jealousy would

356 focus on potential rivals, $\chi^2 = 9.57$, $df = 1$, $N = 31$, $p = .002$, $d = 1.45$ (see Figure 2).
357 Suspecting emotional infidelity, 50% of the unfaithful men but 94% of the unfaithful women
358 chose the potential rivals as the preferential object of their jealousy, $\chi^2 = 10.00$, $df = 1$, $N =$
359 48, $p = .002$, $d = 1.56$.

360

361 Finally, the partner's sexual or emotional (un)faithfulness did not moderate the
362 participants' choices of the object of their jealousy. Rather, the characteristic sex differences
363 were significant for participants with faithful and unfaithful partners, χ^2 s > 6.0 , $ps < .02$, $ds >$
364 0.62.

365

366 **8. Discussion**

367 Three studies tested the main hypothesis that men preferentially direct their jealousy
368 towards the partner whereas women preferentially direct their jealousy towards the rival.
369 Additionally, it was predicted that these sex differences would be especially pronounced with
370 respect to the evolutionary primary infidelity type. The results of the studies consistently
371 confirmed both hypotheses. In Study 1, combined across infidelity types the majority of
372 women reported that their jealousy would be predominantly directed at the rival, whereas the
373 majority of men indicated that their jealousy would mainly focus on the partner. In Study 2, as
374 predicted men rated the extent to which their jealousy would focus on the partner significantly
375 higher than women. However, although the means were in the predicted direction, no sex
376 differences were found for jealousy ratings towards the rival. Within-sex comparisons,
377 however, revealed that women in agreement with the theoretical considerations consistently
378 reported greater jealousy towards the rival than the partner. Moreover, replicating Study 1,
379 significantly more women than men rated that their jealousy would be aimed at the rival than
380 towards the partner for both sexual and emotional infidelity. This pattern of findings suggests
381 that the absence of the significant sex difference in the ratings with respect to the rival is

382 mostly attributable to the men's high ratings for the rival as the focus of their jealousy. Study
383 3 confirmed the predicted sex differences found for actual infidelity in Studies 1 and 2 for
384 suspected infidelity. Women again showed a very pronounced preference for the rival as the
385 target of their jealousy despite the fact that in the case of suspected infidelity the rival was
386 more difficult to target inasmuch that the rival was introduced not as a specific single woman
387 but vaguely as other women as potential rivals.

388

389 Moreover, supporting the second hypothesis, the predicted sex differences were
390 consistently more pronounced for the adaptively primary than the adaptively secondary
391 infidelity type. In fact, the effect sizes of the sex differences were large to very large for the
392 adaptively primary infidelity type but absent to moderate for the adaptively secondary
393 infidelity type. To appreciate the importance of this finding it is helpful to note that the sex
394 differences in the preferred intentional object of jealousy were (a) significant for both sexual
395 and emotional infidelity in each of the three studies and that (b) comparisons between men's
396 and women's decisions for the adaptively primary and secondary infidelity type in each case
397 involve a comparison between sexual and emotional infidelity. Thus, the fact that the sex
398 differences were consistently more pronounced for the adaptively primary infidelity type
399 cannot be attributed to characteristics to the infidelity types per se. Rather, decisions in
400 response to the infidelity type that the jealousy mechanism evolved to solve accentuate the
401 sex differences as a result of the functional specialization of the respective jealousy
402 mechanism.

403

404 The results of Study 3 also emphasize the importance of considering relevant
405 contextual factors as potential moderators of the jealousy mechanism (e.g., Buss et al., 1992;
406 Schützwohl & Koch, 2004). The sex differences were found only for participants currently
407 involved in a committed heterosexual relationship. The own unfaithfulness proved to be an

408 even more important moderator of the participants' decisions. Faithful participants showed no
409 sex-specific preferences of the intentional objects of their jealousy neither for suspected
410 sexual nor suspected emotional infidelity. In complete contrast, unfaithful participants'
411 decisions confirmed both hypotheses revealing a strong sex difference in the preferred target
412 of jealousy which was especially pronounced for the adaptively primary infidelity type:
413 confronted with suspected sexual infidelity, 74% of the men facing sexual infidelity selected
414 the partner as the intentional object of their jealousy, whereas 94% of the women confronted
415 with suspected emotional infidelity chose the potential rival women. Interestingly, the
416 partner's unfaithfulness did not moderate the participants' choices. Rather, the sex differences
417 in the intentional object of jealousy emerged for participants with faithful and unfaithful
418 partners. This dissociation between the effects of one's own and one's partner's
419 (un)faithfulness suggests that the evolved jealousy mechanism relies on input about the
420 emotional, cognitive and behavioral aspects of the act of infidelity (Barrett, Frederick,
421 Haselton, & Kurzban, 2006). Furthermore, it appears that this input might be more vivid,
422 elaborate and informative and thus more effective if derived from the active performance of
423 infidelity than the more passive imagination or rumination over a partner's infidelity.

424

425 The present studies are limited inasmuch that they exclusively rely on self-reports of
426 the preferred target of romantic jealousy. Nevertheless, sex differences in the intentional
427 objects of jealousy must be considered as an important evidence of the functional
428 specialization of men's and women's evolved jealousy mechanism (Barrett, 2005; Pinker,
429 1997; Tooby & Cosmides, 1992). This is because it provides the basis for the deduction of
430 hypotheses relating to the sex differences in the cognitions and the behavior of jealous men
431 and women in dealing with a mate's suspected or actual infidelity. Some albeit indirect
432 support for this argument stems from mate guarding and retention tactics. This support should
433 be considered indirect because it does not derive from experiments designed to explicitly test

434 the hypothesis that men's mate guarding and retention strategies are primarily targeted at the
435 partner, whereas women's strategies are primarily targeted at the rival. Men's strategies first.
436 Daly and Wilson (1993) describe a wide range of behavior linked to men's jealousy ranging
437 from vigilance to violence and these behaviors appear to be predominantly geared to the
438 partner. Men more than women use physical violence to punish or prevent a mate's sexual
439 infidelity and in extreme cases this violence ends deadly. Less severe manifestations of men's
440 sexual proprietariness include veiling, chaperoning, purdah, incarceration, and chastity belts.
441 As Daly and Wilson (1993) note "the significance of these practices is evident when one
442 notes that it is only women of reproductive age who are confined" (p. 283). Additionally,
443 Buss and Shackelford (1997) assessed mate retention tactics of married couples and found
444 that men more than women used partner-directed tactics such as resource displays (e.g., he
445 spends a lot of money on her) and submission and debasement (e.g., he gives in to her every
446 wish). In contrast, women more than men were found to use rival-directed verbal possession
447 signals (e.g., she mentions to other women that he is taken). Moreover, women enhanced their
448 appearance allegedly for their partner. However, appearance enhancement might as well
449 allude to intrasexual competition in which women first and foremost try to favorably compare
450 with rival women.

451
452 The present support for the claim of sex differences in the preferred intentional object
453 of romantic jealousy might contribute to the decision whether romantic jealousy should be
454 treated as a discrete psychological mechanism or be lumped together with other types of
455 jealousy, as has been recently proposed by DeSteno, Valdesolo, and Bartlett (2006). These
456 authors argue for a general jealousy mechanism that underlies various manifestations of
457 jealousy like sibling rivalry, friendship jealousy and romantic jealousy. However, a
458 comparison between the results of their study (DeSteno et al., 2006; Study 2) with those of the
459 present study raise doubt as to the adequacy of this conceptualization. Specifically, they found

460 that a very mild level of experimentally induced friendship jealousy (conceptualized as a
461 compound of jealous, angry, betrayed and hurt feelings) resulted in hostility that in both men
462 and women was equally aimed at the partner and the rival. Of course, this finding is at
463 variance with the present evidence suggesting sex-specific differences in the intentional object
464 of romantic jealousy. Thus, the frequently indiscriminate use of the jealousy concept to
465 various social constellations sharing a triangle which constitutes the source of a threat to a
466 valued relationship appears to be premature at least.

467

468 Finally, the results of the present studies might provide the starting point for attempts
469 to segregate the various emotions presumably co-occurring during episodes of a mate's
470 infidelity like anger, envy, grief, apprehension, and self-pity etc. The identification of the
471 intentional object of these emotions will alone not suffice to shoulder this task, but together
472 with a closer examination of the elicitors and the cognitive, physiological and behavioral
473 concomitants of the various emotions this appears to be a promising and worthwhile
474 endeavor.

475

476 **9. References**

- 477 Barrett, H. C. (2005). Enzymatic computation and cognitive modularity. *Mind and Language*, 20,
478 259-287.
- 479 Barrett, H. C., Frederick, D. A., Haselton, M. G. & Kurzban, R. (2006). Can manipulations of
480 cognitive load be used to test evolutionary hypotheses? *Journal of Personality and Social*
481 *Psychology*, 91, 513-518.
- 482 Brentano, F. (1973). *Psychologie vom empirischen Standpunkt. Band 1 [Psychology from an*
483 *empirical standpoint. Vol. 1]*. Hamburg: Meiner. (Original work published 1874)
- 484 Buss, D. M. (2000). *The dangerous passion: Why jealousy is as necessary as love and sex*.
485 New York: The Free Press.
- 486 Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy:
487 Evolution, physiology, and psychology. *Psychological Science*, 3, 251-255.
- 488 Buss, D. M. & Shackelford, T. K. (1997). From vigilance to violence: Mate retention tactics
489 in married couples. *Journal of Personality and Social Psychology*, 72, 346-361.
- 490 Daly, M. & Wilson, M. (1993). An evolutionary psychological perspective on male sexual
491 proprietariness and violence against wives. *Violence and Victims*, 8, 271-294.
- 492 Daly, M., Wilson, M., & Weghorst, S. J. (1982). Male sexual jealousy. *Ethology and*
493 *Sociobiology*, 3, 11-27.
- 494 DeSteno, D., Valdesolo, P., & Bartlett, M. Y. (2006). Jealousy and the threatened self:
495 Getting to the heart of the green-eyed monster. *Journal of Personality and Social*
496 *Psychology*, 91, 626-641.
- 497 Freud, S. (1924). Certain neurotic mechanisms in jealousy, paranoia, and homosexuality. In S.
498 Freud, *Collected papers* (Vol. 2, J. Rivière, Ed. and Trans.). London: Hogarth.
- 499 Green, O. H. (1992). *The emotions: A philosophical theory*. Dordrecht: Kluwer.
- 500 Hasselblad, V. & Hedges, L. V. (1995). Meta-analysis of screening and diagnostic tests.
501 *Psychological Bulletin*, 117, 167-178.

- 502 Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- 503 Hupka, R. B. (1984). Jealousy: Compound emotion or label for a particular situation?
504 *Motivation and Emotion*, 8, 141-155.
- 505 Meinong, A. (1894). *Psychologisch-ethische Untersuchungen zur Werttheorie*
506 *(Psychological-ethical studies of value theory)*. Graz: Leuschner & Lubensky.
- 507 Ortony, A., Clore, G. L., & Collins, A. (1988). *The cognitive structure of emotions*.
508 Cambridge, England: Cambridge University Press.
- 509 Paul, L., Foss, M. A., & Galloway, J. (1993). Sexual jealousy in young women and men:
510 Aggressive responsiveness to partner and rival. *Aggressive Behavior*, 19, 401-420.
- 511 Pines, A. M. & Friedman, A. (1998). Gender differences in romantic jealousy. *The Journal of*
512 *Social Psychology*, 138, 54-71.
- 513 Pinker, S. (1997). *How the mind works*. New York: Norton.
- 514 Schützwohl, A. (2004). Which infidelity type makes you more jealous? Decision strategies in
515 a forced-choice between sexual and emotional infidelity. *Evolutionary Psychology*, 2,
516 121-128.
- 517 Schützwohl, A. (2005). Sex differences in jealousy: The processing of cues to infidelity.
518 *Evolution and Human Behavior*, 26, 288-299.
- 519 Schützwohl, A. (2006). Sex differences in jealousy: Information search and cognitive
520 preoccupation. *Personality and Individual Differences*, 40, 285-292.
- 521 Schützwohl, A. (in press). The disengagement of attentive resources from task-irrelevant cues
522 to sexual and emotional infidelity. *Personality and Individual Differences*.
- 523 Schützwohl, A. & Koch, S. (2004). Sex differences in jealousy: The recall of cues to sexual
524 and emotional infidelity in personally more and less threatening context conditions.
525 *Evolution and Human Behavior*, 25, 249-257.
- 526 Searle, J. (1983). *Intentionality: An essay in the philosophy of mind*. Cambridge: Cambridge
527 University Press.

- 528 Siemer, M. (2005). Mood congruent cognitions constitute mood experience. *Emotion*, 5, 296-
529 308.
- 530 Solomon, R. C. (2000). The philosophy of emotions. In M. Lewis & J. M. Haviland-Jones
531 (Eds.), *Handbook of emotions* (2nd Edition) (pp. 3 – 15). New York: Guilford Press.
- 532 Spinoza, B. (1948). *Ethics*. London: Dent. (Original work published in 1677).
- 533 Symons, D. (1979). *The evolution of human sexuality*. New York: Oxford University Press.
- 534 Tooby, J. & Cosmides, L. (1992). The psychological foundations of culture. In J. H. Barkow,
535 L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the*
536 *generation of culture* (pp. 19-136). New York: Oxford University Press.
- 537 Trivers, R. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual*
538 *selection and the descent of men, 1871 – 1971* (pp. 136-179). Chicago: Aldine.
- 539 White, G. L. & Mullen, P. E. (1989). *Jealousy: theory, research, and clinical strategies*. New
540 York: Guilford Press.
- 541

542 *Author notes*

543 This research has been partially supported by a grant from the Deutsche Forschungsgemeinschaft
544 (DFG Schu 1559/1-3).

545

546 Rainer Reisenzein and Ritasha Sookdew made very helpful comments on an earlier draft of the
547 manuscript.

548

549 Correspondence concerning this article should be addressed to Achim Schützwohl,

550 Department of Psychology, Brunel University West London, Uxbridge, Middlesex, UB8 3PH,

551 United Kingdom. Email: achim.schuetzwohl@brunel.ac.uk