Comparison between primary and secondary mate markets: an analysis of data from lonely hearts columns

Sławomir Kozieńa, Bogusław Pawłowskid

aInstitute of Anthropology, Polish Academy of Sciences, ul. Kuznicza 35, Wrocław 50-951, Poland
bDepartment of Anthropology, University of Wrocław, ul. Kuznicza 35, Wrocław 50-138, Poland

Received 8 April 2002; received in revised form 14 November 2002; accepted 30 December 2002

Abstract

Personal advertisements placed in newspapers can be a good source of information on the dynamics of the human mate market. From an analysis of 1587 (776 female and 811 male) advertisements placed in the local Lower Silesian (Poland) newspaper, we were able to compare primary (never married) (PMM) and secondary (divorced/separated) (SMM) mate markets. When controlling for place of residence, it was revealed that the mean time span between the end of education and the age at which females resort to personal advertisement (7–8 years) is very similar in the three education categories. Men who graduated from high school or university were over-represented on the SMM. There were no differences in the residuals of height, weight or BMI between PMM and SMM for females and significant difference only for men's height with relatively taller men on the SMM for the combined two lower levels of education. We also compared PMM and SMM separately for men and women in terms of the rates of offering and seeking resources, attractiveness, commitment and social skills. PMM and SMM differ in three such categories for men and in four for women. However when controlling for advertiser’s age, there were only two differences for women (resources were sought for and attractiveness offered more often on the SMM) and one for men (commitment was sought more frequently on the SMM). This indicates that the difference in preferences should be attributed mainly to the age of subjects and only to a smaller extent to the type of mate market (PMM vs SMM).

© 2003 Elsevier Ltd. All rights reserved.

Keywords: Mate market; Personal advertisement; Preferences; Height; Education

* Corresponding author. Fax: +4871-3752697.
E-mail addresses: slawek@antro.pan.wroc.pl (S. Kozień), bogus@antropo.uni.wroc.pl (B. Pawłowski).
1. Introduction

According to evolutionary theory, humans, being sexually reproducing organisms, should try to choose mates displaying traits indicative of high genotypic quality (Buss, 1989; Symons, 1979). So as to find the best possible partner on the mate market, people advertise themselves in different ways, while having specific preferences and demands from any potential partner. Apart from traditional ways of seeking a partner, personal advertisements which appear in newspapers can be considered to be a mate market which is easy to analyse from an evolutionary point of view. Such a market was studied in terms of age preferences (Bereczkei, Voros, Gal, & Bernath, 1997; Kenrick & Keefe, 1992, Pawlowski, 2000; Thiessen, Young, & Burrougs 1993; Waynforth & Dunbar, 1995; Wiedermann, 1993), in relation to a proportion of offered and sought traits which are evolutionary relevant (e.g. attractiveness, resources, commitment, social skills) (Bereczkei et al., 1997; Greenless & McGrew, 1994; Waynforth & Dunbar, 1995) both considered in relation to sex and age. There are also studies showing conditional strategies undertaken by advertisers (e.g. Waynforth & Dunbar, 1995) or some specific female strategies, for instance related to withholding their age (“hidden age effect”) (Pawłowski & Dunbar, 1999). Finally there are also studies analysing the response rate as dependent on such factors as the advertiser’s socio-economic status, height, weight or other offered traits, which can be attractive for the opposite sex (Baize & Shroeder, 1995; Pawlowski & Koziel, 2002; Rajecki, Bledsoe, & Rasmussen, 1991). The results of these studies indicate that people have different demands and preferences depending on their sex, age and other offered traits. The question we pose here is whether advertisers also differ in their dependence on their marital status when controlling for sex and age. On the mate market, there are people who would like to find their first spouse (bachelors or spinsters) and we refer to them as the “primary mate market” (PMM) and those who are on this mate market after divorce or separation and we refer to them as the “secondary mate market” (SMM). There are also advertisers who are on SMM after the death of their spouse (widows/widowers). However for some important reasons (see Section 2) we decided to exclude these advertisers from our SMM sample.

The main prediction we attempt to verify in this paper is that in relation to sex, the market type (PMM vs. SMM) should differentiate the advertiser’s profile and the preference of traits sought in a potential partner. Those in the SMM had previously been married and therefore had formerly been successful in terms of attracting a long-term partner. Those in the PMM were unable to find or attract a long-term partner and can be seen as those who had been unsuccessful in the traditional mate market. Due to the sex differences in the reproduction time span and the different reproductive strategies of males and females, one should also expect differences between the two sexes in relation to the market type.

The specific predictions are:

1. Due to the shorter reproductive lifespan, women should resort to personal advertisement both on the PMM and SMM market earlier than men.
2. Because of longer self-investment in education, the mean age of advertisers should differ on the PMM mainly for females. Men can resort to personal advertisements relatively later, irrespective of their education level. It is because they are unconstrained by a short reproductive life-time and also because of their more polygamistic attitude.
3. One should expect a relatively greater number of men from the lowest education level in the PMM than in the SMM. Men with lower educational “quality” should have more problems in finding a long-term partner in the PMM. Men who achieved a higher level of education could, on the other hand, be more prone to dissolve their previous relationship in order to find a new partner (usually younger than the previous one) and thereby increase their reproductive chances.

4. Taller men and lighter women (when controlled for age) should be over-represented on the SMM. It is height for men and weight for women, which are related to their chances on the mate market and therefore one should expect that they should be more prone to enter the SMM. Since taller men have a bigger potential pool of partners (Pawłowski & Koziel, 2002) and are perceived as more attractive (e.g. Pierce, 1996) they have higher chances of finding another (younger) partner and they may be more prone to dissolve their previous marriages. Having higher chances for remarriage with a younger woman and for higher reproductive success (Mueller & Mazur, 2001; Pawłowski, Dunbar, & Lipowicz, 2000), relatively taller men should be over-represented in the SMM.

5. Women who have higher fisherian reproductive potentials and no children (those on PMM), and men who have more accumulated resources (those on SMM) should be relatively more demanding in the mate market. They should seek for more in respect to such traits as resources, attractiveness, commitment or social skills and offer relatively less. Since in biological terms reproductive potentials are more related to age than to previous experience it is age which should be a more powerful predictor of an adequate choosing strategy in the mate market than the mate market itself.

2. Material and methods

The database of advertisements from 2008 heterosexual individuals (957 from males and 1051 from females) comes from the “Cmok” matrimonial bureau based in Wrocław (Poland). All of these advertisements appeared between 1994 and 1996 in the soulmate columns of the local newspaper “Gazeta Robotnicza” (in 1998 it became “Gazeta Wrocławska”). The advertisements were placed free of charge and aimed at long-term partnership (that was usually explicitly expressed in the advertisements). Contrary to the paid advertisements placed in many newspapers where advertisers decide what information they want embedded in the advertisement, in our sample, advertisers were given a questionnaire and were encouraged to reveal such information as their age, marital status, education level, place of residence, height and weight. As far as the other offered and sought traits are concerned, the advertisers were given free choice and were not constrained by a word limit. The words used in the advertisements reflect a small number of key dimensions (attractiveness, resources, commitment and social skills) that have strong evolutionary valency (for detailed definitions of these categories, see Greenlees & McGrew, 1994; Pawłowski & Dunbar, 1999; Waynforth & Dunbar, 1995).

We excluded from our analysis all widows and widowers. Those who are on the secondary mate market due to the death of their previous spouse differ in the reasons for which they are on the SMM from those who are there because of divorce or separation. Since our aim is to compare
advertisers’ characteristics and the traits they offer, and seek relationships in respect of their “voluntary” mating strategies (which should not be affected by being forced to be on SMM because of death of their spouse), in our analysis we compare only those PMM who are there because of divorce or separation. There are other reasons why we excluded widows from the analysis. Widows are on average much older and in the case of women usually outside their reproductive period of life. What is also important is that widowed advertisers have a highly biased sex ratio [in our sample 230 females and 82 males, similar to data presented by Chiang, Hardy, Wun and Chiang (1998) who showed that in the USA in 1994, the female to male ratio for widowed people was 5 to 1]. There is no such bias for those who are on the secondary sex market due to divorce or separation (379 women and 333 men).

Advertisements placed by foreigners who sought a Polish mate were also excluded from the analysis. It was partly because we wanted to focus only on the mate market in Poland, and partly due to the small number of such advertisers (only 3.0% of males and 0.1% of female advertisers lived abroad). There were also 73 subjects (40 females and 33 males) who did not specify their marital status. This left us with 776 females and 811 males in the final sample. Furthermore, since in some advertisements information was not complete (e.g. 30 men and 41 women did not reveal their height, and 1 man and 2 women their age) we ran analyses with different sample sizes (the number of cases is specified in each table).

Due to only a small number of advertisers representing the lowest level of education (with only primary education), the two lowest levels of education were pooled. This resulted in a division of the sample into three educational levels: university, high school, vocational with elementary school. For the same reason, urbanisation was scored in three categories: cities, with more than 200,000 inhabitants; middle towns, with fewer than 200,000 inhabitants and more than 25,000 inhabitants; and small towns or villages, with fewer than 25,000 inhabitants. Marital status embraces two categories: never married (primary mate market = PMM), comprises 397 females and 477 males; divorced or living in separation (secondary mate market = SMM), comprises 377 females and 333 males.

Statistical differences between primary and secondary markets for each sex were tested by Student t-test for continuous variables and by Pearson’s $\chi^2$ test for categorical variables and additionally by the Generalised Linear Model (GLM) for categorical variables and categorical covariables. Logistic regression analysis was used to examine the differences between PMM and SMM in the rate of such offered and sought traits as attractiveness, resources, social skills and commitment, controlling for age. The significance in logistic regression was tested by Wald’s $\chi^2$. All analyses were carried out using STATISTICA 5.5 A PL (StatSoft, 2000).

3. Results

We checked first whether there are any differences in the mean ages of advertisers for the two sexes separately for PMM and SMM. There was a significant difference between the sexes for age only with the PMM [28.7, S.D. 9.4, for 397 women, and 31.2, SD 8.1, for 477 men ($t = 4.20 P < 0.001$)]. For the SMM the mean age of advertisers was 42.0 for women ($N = 377$) and 43.0 for men ($N = 333$) ($t = 1.54$, n.s.). Having information on the place of residence and education level of advertisers, we were able to determine whether the age of advertisers on both markets differed in
respect to their place of residence and to achieved level of education. There was no significant relationship for men (Table 1), but an increase in the mean age with urbanization level and with education level for women on the PMM. Since there is a possibility that place of residence can be related with education level we ran the GLM (Generalised Linear Model) analysis with both of these measures as the independent variable. Analysis revealed that on the PMM, there was only an effect of education level (education: Wald’s $\chi^2 = 22.47$, df = 2, $P < 0.001$, and place of residence: Wald’s $\chi^2 = 1.18$, df = 2, $P = 0.55$).

The education level significantly covaried with the mate-market only for men ($\chi^2 = 22.6$, df = 2, $P < 0.001$). Those with higher education were underrepresented on the PMM (35.9% after high school and only 6.9% after university) and overrepresented on the SMM (45.6% and 14.0%, respectively, for two higher levels of education).

Next, height, weight and BMI were compared separately for both sexes in relation to the market type (PMM vs. SMM) when controlling for age (residuals were used). The only significant difference was with respect to height for men. The men on the SMM were taller than men on the PMM (res. 0.73 vs $-0.44$, $N = 447$, $t = -2.53$, $P < 0.05$). However, since in Poland social stratification measured by education is positively related to height (Bielicki & Welon, 1982), we repeated this analysis for separate education categories. We found no significant difference between PMM and SMM for any education category. However, there was the same tendency of being relatively taller for men on the SMM from two lower education levels (and to be shorter for men who graduated from university). To exclude the possibility that the lack of significance could have been related to sample sizes that were too small, we ran an analysis which combined the two lower categories of education. Student’s $t$-test revealed that when controlling for age, men from the two lower levels of education appeared to be taller than their counterparts from the PMM ($t = -2.51$, df = 615, $P = 0.012$).

In the last step, we checked whether advertisers differed in their strategies in seeking a partner according to the market type. Using $\chi^2$ Pearson analysis, between PMM & SMM, we found the

Table 1
Intrasexual comparisons of mean age of advertisers in dependence on their place of residence and education level (ANOVA)

<table>
<thead>
<tr>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N (P/S)</strong></td>
<td>PMM</td>
</tr>
<tr>
<td><strong>Mean age</strong></td>
<td><strong>SD</strong></td>
</tr>
<tr>
<td>Small towns &amp; villages</td>
<td>253/218</td>
</tr>
<tr>
<td>Middle towns</td>
<td>46/85</td>
</tr>
<tr>
<td>Big cities</td>
<td>98/74</td>
</tr>
<tr>
<td>$F$</td>
<td>8.69</td>
</tr>
<tr>
<td>$P &lt;$</td>
<td>0.0000</td>
</tr>
<tr>
<td>University</td>
<td>74/69</td>
</tr>
<tr>
<td>High school</td>
<td>219/178</td>
</tr>
<tr>
<td>Vocational + Primary</td>
<td>75/82</td>
</tr>
<tr>
<td>$F$</td>
<td>26.09</td>
</tr>
<tr>
<td>$P &lt;$</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
following significant differences for men: resources offered ($\chi^2 = 29.74, \text{df} = 1, P < 0.001$) and sought ($\chi^2 = 22.72, P < 0.001$), and attractiveness sought ($\chi^2 = 4.34, P < 0.05$), in all cases in favour of those from the SMM. In a similar comparison for women, the significant factors were resources offered ($\chi^2 = 19.85, P < 0.001$) and sought ($\chi^2 = 23.38, P < 0.001$), both of which were in favour of women from the SMM, and attractiveness offered ($\chi^2 = 9.48, P < 0.01$) and social skills sought ($\chi^2 = 8.88, P < 0.01$) both of which were in favour of women from the PMM. Since these results could have been confounded by advertisers’ age (we wanted to find the market effect on mate searching strategies independent of age) we carried out the same analysis controlling for age. As Table 2 shows there were only two significant differences for women (in resources sought and attractiveness offered) and one for men (in commitment sought). It is also worth noting that commitment sought did not differ without controlling for age for men (although it was close to significance $P = 0.09$).

4. Discussion

The first prediction was confirmed only for PMM. The difference in the mean age of advertisers between women and men for the PMM and not the SMM indicates that women, constrained by their shorter reproductive lifespan, want to use their reproductive potential better and resort to personal advertisement in the PMM earlier than males. Since the majority of the secondary mate market is related to women who have completed or are just about to complete their reproduction, there are no more reproductive constraints, which would cause the difference in the mean age for both sexes in this market. On the other hand, women are usually younger than their husbands (e.g. Buss & Schmitt, 1993) and after separation and divorce, we should expect to have in the SMM women who are on average 2–3 years younger than men. The fact that we do not observe this age difference may be related to the longer waiting time before deciding to take out a personal advertisement by women. This is supported by the results showing that in the mid 1990s, the

Table 2

<table>
<thead>
<tr>
<th>Women (PMM vs SMM)</th>
<th>Men (PMM vs SMM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$N$ (P/S)</td>
<td>Chi square (Wald)</td>
</tr>
<tr>
<td>Resources offered</td>
<td>397/377</td>
</tr>
<tr>
<td>Resources sought</td>
<td>5.07</td>
</tr>
<tr>
<td>Commitment offered</td>
<td>0.45</td>
</tr>
<tr>
<td>Commitment sought</td>
<td>0.13</td>
</tr>
<tr>
<td>Social skills offered</td>
<td>0.06</td>
</tr>
<tr>
<td>Social skills sought</td>
<td>2.71</td>
</tr>
<tr>
<td>Physical attractiveness offered</td>
<td>7.27</td>
</tr>
<tr>
<td>Physical attractiveness sought</td>
<td>1.65</td>
</tr>
</tbody>
</table>
average period between the first and second marriage was generally greater for women than for men at all education levels (Pawłowski & Kozieł, in preparation).

Our analysis confirmed the second prediction. The differences in the mean ages for female advertisers in three education categories reflected differences in the mean education time. What is interesting however is the fact that women resort to personal advertisement to find a partner in almost the same amount of time after finishing education irrespective of education category. It seems that after graduating, they take some time to find a long-term partner by traditional ways but when unsuccessful, after about 8 years, they resort to the soul mates bureaux or magazines. This idea is strengthened by results obtained when limiting the sample only to those women having some reproductive potential (up to 45 years of age). Female advertisers’ mean age in this restricted sample was 25.4 years (SD 7.11, N = 75) for the lowest education category, 26.9 years (SD 7.47, N = 204) for those who graduated high school and 31.6 years (SD 5.5, N = 61) for those with university education ($F = 14.2, P < 0.001$). In all education categories, women tend to resort to personal advertisements on average about 7–8 years after finishing their education. Within the same upper age limit we did not find any similar pattern for men (for increasing levels of education, the mean ages were: 29.8, 29.9, and 31.6 years, respectively).

This analysis revealed that men with the highest level of education were over-represented on the SMM (prediction No. 3). To check whether this was related to some difficulties with finding a new wife by these men or whether it was just some reflection of a higher proportion of these men on the SMM, we compared our results with the Polish Census Bureaux data (received from GUS—Central Statistical Office—unpublished) for 1994–1996 (the years in which advertisements were placed in newspapers). We chose only the same three categories of education, which were used in our analysis. For 608,115 men who got married in this period, the percentages for those who graduated from university were almost the same as in our sample (7.4% on PMM vs 15.5% on SMM). Although men with the lowest education level were underrepresented on the SMM (61.16% vs 52.9%), there was however only a small difference for men educated beyond high school level (31.4% vs 31.6%). This clearly indicates that the proportion of male advertisers in terms of their education was not biased in the personal advertisements studied here.\(^{1}\)

It can be hypothesised that the possession of more resources and higher status achieved by better educated men can make them more prone to dissolve their previous marriages and to be in the SMM. As Mueller and Mazur (2001) showed, men who have had two wives had also higher reproductive success. In the SMM, men who are in their 40s and 50s seek much younger women (see the results from the same sample of advertisers by Pawłowski, 2000), who are likely to have higher reproductive potential than their previous wives at their present ages. It is possible that in order to gain higher reproductive success at this level of education, we have mainly men who aim first at marriage dissolution and remarriage.

The comparison between PMM and SMM for morphological traits revealed only one difference for the combined two lower levels of education for men in height (only partial support of the

\(^{1}\) A similar comparison in relation to women’s education revealed that the proportion in the PMM and the SMM in our data matches the proportion of women from Census data (overrepresentation of women with the lowest and highest education for those who got married for the second time) we can assume that our advertisers’ sample is not biased in terms of education when compared to the general population of Poland.
prediction No. 4 related to the men’s height). Why was it that we found no significant difference, or some opposite tendency, for men with the highest level of education ($t = 0.64$, df = 65, $P = 0.52$)? One possibility is that relatively taller and well-educated men do not need to resort to personal ads. Due to the high demand for such men, they can easily find a second partner (or even have an unofficial partner while still being in the previous relationship) in the traditional way. Analysis did not confirm this part of prediction 4, which was related to the female weight. It might be due to the fact that in the PMM, women can be relatively heavier than their peers who already have a long-term partner. This might be the reason why the women on the PMM were not different from the women on the SMM who could not retain their mates e.g. because of higher BMI. This hypothesis, however, would need further studies.

When controlled for age, women on the SMM more often sought resources than their counterparts from the PMM (contrary to the prediction No. 5). We can speculate that this could have been due to the fact that lack of resources was one of the main reasons of dissolving the previous marriage and therefore one of the very important traits preferred on the SMM. The other possibility is that women on SMM have on average more children and they demand more resources to secure adequate conditions for their children. Using panel data for the Netherlands, Poortman (2000) showed that the negative economic consequences of separation or divorce were more severe for women than for men.

It is not clear why, when controlling for age, attractiveness appeared to be offered more often in the PMM. This can be attributed either to the fact that in the PMM there really are more attractive women or to the difference in mate searching strategy between PMM and SMM. The last significant result, that of the higher frequency of seeking commitment by men in the SMM, can be explained by their higher appreciation of this trait after bad experiences and the dissolution of previous marriages. In general, men’s preference for commitment in contemporary Western society seems underappreciated on the human mate market (Pawlowski & Dunbar, 2001).

Since in the analysis without controlling for age we found three differences for men and four for women, this suggests that people differ in their mate strategy in respect to their age rather than to the market type and to their own experience from the previous marriages (which confirms prediction No. 5). In general, the results show that having more experience from previous marriages does not influence the preference of those who are in the SMM in comparison to the PMM, with respect to the majority of traits studied here. One should however treat our results with some caution. In further studies on differences between PMM and SMM using personal advertisements as data sources, one should include also such possibly confounding but important factors as not having or having children, their ages and the real material conditions of the advertisers. It would also be interesting to have longitudinal data for the people who used personal advertisements when being in the PMM and subsequently in the SMM, because in our studies we were only able to compare two different sets of people.

Acknowledgements

We would like to thank Robert Kruszynski and Stanley Ulijaszek for their valuable comments and great help in English. We also appreciate all the suggestions made by the referees and by the editors of Personality and Individual Differences.
References


Pawłowski, B., & Koziel, S. Intermarriage time spaces for both sexes in dependence on subject’s age and achieved education level (in preparation).


