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### Article

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1 **A comparison of heterosexual and homosexual mating preferences**  
2 **in personal advertisements**

3

4 Running Headline: Heterosexual and non-heterosexual mate preferences

5

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22

23

24

25 *Abstract*

26

27 Human heterosexual mating preferences have been shown to conform to predictions drawn from  
28 evolutionary theory, with men and women adopting broadly distinct strategies. Attempts to  
29 reconcile sexual selection theory with homosexual behaviour have been less consistent, however,  
30 and have largely focussed on addressing two alternative perspectives: (i) that gay men and lesbians  
31 display phenotypic traits in common with opposite sex heterosexual individuals or (ii) that  
32 homosexual individuals display sex-typical, or exaggerated sex-typical phenotypes. Testing these  
33 hypotheses is complicated by sampling issues involved in the study of human sexual orientation,  
34 since obtaining standardised and comparable samples of heterosexual and non-heterosexual mating  
35 preferences is a prerequisite to analysis. Here we present a comparison of homosexual and  
36 heterosexual mating strategies in men and women using a sample of 1733 personal ('lonely hearts')  
37 adverts gathered from a single source. We used principal components analysis in order to expose  
38 underlying structure of the advertisements, and identify three components involving relative  
39 emphasis placed on resources, physical attractiveness and personality when offering or seeking  
40 mate characteristics. While homosexual individuals are shown to resemble their own-sex  
41 heterosexual counterparts in terms of emphasis placed on partner physical attractiveness relative to  
42 partner personality, no clear pattern emerges in other aspects of advertisement strategy.  
43 Nevertheless, there we find no evidence in support of the hypothesis that homosexual men and  
44 women are intrinsically opposite-sex typical in terms of mate preferences.

45

46 *1. Introduction*

47

48 Predictions concerning mate preferences in humans have often been drawn from  
49 evolutionary theory under the reasonable assumption that mating behaviour, being inextricably  
50 linked to reproductive success, will have undergone selection. Human mating strategy has been

51 shown to conform to predictions drawn from evolutionary theory, with men and women adopting  
52 broadly distinct strategies as displayed by their interest in casual sex and physical attractiveness  
53 (Buss 1991; Gangestad & Simpson 2000). Theories seeking to reconcile the persistence of same-sex  
54 sexual behaviour in humans have, in general, emphasised the possibility that there is an aspect of  
55 homosexuality (or bisexuality) that gives an advantage to direct or indirect fitness (Camperio-Ciani et  
56 al. 2004; Kirkpatrick 2000; McKnight 1997; Kirby 2003; Dewar 2003). Empirical testing of these ideas  
57 has, however, failed to provide unequivocal support for any particular hypothesis regarding the  
58 evolution of homosexual behaviour in humans (Rieger & Savin-Williams 2012; Kirkpatrick 2000).

59

60

61 Evolutionary studies of human mating preferences have identified several dimensions on  
62 which the preferences of heterosexual men and women differ (Buss 1989; Shackelford et al. 2005;  
63 Buss 1995). In a variety of cultures, heterosexual men have been shown to place a greater emphasis  
64 on physical attractiveness than heterosexual women, who tend to place greater emphasis on status  
65 and personality in a potential partner (Buss, 1989; Buss & Angleitner, 1989; Buss & Barnes, 1986;  
66 Koyama et al., 2004; Shackelford, Schmitt, & Buss, 2005). Heterosexual men have also been shown  
67 to prefer partners who are younger than them, and that the age difference between 'self' and ideal  
68 partner increases as a heterosexual man ages (Kenrick & Keefe 2011). In contrast, heterosexual  
69 women have been shown to prefer slightly older partners, while the relative difference between  
70 own and partner age remains more stable as age increases (Kenrick & Keefe 2011; Kenrick et al.  
71 1995). Heterosexual men also have a tendency to report more interest in and more experience of  
72 casual sex than heterosexual women, who report fewer numbers of sexual partners (Gangestad &  
73 Simpson 2000; Schmitt 2005), and heterosexual men have been demonstrated to seek a greater  
74 variety of short-term sexual partners (Schmitt 2003).

75

76

77            Attempts to reconcile sexual selection theory with homosexual behaviour have taken one of  
78 two broad theoretical positions; (i) that homosexual men and women display phenotypic traits in  
79 common with opposite sex heterosexual individuals, that they are opposite-sex typical; or (ii) that  
80 homosexual individuals display sex-typical, or exaggerated sex-typical phenotypes. The former  
81 position, based on observations that homosexual men and women tend to be more gender non-  
82 conforming than heterosexuals (Lippa 2008; Lippa 2002; Rieger et al. 2008; Bailey et al. 1994), is  
83 associated with an idea that the brains of homosexual women and men have been respectively  
84 masculinised and feminised (or, more accurately, not masculinised) as a feature of their individual  
85 development (Rahman & Wilson 2003; Rahman 2005; Lalumière et al. 2000; Blanchard et al. 2006).  
86 Studies investigating this hypothesis have reported that homosexual men and women are more  
87 similar to heterosexual opposite sex than own sex counterparts in a variety of domains; homosexual  
88 men have more feminine digit length ratios (Manning et al. 2007), homosexual adults report  
89 patterns typical of the opposite sex in childhood play (Rieger et al. 2008; Bailey & Zucker 1995), and  
90 homosexual individuals are more similar to opposite sex heterosexuals than to same sex  
91 heterosexuals in both preferences for body odours (Martins et al. 2005) and physiological response  
92 to pheromones (Savic et al. 2005).

93

94

95            The alternative hypothesis, that homosexual individuals are sex-typical or sex-exaggerated, implies  
96 that the suite of behaviours that make up a mating strategy are distinct from sexual preference. This  
97 position allows for the evolution of broad, sex-typical mating strategies as the result of regular  
98 differences in selection pressures experienced by the two sexes (Buss 1995) as they engage in sexual  
99 reproduction (which is by definition 'heterosexual'), while sexual attraction to a specific sex is the  
100 result of other, potentially biological, mechanisms which may or may not serve specific adaptive  
101 functions. In support, homosexual men and women have been shown to have similar partner age  
102 preferences as their heterosexual counterparts (Gobrogge et al. 2007; Kenrick et al. 1995). Both

103 Glassenberg et al. (2010) and Welling et al. (2013) report similarities in the face preferences of  
104 homo- and heterosexual identified men and women. Behaviourally, gay men have also been  
105 reported to be equally interested in casual sex as heterosexual men, but to have more casual sex  
106 partners (Bailey et al. 1994). Robinson & Manning (2000) reported that gay men have more  
107 masculine digit length ratios than heterosexual men (in stark contrast to (Manning et al. 2007)),  
108 while Bogaert & Hershberger (1999) concluded that homosexual men may be hypermasculine in  
109 terms of penis circumference and length. Nevertheless, the support for either hypothesis is far from  
110 unequivocal.

111

112

113 One possible explanation for the array of competing evidence for the two theoretical positions may  
114 stem from the methodological difficulties in obtaining a representative sample of non-heterosexual  
115 individuals. Random sampling often does not result in a large enough sample of homo- and bisexual  
116 individuals for meaningful comparison with a heterosexual group, while targeted sampling requires  
117 individuals to self-identify in order to be included. This may bias a sample towards a group who have  
118 'come out' and who may not be representative of the homosexual population as a whole (Sandfort  
119 1997; Sergeant et al. 2006). Furthermore, individuals engaged in lab-based experiments may not  
120 report their sexual orientation honestly owing to anxiety over openly declaring a homosexual or  
121 bisexual orientation (Gobrogge et al. 2007), and so be erroneously included in a heterosexual  
122 sample. The possibility that these individuals may subsequently report mating preferences that  
123 conform to cultural gender-role stereotypes (Alexander & Fisher 2003) makes this an important  
124 methodological issue, since this may exaggerate differences between homo- and heterosexual  
125 subsamples. Attempts to recruit homosexual individuals from 'naturalistic' settings such as gay pride  
126 events or LGBTQ groups may be problematic not only because it is similarly unknown how  
127 representative such participants would be of a wider homosexual population (Sandfort 1997), but  
128 also because comparable heterosexual sources do not exist. Since experimental groups should differ

129 from each other on as few dimensions as possible, this form of sampling makes drawing meaningful  
130 comparisons difficult. A further problem in the quantitative study of homosexual behaviour is that  
131 decisions on what aspect of sexual orientation to measure (e.g. identity (Lippa 2002), sexual arousal,  
132 romantic attraction (Savin-Williams & Ream 2007), frequency of fantasy (Wichstrøm & Hegna 2003)  
133 or sexual experience (Fay et al. 1989)) and by which of a number of available metrics (e.g. Kinsey  
134 scales (Kinsey et al. 1948), Shively scales (Shively & De Cecco 1977), the Klein grid (Klein et al. 1985)),  
135 can have non-trivial effects on results (Savin-Williams 2009).

136

137

138 Personal advertisements (personal ads) in newspapers address a number of the problems inherent  
139 in collecting standardised and comparable samples of heterosexual and non-heterosexual mating  
140 preferences. First, they are a source of naturalistic data in that they have been written by real-world  
141 individuals for a specific, real-world purpose (Gobrogge et al. 2007). Second, individuals have self-  
142 identified voluntarily rather than as the result of a survey question or interview. Third, drawing a  
143 sample of homosexual and heterosexual personal ads from the same publication allows for control  
144 of a number of possible confounding variables, given that newspaper readerships tend to conform to  
145 specific demographic features, including socioeconomic status and political alignment (Schoenbach  
146 et al. 1999; Webber 1993). Homosexual readers of any given newspaper are likely to systematically  
147 differ from a heterosexual reader only in terms of their sexual orientation, thereby giving a high level  
148 of cross-sample validity. Fourth, given that personal ads are typically divided in to four categories  
149 reflective of sexual orientation (Men Seeking Men, Men Seeking Women, Women Seeking Women  
150 and Women Seeking Men) their use avoids the complex issue of classifying individuals as belonging  
151 to any particular sexual orientation using self-reported measures (Savin-Williams 2009); they  
152 represent descriptions of homosexual or heterosexual mating strategies rather than homosexual or  
153 heterosexual individuals.

154

155

156 Personal ads are useful for investigating mating preferences as they represent genuine 'real world'  
157 statements of likes and dislikes, designed by an individual with the specific aim of attracting  
158 potential mates (Waynforth and Dunbar, 1995). Well validated methods exist for the analysis of  
159 personal advertisements (Waynforth and Dunbar, 1995, Thiessen et al. 1993) and they have been  
160 deployed in a number of studies on the evolution of, heterosexual (Pawlowski and Dunbar, 1999,  
161 Wiederman 1993; Greenlees & McGrew 1994; Waynforth & Dunbar 1995; Bereczkei & Csanaky  
162 1996; Bereczkei et al. 1997) and homosexual (Bailey et al. 1995;1997, Gobrogge et al. 2007, Hawkins,  
163 1990 & Kenrick and Keefe, 1995, Russock 2011) mate preferences.

164

165

166 Here we examine the alternative hypotheses that homosexual individuals should be opposite-sex or  
167 same-sex typical in terms of their mate preferences drawing on a large sample of personal ads from  
168 a single publication in order control for possible confounding variables and avoid sources of bias.  
169 Through deploying a Principal Components Analysis to expose the underlying structure of the  
170 personal ads we focus on the relative importance placed on evolutionarily salient traits - resources,  
171 commitment, personality (emphasised as important partner traits by heterosexual women) and  
172 physical attractiveness (emphasised by heterosexual men) to rigorously contrast the mating  
173 preferences of heterosexual and homosexual males and females. The use of PCA as an analytical  
174 technique in this context is novel, and may reveal more about the underlying structure of the  
175 adverts than the traditional techniques used in other, similar studies.

176

177

178 2. *Methods*

179

180



181                   2.1. *Data collection*

182

183

184 Data were gathered from the ‘Soulmates’ section of multiple 1998-1999 issues of the Guide, a  
185 weekly entertainments supplement to ‘the Guardian’, one of the United Kingdom’s broadsheet  
186 newspapers. The readership of the Guardian is largely middle class, politically left wing and of  
187 moderate to high socio-economic status with an equal split between male and female readers  
188 (Guardian 2010). ‘Soulmates’ published ‘lonely-hearts’ advertisements that allowed individuals to  
189 produce brief personal statements describing themselves and the partner they are looking for.  
190 Advertisements were divided in to four categories; “Men seeking Men” (MSM), “Men Seeking  
191 Women” (MSW), “Women Seeking Men”(WSM) and “Women Seeking Women”(WSW). Since the  
192 “Men Seeking Women” and “Women Seeking Men” sections are inevitably longer than the others,  
193 only every third advert was included in analysis, whereas every advert in the ‘Men Seeking Men’ and  
194 ‘Women Seeking Women’ section was recorded.

195

196                   2.2. *Scoring personal ads*

197

198 Personal adverts were initially sorted to remove any duplications (e.g. repeated advertisements in  
199 successive issues). Adverts were then coded according to Buss (1989) and Waynforth & Dunbar  
200 (1995) with each advert allocated 8 scores representing the frequency with which they referenced  
201 four key categories in connection with the advertiser (self descriptors; traits offered) and/or the  
202 partner sought (ideal other descriptors; traits sought). These categories relate to various standard  
203 aspects of attractiveness and attraction and were Physical Attractiveness (e.g. “good looking”,  
204 “attractive”, “Great body”, “handsome”, “svelte”, “youthful”, “rugged” etc), Resources (e.g.  
205 “professional”, “solvent”, “graduate”, “homeowner” etc), Personality (e.g. “kind”, “happy”, “funny” ,  
206 “witty”, “creative”, “witty” etc); and Commitment (e.g. “monogamous”, “shared life”, “lasting 1-2-

207 1", "soul mate"). This method of scoring has been validated by word content analysis (Thiessen,  
208 1993). From a total sample of 2145, advertisements which did not contain both 'offering' and  
209 'seeking' elements (n = 412) were excluded. The final sample therefore contained 1733 individuals,  
210 672 of which were women (Table 1).

211

212 The number of traits in each category is not a direct measure of a mating strategy but the emphasis  
213 placed on different categories may be reflective of an underlying tactical structure. In order to  
214 explore this, and to control for the variation between categories in terms of total traits offered and  
215 sought, specific trait totals (e.g. total personality traits sought) were expressed as proportions of  
216 total traits offered or sought, as appropriate, by dividing them by the respective total. Descriptive  
217 statistics for these new variables are given in table 2.

218

219 Principal Components Analysis is a statistical technique for identifying structural patterns in a set of  
220 data. This technique reduces the number of variables to be analysed to represent the underlying  
221 structure of the advertisements as relates to the key trait categories. The components were used as  
222 dependent variables in the subsequent analyses in order to test the alternative hypotheses under  
223 investigation in this study.

224

### 225 3. Results

226

#### 227 3.1. Principal Components Analysis

228

229

230 Due to the low proportion of total commitment-relevant traits (Table 2), the two commitment  
231 variables were excluded from subsequent analysis. The remaining 6 variables (proportions of  
232 attractiveness, personality and resources, sought and offered) were entered into a Principal

233 Components Analysis with Varimax rotation for reduction. Three components with eigenvalues >1  
234 were extracted accounting for 84.15% of the variance. Inspection of the factor loadings (see Table 3)  
235 showed that component 1 loaded strongly and positively on Resources Offered and Resources  
236 Sought, representing a general interest in resources. Accordingly we name component 1 'Resources'.  
237 Component 2 displayed a strong, positive loading on attractiveness sought and a strong, negative  
238 loading on personality sought, representing an apparent trade-off between these two aspects (that  
239 is that individuals who place emphasis on attractiveness in their sought-for partner tend not to  
240 emphasise personality and vice versa). Accordingly we name this factor "Seeking: attractiveness vs  
241 personality". Component 3 represented the reciprocal of component 2, loading positively on  
242 Physical Attractiveness offered and negatively on Personality offered, and was thus named  
243 "Offering: Physical Attractiveness vs Personality". Individuals scoring positively on these latter two  
244 components would place greater emphasis on physical attractiveness than personality traits, while  
245 those scoring negatively would do the converse.

246

247 Factors were converted to variables using Anderson-Rubin extraction, which produces normally  
248 distributed, continuous variables (i.e. they have a whole-sample mean of 0.00 and a standard  
249 deviation of 1.00, Field, 2009). These three new variables represent structural components of the  
250 personal advertisements which were used as dependent variables to assess differences in overall  
251 strategy between men and women seeking partners of different sexes.

252

### 253 *3.2. Multivariate analysis*

254

255

256 Descriptive statistics for the three components in each of the four categories (MSM, MSW, WSM,  
257 WSW) are given in Table 4. The three components were entered as dependent variables into a 2x2  
258 MANOVA with advertiser sex and sex-sought as independent variables. This revealed significant

259 main effects of advertiser sex  $F_{3,1727} = 9.47$ ,  $p < 0.001$ , and sex sought,  $F_{3,1727} = 4.20$ ,  $p < 0.01$  on the  
260 underlying structure of the advertisements. There was also a significant interaction between  
261 advertiser sex and sex-sought,  $F_{3,1727} = 5.93$ ,  $p < 0.01$ . These effects were followed up with univariate  
262 tests, below.

263

264

### 265 *3.2.1. Resources.*

266

267

268 Neither sex of advertiser nor sex sought produced a significant main effect ( $p > 0.05$  in both cases),  
269 but a significant interaction between sex of advertiser and sex sought was detected,  $F_{1,1729} = 6.93$ ,  
270  $p < 0.01$  (see Figure 1a.). Mean scores on this variable for MSW, WSM and MSM are all close to zero,  
271 suggesting a general tendency not to emphasise resources for these groups, whereas the positive  
272 mean score for WSW suggests a strong tendency to advertise and seek resources. This does not  
273 provide unequivocal support for either hypothesis since MSM are similar to their heterosexual same-  
274 sex *and* opposite-sex counterparts. WSW mention resource terms significantly more than WSM, and  
275 so are not sex-typical in this regard, but also differ significantly from MSW, and so are not opposite  
276 sex-typical either.

277

278

### 279 *3.2.2. Seeking: Physical Attractiveness vs Personality*

280

281

282 Analysis revealed a highly significant main effect of sex of advertiser for this component,  $F_{1,1729} =$   
283  $21.66$ ,  $p < 0.001$ , but no main effect of sex sought ( $p > 0.05$ ), such that men scored more highly on this  
284 variable than women, irrespective of sex of target partner (see fig 1b), suggesting that

285 advertisements written by men contain a higher proportion of traits related to appearance than  
286 personality when describing an ideal partner while advertisements written by women display the  
287 opposite condition. There was no interaction between the variables ( $p > 0.05$ ). These results support  
288 the hypothesis that homosexual men and women are sex-typical in their mating strategy, at least in  
289 terms of mate preferences.

290

291

### 292 *3.2.3. Offering: Appearance vs Personality*

293

294

295 Analysis revealed a highly significant main effect of sex sought,  $F_{1,1729} = 12.24$ ,  $p < 0.001$ , and a highly  
296 significant interaction effect between the two independent variables,  $F_{1,1729} = 10.48$ ,  $p < 0.01$ , on the  
297 third component. There was no significant main effect of sex of advertiser ( $p > 0.05$ ). Again, support  
298 for the two hypotheses is variable; WSW and MSW both emphasise personality over appearance, in  
299 support of hypothesis that individuals attracted to their own sex should be opposite-sex typical,  
300 while MSM and WSM differ from each other significantly, with MSM placing a greater emphasis on  
301 their appearance when describing themselves (see Fig 1c). In fact, MSM place a greater emphasis on  
302 their appearance in this context than any other group, all of which emphasise their personality.

303

304

## 305 *4. Discussion*

306

307

308 Personal advertisements provide standardised and comparable samples of heterosexual and non-  
309 heterosexual mating preferences allowing the assessment of the alternative hypotheses that  
310 homosexual individuals should be opposite-sex or same-sex typical in terms of their mate

311 preferences. The current study identified three dimensions underlying the content of personal  
312 adverts; a general interest in resources and a trade-off between personality and appearance-related  
313 traits in both self- and ideal-partner descriptions. In the latter we identify a sex difference in line  
314 with other research in to human mating preferences (e.g. Buss 1989) that men tend to emphasise  
315 appearance over personality in a potential mate, whereas women do the converse. This supports a  
316 general hypothesis that the mating strategies of males and females have evolved in response to a  
317 differing set of selective pressures, stemming from differences in obligatory parental investment  
318 with men are more attentive to potential cues of fertility and fecundity in partners than women,  
319 while women attend more to personality-traits (particularly dominance, creativity and prosociality)  
320 in potential mates than men (Buss & Angleitner 1989; Buss 1995; Shackelford et al. 2005; Buss &  
321 Barnes 1986; Hill et al., 2005). That we failed to detect any difference in this trait based on preferred  
322 sex of mate may suggest that the selection pressures responsible for strategic differences between  
323 men and women in the mating arena have been (and may still be) sufficiently powerful that the  
324 resulting adaptation is common to homo- and heterosexual individuals despite the fact that it may  
325 be fitness-enhancing only in the latter. The results here suggest that in terms of a trade-off between  
326 physical attractiveness and personality as preferred partner-traits, homosexual individuals of either  
327 sex are behaving in the same way as their heterosexual counterparts.

328

329 Women seeking women were shown to be unique in their advertisement of their own and their ideal  
330 partner's resources. This result contrasts with that of Russock (2011) where women seeking men  
331 differed from other groups in seeking resources significantly more often. According to the principles  
332 of parental investment theory, females in a species where males invest in offspring should be  
333 expected to emphasise resource control in mates, whereas males should be less interested in  
334 resource control in mates (Gangestad & Simpson 2000; Shackelford et al. 2005). The tendency for  
335 neither group of men to focus on resources is, therefore, in line with evolutionary theory, as is the  
336 tendency for women seeking women to emphasise it. The lack of emphasis placed on resources in

337 the women seeking men is therefore unexpected. It is possible that the relative affluence of the  
338 Guardian's readership has caused women to place low emphasis on male resources given that they  
339 are likely to be financially independent (Moore & Cassidy 2007), although the fact that women  
340 seeking women place emphasis on partner's resources is not consistent with this explanation. As an  
341 alternative, it is possible that men do not respond positively to overt mentioning or seeking of  
342 resources (their own adverts are comparatively free of this component), and that women seeking  
343 men tend to avoid doing so as a consequence. Given the absence of men from their potential array  
344 of partners, women seeking women may be freed to signal an interest in resources without negative  
345 consequence: Women seeking women may have been released from the behavioural constraints  
346 imposed by men. This interpretation would imply that, in terms of evolved preferences,  
347 homosexual individuals are sex-typical in their responses but that heterosexual women have  
348 modified their responses in light of the preferences of men. Further work is needed to investigate  
349 this possibility.

350

351 For the one component relating entirely to self-description, the majority of groups emphasised their  
352 own personality at the cost of their own physical attractiveness. The only group for which this is not  
353 true are men seeking men, who place emphasis on the latter trait at the expense of the former.

354 While this feature is in line with evidence that suggests the social arena of gay men is preoccupied  
355 with physical attractiveness ( Ha et al. 2012), the fact that this group differs from the others is  
356 noteworthy. Evolutionary work on human mating strategy has tended to focus on what individuals  
357 want in a partner rather than what they should signal about themselves, although it seems logical to  
358 suggest that a successful strategy would be one which signals features preferred by the target sex.

359 Advertisements of all but one group follow this pattern: The tendency for all individuals seeking  
360 women to emphasise their own personality may be explained by the tendency of women to  
361 emphasise this trait as desirable in a partner. Similarly, the tendency for men seeking men to  
362 advertise their own attractiveness may be due to the fact that men, on the whole, value this trait in

363 a partner (Russock 2011). It is not clear why women seeking men are the only group who do not  
364 match the preferences of their preferred sex when describing themselves, although it is important to  
365 remember that the results here reflect the trade-off between offering physical attractiveness vs  
366 personality. Only men seeking men offer a greater proportion of traits relating to physical  
367 attractiveness than women seeking men, a finding in line with previous analyses (Russock 2011).  
368 The trade-offs revealed through our PCA analysis suggest that traditional analyses based on  
369 proportions may obscure more complex interactions between the traits offered and sought in word-  
370 limited personal advertisements.

371

372

373 The study also underlines the importance of careful and appropriate sampling when undertaking  
374 studies of this kind, in order to avoid the inherent methodological problems that occur when one  
375 comparator population cannot be randomly sampled. Lonely hearts advertisements offer a valuable  
376 resource for future research, although our results differ from those of Russock (2011) in a number of  
377 facets, despite both drawing on large samples of adverts. However, Russock's (2011) sample was  
378 derived from nine print newspapers and 26 online sources; this variability in the readership, which  
379 include mainstream media and newspapers catering specifically to a gay clientele, may have  
380 introduced unintended biases to the sample. Drawing both heterosexual and non-heterosexual  
381 samples from the same source reduces to some extent the methodological issues associated with  
382 obtaining representative samples of non-heterosexuals for studies of this kind, most notably the  
383 random sampling of homo- and bisexual populations (Sandfort 1997; Sergeant et al. 2006). That said,  
384 the homogeneity of the Guardian's readership in terms of education, political ideology and  
385 socioeconomic status may call in to question the generalizability of results obtained here. Future  
386 researchers will need to decide which weakness is most appropriate to tolerate in the context of  
387 their study.



388

389 In terms of the specific hypotheses, the tendency for all men and all women to behave in ways  
390 predicted by evolutionary theory in their respective tendencies to emphasise physical attractiveness  
391 over personality and vice versa gives some support for the same-sex typical hypothesis for  
392 homosexual behaviour. Men and women show identical mate preferences regardless of preferred  
393 partner sex. In contrast to Russock (2011), there is no unequivocal support for the opposite-sex  
394 typical hypothesis, since even when homosexual individuals cluster with their opposite sex,  
395 heterosexual counterparts (which men seeking men do on the first component, and women seeking  
396 women do on the third), they also cluster with same sex heterosexuals.

397

398

399 The results from the current study suggest that the mating strategy that informs the writing of  
400 personal ads is multifaceted, and that an observed sex difference in one facet, mate preferences, a)  
401 conforms to predictions drawn from sexual selection theory and b) is identical in men and women  
402 regardless of sex sought; that is, that homosexual mating strategy is sex-typical in this regard. Other  
403 facets of mating strategy, revealed by the novel use of PCA in this context, are more complex to  
404 interpret and provide limited support for either hypothesis. We suggest these may be reflective of  
405 influences of social learning on mating strategy, which is known to be flexible in humans (DeBruine  
406 et al. 2010; DeBruine et al. 2010; Brown et al. 2009). Crucially, there is no evidence here in support  
407 of the hypothesis that homosexual men and women are intrinsically opposite-sex typical in terms of  
408 mate preferences.

409

410

411

412

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- 528

529 Table 1. Frequencies for the four categories of advert in the final sample.

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	<b>Seeking Men</b>	<b>Seeking Women</b>	<b>Total</b>
<b>Men</b>	649	412	1061
<b>Women</b>	347	325	672
<b>Total</b>	996	737	1733

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535 Table 2. Mean proportion of total traits offered (top half) and total traits sought (bottom half)  
 536 represented by each trait category for each advert category (men seeking men (MSM), men seeking  
 537 women (MSW), women seeking men (WSM) and women seeking women (WSW)). Standard  
 538 deviations in brackets.

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	<b>Trait category</b>	<b>MSM</b>	<b>MSW</b>	<b>WSM</b>	<b>WSW</b>
<b>Traits offered</b>	Physical attractiveness	0.32 (0.25)	0.26 (0.24)	0.29 (0.23)	0.24 (0.28)
	Personality	0.31 (0.26)	0.41 (0.27)	0.39 (0.26)	0.37 (0.31)
	Resources	0.36 (0.26)	0.33 (0.25)	0.31 (0.24)	0.38 (0.29)
	Commitment	< 0.00 (.03)	< 0.00 (0.49)	< 0.00 (0.01)	< 0.00 (0.06)
<b>Traits sought</b>	Physical attractiveness	0.31 (0.35)	0.31 (0.36)	0.18 (0.27)	0.23 (0.32)
	Personality	0.44 (0.38)	0.47 (0.38)	0.55 (0.36)	0.51 (0.38)
	Resources	0.21 (0.28)	0.18 (0.28)	0.25 (0.30)	0.23 (0.30)
	Committment	0.04 (0.17)	0.03 (0.14)	0.02 (0.14)	0.02 (0.12)

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543 Table 3. Component loadings after varimax rotation. Highest loadings for each component in bold.

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<b>Component</b>		<b>1</b>	<b>2</b>	<b>3</b>
<i>% Variance Explained</i>		35.58	30.23	18.35
<b>Traits offered</b>	<i>Proportion resources</i>	<b>0.84</b>	-0.20	0.24
	<i>Proportion personality</i>	-0.41	-0.09	<b>-0.91</b>
	<i>Proportion appearance</i>	-0.42	0.30	<b>0.75</b>
<b>Traits sought</b>	<i>Proportion resources</i>	<b>0.77</b>	0.23	-0.13
	<i>Proportion personality</i>	-0.35	<b>-0.92</b>	-0.09
	<i>Proportion appearance</i>	-0.26	<b>0.82</b>	0.22

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548 Table 4. Means and standard deviations for each component in each advertisement category.

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	<b>Writers</b>	<b>Seeking</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Interest in Resources (Component 1)</b>	Women	Men	-0.04	0.89
		Women	0.12	1.10
	Men	Men	0.01	1.02
		Women	-0.09	0.96
<b>Seeking: Physical attractiveness vs Personality (Component 2)</b>	Women	Men	-0.16	0.93
		Women	-0.13	1.00
	Men	Men	0.09	1.00
		Women	0.09	1.02
<b>Offering: Physical attractiveness vs Personality (Component 3)</b>	Women	Men	-0.08	0.96
		Women	-0.09	1.10
	Men	Men	0.18	0.96
		Women	-0.15	0.97

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553 Figure 1. Estimated marginal means for each component across different writer sex and sex sought  
 554 categories. a) Component 1: Resources. b) Component 2: Seeking physical attractiveness vs seeking  
 555 personality. c) Component 3: Offering physical attractiveness vs offering personality). Error bars +/- 1  
 556 SE.

