



Szociológia Doktori Iskola

## ENGLISH SUMMARY

to

**László Lőrincz:**  
**Mate Selection in Online Dating**  
Ph.D Thesis

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Budapest, 2008.

**Institute of Sociology and Social Policy**

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## 1 Introduction

Internet usage has several kinds of social effects: effects on political participation, local communities, social capital, earning capacity, and inequality in consumption are only some examples. (DiMaggio et. al. [2001, 2003]). The basic question of this research was to analyze the effect of Internet on social network composition of individuals. From different types of social relationships, romantic relationships were selected, and from different types of Internet uses the use of online dating. Romantic relationships have crucial importance in sociology. Studies on homogamy and heterogamy analyze the trends in marrying similar or different people. Racial or status homogamy are measures of closeness of a society, and one kind of social mobility is marital mobility.

The idea of writing about effects of on-line dating came from the research, our team (prof. György Lengyel, Dániel Füleki, Eliza Eranus, Viktória Siklós) has carried out in a small village in Hungary. In this research computers and Internet connections were installed to 10 households, and Internet usage patterns, and effects on the local community were monitored (Lengyel et. al. [2006]). I have noticed that two of our 10 subjects have used the Internet for dating purposes, which suggested that Internet dating is not a marginal phenomenon in society.

On-line dating systems have gained particular popularity in the last decade. This can be illustrated by the fact that in Hungary in April 2006 10% of the Internet using population did use on-line dating, and 45% of them have ever tried it (NRC market research). An important property of on-line dating today is that it is typically organized by general websites, where every layer of society can be found, which have Internet access. On dating sites people can find each other, who would not meet in traditional

meeting places, such as schools, workplaces or clubs; therefore, this kind of dating may have a positive effect on heterogamy.

Using survey on on-line dating not only the effect of the opportunity structure, but also partner selection preferences could be examined. Information on preferences is necessary for analyzing Internet's effect on partner selection, and on-line surveys on dating sites created excellent opportunity to analyze them.

## **2 Theoretical framework**

The “who marries whom” question is on the agenda of the social sciences since the beginning. Sociological theory usually names two factors, which drives marital selection. The first of these are human preferences, and the second are the social opportunities (Kalmijn [1998], Bukodi [2002]). Preferences describe whom others will find attractive. There are two theories, which have references to mate preferences: social exchange theory, and attraction theory. Opportunities define the possible pool where people can select according to their preferences. Studies on the opportunities examine the effect of group properties (heterogeneity, size) on partner selection (homogamy).

According to the original social exchange theory (Thibaut & Kelley [1959], Homans [1961]), in social relationships people are faced with rewards, which they can get from the other, and costs, which they suffer. On the bases of the theory, people form and dissolve social relationships according to these costs and benefits: one forms a relationship with someone who offers higher rewards and lower costs. Social exchange theory is often applied to marital selection. An example for this “applied version” of the theory is the following:

“...individuals seek the »best value« they can achieve in a mate. Each individual is on the degree to which he or she possesses valued traits such as beauty, intelligence, charm, wealth, and social status. It is assumed that if every individual seeks the best value in a mate, individuals of approximately equal value will tend to pair up. In this manner, individuals can be said to »exchange« their assets for those in a partner.”

(Kenrick et. al. [1993], p.951)

Scholars of marriage markets tested the theory the following way. They assume that if it is true, than having more valued attributes on the market gives people greater chance to attract partners with more valued characteristics. This must be true even for two different characteristics. Therefore a correlation should exist between different characteristics of the partners. Studies tested this correlation for different pairs of traits.

Several studies (Elder [1969], Taylor & Glenn [1976], Stephens et. al. [1990]) compare the relationship between men’s and women’s physical attractiveness and education. A question was put, whether more attractive or more educated women have better chance to get educated husbands. Another group of studies (Kalmijn [1993]), Schoen and Wooldredge [1989]) investigated the exchange between race and education. The study of Rosenfeld [2005] reviews existing evidence on this status-race exchange, and shows that it is only due to inappropriate methodological approach. He points out that the fact, that among black people the higher education predicts higher probability of outmarriage, cannot be regarded as status-race exchange, since black people are lower educated in the average. Therefore preference for same education itself can lead to this result.

One can see that this applied version of social exchange theory has two assumptions about partner selection preferences. First, that there is some general consensus about some attributes if they are good or bad. Second, that these attributes substitute each other to some extent. This preference, where people prefer some attributes (such as young, physically attractive,

educated, etc) regardless their own attributes (age, attractiveness or education) I call “preference for the best value”.

Beside or instead of social exchange (and preferences for the best value), similarity might be the crucial mechanism driving mate selection. The fact that similar people attract each other is a cornerstone of social psychology, and also the homophily theory in sociology. The psychological explanation for this is that rejection of some basic values means rejection of the self, and acceptance means validation of the self, a feeling that one is right (Festinger [1950]). Originally, the effect of similarity was tested about friendship, not about marriage (Newcomb [1961]). In a later study Byrne [1971] found the effect of presumed similarity on attraction to strangers.

An interesting property of preference for the best value (social exchange mechanism), and attraction to similarity is, that both explain homogamy.

Concerning partner preferences, there may be a difference along the stages of the relationship from dating to marriage. Blackwell and Lichter [2004] tested the winnowing hypothesis for dating, cohabiting and marriage. According to the hypothesis, “heterogeneous dating and cohabiting relationships end, while homogeneous partners progress towards marriage” (Blackwell and Lichter [2004], p719-720). Another hypothesis is based on that dating and marriage is about different things. Marriage is about founding family; therefore social status is more important for marriage. Thus, homogamy of married couples should be higher than homogamy of dating ones, especially according to social status. However none of these hypotheses were supported by the data.

From the perspective of my research question, about effects of the opportunities, studies on the effect of group heterogeneity have crucial importance. Blau and Schwartz [1984] analyzed aggregate data of 125 American metropolitan areas. They assumed, that if heterogeneity in a metropolitan area were higher, heterogamy would be also higher. They

tested the correlations for race, national origin, mother tongue, ethnic background, birth region, industry and occupation. They found significant positive correlation for all these characteristics. Kalmijn and Flap [2001] analyze the effect of shared social settings of couples on homogamy. They examined five organized settings: whether the couple were in the same school, whether their family knew each other, if they grew up in the same neighborhood, if they are members of the same voluntary organizations, and if they have the same workplace. The authors supposed that couples who shared a setting, which is more homogeneous according to a special characteristic, tend to be more often similar in that aspect. The only problem was that they did not have data about the homogeneity level of the different settings, so they could build their hypotheses only on “educated guesses”. They supposed, that in school people meet more often someone with the same age, and they will have the same education. They also put forward that the higher level of school they meet, they would be more homogeneous educationally. Another hypotheses were that sharing workplace promotes class homogeneity and that sharing neighborhood, school or family ties result in religious homogamy. All of these hypotheses were supported by the data. The problem of not knowing the homogeneity level at the group level was overcome by McPherson and Smith-Lovin [1987] by choosing voluntary organizations as groups. Their data also supported that heterogeneity of the groups promotes more heterogeneous friendships.

### **3 Hypotheses**

Studies agreed on that similar values and attitudes promote interpersonal attraction. (Newcomb [1961], Byrne [1971]). On the other hand, Newcomb [1961] could not prove the positive effect of similarity according to age, field of study, religion, and urban-rural background. Actually the authors found this effect only about attitudes and values. A further limitation of

these studies is that they are about friendship, not marriage. Some studies about marital preferences presented the effect of similarity, although it was not their central focus (Kenrick et. al. [1993], Sprecher et. al. [1994]).

Evidence for social exchange mechanism in the studies presented earlier is also limited. Stephens' [1990] findings contradict with the theory, Schoen and Wooldredge found significant only some of the interaction effects and Kalmijn's [1993] results can be interpreted in different ways. Furthermore, they examined only a limited number of pairs of characteristics, mostly physical attractiveness – education, and race – education. So it seems, that although many studies have been done, the basic question of marital selection is still unanswered.

My question was, whether social exchange or attraction to similarity is the main mechanism in partner selection. Since both explain homogamy, the question can be also framed as „whether attraction to similarity, or social exchange mechanism (and preferences for the best value) is responsible for homogamy. It is a plausible assumption that both mechanisms work, but about different characteristics. Bukodi [2002] assumes that market mechanism (social exchange) works about social-economic characteristics, and about cultural traits similarity is dominant.

**H1:** Social exchange mechanism works about education, age, race, social status, physical attractiveness, and about them similarity is not relevant.

According to previous studies (Blau & Schwartz [1984], Kalmijn & Flap [2001], McPherson & Smith-Lovin [1987]), the more homogeneous the context where people interact, the higher the homogamy will be. My hypothesis is that:

**H2** higher heterogeneity on dating sites does not promote higher heterogeneity of couples.

My argument for this is, that behind the finding that group heterogeneity increases heterogamy, the mechanism can be, that proximity promotes attraction. (Festinger [1950], Newcomb [1961], Segal [1974]). However, dating sites are different from face-to-face meeting in an important aspect, which may result that these mechanisms do not work. People on dating sites do not interact each other randomly – users contact only those, who they select. Therefore, unintentional encounters do not induce attraction.

For setting hypotheses about effect of context on partner selection, the following arguments are combined.

1. The earlier an attribute is observable in a context, the more people will use it as a selection criterion. (Murstein [1971])
2. Attraction to similarity and preference to best value predict that people tend to choose someone similar. Therefore the earlier a characteristic is observable, more similar choices will be made according to that.
3. If people interact each other, they do not change for someone else, even if the new one looks to be slightly better. (Rusbult [1980, 1983]).

Consequently, the earlier an attribute is observable in a given context, the higher the homogamy will be in that aspect. Additionally, the better a characteristic observable in the context, the higher the homogamy will be according to the characteristic. On the bases of this, the following hypotheses can be created:

**H 3.1.** I expect higher spatial homophily on dating sites than in chat groups.

**H 3.2.** I expect that common interests will show just the opposite pattern: similarity of couples in this aspect will be the higher in chat environment.

**H 3.3.** I assume, that social status will be most important selection criterion on dating sites, it will play the smallest role in chat groups and its importance will be in the middle in traditional face-to-face interaction. Therefore the status homophily of couples will evolve accordingly.

**H 3.4.** Homophily of couples respect to social background would be lower in on-line dating (either on chat or dating sites) than for face-to-face dating.

## **4 Methods**

Two surveys were conducted on two Hungarian dating sites. Study 1 was carried out on a mid-sized one between 10th and 30th of March 2006. Participants were recruited by a banner, which was put on the members' only area of the site. 410 respondents have begun filling in the questionnaire, of which 293 have reached the last page. In Study 2 a questionnaire was presented to the members and former members of one of the largest Hungarian dating sites, between March 20th and 27th 2007. Participants were recruited by e-mail sent by the management of the dating site to the e-mail addresses users gave at the registration. During the one-week period 12,203 respondents answered the questionnaire, of which 7870 were users, and 4333 former users.

To measure preferences, vignette method (see Finch [1987]) was used in Study 2. Introduction forms of hypothetical members of the dating site were shown to the respondents containing a picture, age, height and weight, education and social status. Preferences for the best value (social exchange mechanism) vs. preference for similarity were tested by calculating differences between respondents' and their partners' traits. Both of these explain negative effect of negative difference (lower value than respondent's one) on liking. On the other hand, exchange predicts a positive effect of positive difference (higher value than respondent's one), and similarity a negative effect. To distinguish preferences from strategic behavior, two kinds of questions were asked: whether the respondent would initiate a relationship with the man/woman on the picture, and whether the respondents would answer a message. Responding to a message was considered as preferences themselves, and difference between responding

and initiating was considered as strategic behavior (ego's scrutiny on whether the alter would like him/her). Every respondents five hypothetical profiles were shown. Preferences and strategic behavior were analyzed using multilevel (random intercept) models (see Snijders and Bosker [1999], Rabe-Hesketh and Skrondal [2005]). After examining preferences, age-education exchange was examined for actual couples using linear regression models (age difference of partners on education difference of them). Data on couples was achieved by asking respondents about their and their respondents' traits.

The effect of group heterogeneity on homophily of couples was analyzed by comparing the two dating sites of Study 1 and Study 2 considering age and education. Respondents in Study 1 were asked about their last partners, whom they met at least two times face-to-face from the dating site and from any chat groups. In study 2 I asked, where respondent have met their last partners (face-to-face, on a dating site or in chat groups). Questions were asked in both cases about attributes of the respondents and their partners. To measure group heterogeneity, the average age and education distances of partners were computed assuming random selection, similarly to McPherson and Smith-Lovin [1987]. As an indicator of homophily of couples, average distances between actual partners were used. Effect of context on partner selection was tested by comparing homophily of couples, which met face-to-face, chat groups and dating sites. In case of Study 1. spatial and educational homophily and interest similarity was compared between couples from chat groups and dating sites. Using study 2. educational homophily and homophily of social background was compared for couples from face-to-face dating, chat groups and dating sites. Social background was measured by education of the father.

## 5 Results

### 5.1 Preferences: exchange or similarity?

The key variables, for which similarity vs. preferences for the best value were examined, are education and age. For age, preference for similarity was found for men. Coefficients of both positive and negative age difference were negative, showing that age difference has negative effect on liking in both directions (older or younger partner). However, a difference was found between the magnitudes of these effects. Men disprefer younger women less than they disprefer older ones. This suggests that the two forces (liking younger women and liking similar aged women) are present simultaneously. Nevertheless, since the coefficient for negative age difference is negative, it shows that the similarity preference is stronger, and the preference for younger women is only a supplementary effect. For women, similarity preferences were present when they were younger, but preference for older men was found, when they were older. Additionally, dispreference for younger men was stronger than dispreference for older ones in the case of young women too. This indicates the presence of two forces: preference for similarity, and the preference for older men. Again, the stronger of the two forces is similarity. Thus, the question, that what explains age homogamy can be answered now. It is that similarity preference is present, and it itself explains homogamy. A weaker force of asymmetric preferences is also present that men prefer younger women and women prefer older men. This explains the fact that when age difference exists between the partners, why usually men are the older partners.

**Table 1: Age coefficients including interaction effects of own age**

		men		women	
		20 years old	40 years old	20 years old	40 years old
initiating	Age +	-0.11	-0.33	-0.04	0.10
	Age –	-0.07	-0.06	-0.12	-0.08
responding	Age +	-0.09	-0.28	-0.04	0.08
	Age –	-0.03	-0.04	-0.13	-0.08

About education, results of the regressions on liking have shown that people disprefer others with lower education for proposing relationships and accepting proposals for men, and in the case of initiation for women. Coefficients of being more educated than the respondent are insignificant for both men and women. This indicates joint presence of the positive effects (better match) and the negative ones (difference) when considering partners with better education. Therefore for the question that which one of the two forces is responsible for educational homogamy, the answer is that both.

Beside examining preferences of exchange or similarity, actual social exchange of age and education was examined, using data of respondents, and their last partners. In the regression models, age difference did not have an effect on education difference for men, and a small, but significant effect was found for women.

## 5.2 The effect of group heterogeneity

Average age distance in case of random selection (group heterogeneity) was 9.32 years in case of Study 1 and 12.62 years for Study 2. Age heterogeneity of couples is lower for Study 1 than for Study 2 (3.64 yrs vs. 4.33yrs) respectively. This difference is significant at  $p = 5\%$  level using independent samples t-test. Concerning education heterogeneity Study 1 is somewhat more heterogeneous of the two dating sites. (1.32 vs. 1.18)

Couple heterogeneity is also somewhat higher there (0.85 vs. 0.70) but the difference is not significant at  $p=5\%$  level using independent samples t test. Thus H.2, that group heterogeneity does not affect selection patterns on dating sites was not supported.

### **5.3 The effect of context on selection and homogeneity**

Concerning differences between on-line dating and the traditional face-to-face one, additional hypotheses were set. It was assumed that the earlier and the better a characteristic was observable in a context, the higher the homophily of couples would be. Three contexts, online dating, web-based chat groups and face-to-face dating were examined. In Study 1 interest similarity, spatial and educational homophily was compared for chat groups and dating sites, but no significant differences were found.

In Study 2, first average education difference between partners were compared by context of meeting. In case face-to-face meeting average distance was 0.72. For the dating site and chat groups this value is 0.70 and 0.81 respectively. Only difference between chat and the dating site was significant at 5% level using one way ANOVA with Tukey's post hoc test. Difference between face-to-face and chat groups was significant at 10% level. An important result is that on-line dating using dating sites do not increase heterogeneity of couples, but dating on chat groups does.

Average education differences between partners by relationship type (casual dating, steady dating, cohabiting and marriage) were computed. Data shows that heterogeneity is somewhat increased in stronger relationships, but the differences are not significant. These data contradicts the winnowing hypothesis that heterogeneity is decreased if the relationships are stronger. This lack of significant relationship between tie strength and couple

heterogeneity excludes the alternative explanation that effect of context on heterogeneity may be due to the underlying effect of tie strength.

Beside education, differences of social background between partners were analyzed. Social background was measured by education level of the father. Parents' education is a characteristic that cannot be observed on the dating site, there is no question about this data on the introduction form. Average distance in this aspect was 0.91 for face-to-face meeting, 1.02 for the dating site and 0.95 for chat groups. Difference between face-to-face meetings and the dating site was significant at 5% level using one way ANOVA with Tukey's post hoc test. Thus, corresponding our hypothesis, heterogeneity of partners in this aspect is higher for couples met on the dating site than for couples met face-to-face. On the other hand, chat groups do not differ significantly from the other two contexts in this aspect. This relationship also needed to be controlled for differences by relationship type. Similarly to education, no significant effect of relationship strength on differences of partners' social background was found.

## **6 Discussion**

Using survey on on-line dating partner selection preferences could be examined. About age, for the question, that similarity, or preference for the best value explains homogamy, the answer was similarity. An interesting finding is that age of respondents increases the willingness to initiate communication and respond to a proposal. This is an indication of exchange on the level of strategic behavior. It shows that participants on the marriage market believe, that they are less desirable, if they are older; therefore they are less picky in their preferences.

About education, the first conclusion, that education is only a secondary preference in partner selection after age and physical attractiveness, can be found in previous social psychological literature. Beside regression on

preferences, it is supported by the finding that difference in homophily and homogeneity of the selection pool is much bigger in case of age than in case of education. Regressions on preferences have shown that for the question, whether similarity or preference for the best value (social exchange) is responsible for educational homogamy, the answer is that both.

Taken into account that no preferences for best value were found for age, it is not surprising that only a minor education-age exchange was found for actual couples. In the regression models, age difference did not have an effect on education difference for men, and a small, but significant effect was found for women. It supports the conclusion of Rosenfeld [2005], that social exchange is only a secondary, minor force in partner selection, if it exists at all.

After partner selection preferences, the effect of group heterogeneity was examined. The existence of this well documented relationship about friends and marriage choices off-line is not evident on-line. Social psychologists have shown that frequent meeting may lead to attraction, and I argued that this could be the underlying micro mechanism behind the relationship found between context heterogeneity and couple heterogeneity by sociologists. I argued that group heterogeneity would not have an effect on dating sites in heterogamy, since on-line dating is different in several aspects from traditional meeting places. A relevant difference is that there are no random meetings in on-line dating. Members of dating sites usually use built in search engines to select partners; therefore they interact only selected members of the site. Attraction formation may be also limited on-line. Scholars of the “reduced cues” approach (Sporull and Kiesler [1986], Rice and Love [1987]) argued that lack of gestures, mimicry and voice tone lead to weaker ties in on-line relationships than in off-line ones. However, McKenna et. al [2002] found that liking is even higher if partners first

communicate on-line than if they meet first off-line suggesting that assumptions of the reduced cues studies are not correct.

The effect of group heterogeneity was tested about age and education by comparing two Hungarian dating sites. Results have shown that age heterogeneity does increase heterogamy.

How can this finding be explained? A reason can be that people do not always use the search engines on the dating sites. They may also simply browse new users, and write to ones, who they like on the bases of the photo or the introduction text, which simulates random meetings of face-to-face encounters. An additional relevant explanation can be that there are other mechanisms explaining the relationship between context heterogeneity and couple heterogeneity, beside attraction formed by random meeting. Previously I assumed that people have preference for similarity, and heterogeneous couples can be formed in heterogeneous contexts, when the force of attraction to frequently seen people can overwhelm the affinity for similarity. However, it is possible that there are people in society, who have lower preference for similarity, or have preference for dissimilarity. For them, homogeneous contexts are effective barriers in meeting others, who are different from themselves.

Concerning differences between on-line and the traditional face-to-face dating, it was assumed that the earlier and the better a characteristic was observable in a context, the higher the homophily of couples would be according to that. In Study 2 it was found that educational homophily is lower for couples met in chat groups, than ones, met on dating sites and face-to-face. No significant difference was found between the on-line dating site of Study 2 and face-to-face meetings. On this dating site people were able to search for users on the bases of education, and check education of their candidates on their registration form before contacting them. Using

chat groups, this information usually turns out only after interacting the other. Therefore, this result is consistent with the hypothesis.

The fact that on-line dating on dating sites did not increase educational heterogamy is an interesting finding from the perspective of the previously found relationship between group heterogeneity and educational heterogamy. Assuming that dating sites are more heterogeneous educationally, than face-to-face meeting contexts, it can be expected that educational heterogamy would be higher on dating sites. An explanation may be that the effect that education is well observable on the dating site (Study 2) balances the effect that it is more heterogeneous than face-to-face meeting places. Educational heterogeneity in Study 1, where education was not observable, was somewhat higher, than for couples met face-to-face in Study 2.

Concerning social background there was no information on the examined dating site of Study 2, which can be considered as general practice. In this aspect couples met on the dating site were more heterogeneous than ones met face-to-face, which match my hypothesis too.

A possible application of the study about preferences was not concerned in this study. It is the effect of selection (similarity vs. preference for best value) on degree distribution of the social networks. Degree distribution of networks gained much attention since recent publications on scale free networks. Barabási and Albert [1999] have shown that preferential attachment mechanism creates scale free networks Barabási [2002] have reported many examples for social and Internet networks, which are scale free. A network analysis of a Swedish dating community (Holme et al [2004]) has found that degree distribution is close to the one of scale free networks'. The questions could be put, how different preferences affect the network structure? Preference for the best value is close to preferential attachment, but it is not exactly the same mechanism. Preference for the

best value assumes that linking is based on an external attribute, while preferential attachment is based on number of existing connections. An interesting question is that what kind of network is created based on preference for the best value, and what can one expect on the bases of attraction to similarity. Gathering data on degree distribution in on-line dating is much easier than on traditional dating, however it still requires log analysis of the dating site activity.

Degree distribution of social networks is especially interesting for managers of the dating sites. Highly asymmetric distribution means that some users get very high number of contacts, and majority only a small number or none. In this case the ones, who get high number of contacts (requests for dating) become overloaded and cannot answer the requests. Consequently many users become frustrated by the fact that they do not get enough contacts and do not get answers to their requests. User frustration sooner or later result in high churn rate on the dating site, which managers try to avoid. Therefore an interesting question for dating site managers is that how can they make degree distribution more flat.

In the research an interesting result was found about difference in homophily of couples along the dating process from dating to marriage. The winnowing hypothesis supposes that social homophily increases with the progress towards marriage. My data have shown that this hypothesis is not true, neither concerning educational differences, neither for differences in social background. Blackwell and Lichter [2004] did not find evidence that educational homophily would be higher for married couples than for dating ones using the Survey of National Survey of Family Growth (1995) in the U.S either. Schoen and Weinick [1993] found that educational homophily is higher among cohabitations than marriages, and age homophily is smaller. However, lack of homogenizing effect of the dating and cohabiting period by education cast doubt on the winnowing hypothesis. The question

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remains, that what can be the reason for this. A reasonable assumption is that the winnowing process occurs earlier in the relationship. My data have shown that there are already no differences between casual dating and steady dating, so the winnowing process must take place even earlier. Presumably, it may take place at the first date. This hypothesis is supported by findings of Kenrick et. al. [1993] for off-line meetings too. Using survey method they found that importance of similarity in education, age and race is higher for dating and marriage compared to a single date or a single sexual relationship. On the other hand, importance of similarity does not differ comparing dating relationship and marriage. However, this proposition needs further testing on actual couples. As suggested by Balckwell and Lichter [2004] unambiguous conclusions about the winnowing hypothesis can be best achieved using longitudinal data.

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### **English:**

1. Lőrincz, L. [2006]: Rules of attraction: How do people select partners? *Review of Sociology of the Hungarian Sociological Association* 12 (1): 71-84.

### **Hungarian:**

2. Lőrincz, L. [2006]: A vonzás szabályai. Hogyan választanak társat az emberek? *Szociológiai Szemle* 2006/2: 96-110.