Romance and risk: romantic attraction and health risks in the process of relationship formation

M Fishbein Professor , M Hennessy , M Yzer & B Curtis

Romance and risk: romantic attraction and health risks in the process of relationship formation

M. Fishbein[1], M. Hennessy[1], M. Yzer[2] & B. Curtis[1]

[1]*Public Policy Center, Annenberg School for Communication, University of Pennsylvania, Philadelphia, PA, USA &* [2]*Amsterdam School of Communications Research, University of Amsterdam, Amsterdam, the Netherlands*

Abstract   *This paper reports on a study that identified which of 36 possible attributes of potential romantic partners were perceived as most important for selecting a romantic partner. It also quantified perceived risk and perceived attractiveness judgments for 159 partner characteristics ('aspects'). Thus, it directly investigated the partner characteristics that reflect both risk and attractiveness as well as the correlation between these two concepts. Every one of the 36 attributes were viewed as important by at least some respondents and there was wide variance in the frequency with which they were chosen. While almost 80% of the respondents felt it was important to know something about the potential partner's 'appearance', less than 4% felt it was important to know about 'accessories'. In addition to 'appearance', only 3 other attributes were selected as one of the 15 most important by at least 60% of respondents. The gamma association across aspects between average risk and average attractiveness was − 0.61, suggesting that the more one is attracted to some aspect of a potential partner, the less likely is one to view that aspect as 'risky'. This may help explain why it sometimes appears that risk information is ignored when it concerns a partner to whom one is attracted. Somewhat surprisingly, there were remarkable similarities between gender and among ethnicities with respect to both selecting attributes that are important in partner selection and in identifying both attractive and risky aspects.*

There is evidence that people engage in 'risky' (i.e., unprotected) sex with 'safe' partners and in 'safer' (i.e., condom protected) sex with 'risky' partners (Fishbein & Jarvis, 2000). For example, people are more likely to use condoms with casual or occasional partners than with main or regular partners. In addition, those who have had a main partner for less than 1 month are more likely to use condoms than are those who have had a main partner for at least 3 months (Peterman *et al.*, 2000). Additional evidence that intentions to use condoms vary as a function of people's sexual partners comes from a recent study of condom use among different high risk groups (Montano *et al.*, 2001). For example, while both male and female injecting drug users, commercial sex workers, and multi-partnered heterosexuals had strong intentions

to use—and actually did use—condoms with their casual partners/clients, relatively few intended to use or actually did use condoms with their main partners. One possible explanation for this difference in condom use intentions and behaviors with respect to main and occasional partners might be that people perceive their main partners as 'safe' and for that reason are unlikely to use condoms (Rhodes & Malotte, 1996).

Curiously, research has failed to show the expected positive effect of perceived risk on condom use (Brown *et al.*, 1991; Gerrard *et al.*, 1996; Poppen & Reisen, 1997; Van der Velde *et al.*, 1994). In order to explain the lack of relationship between perceived risk and condom use, some authors raise questions about measurement (e.g., Poppen & Reisen, 1997; Weinstein & Nicolich, 1993). For example, Reisen and Poppen (1999) suggested the use of a specific, partner-based risk measure (i.e., how likely is it that you will contract AIDS from your current partner?) instead of a global risk measure (i.e., how likely is it that you will contract AIDS in the future?). They argued that one's own risk perceptions and behaviors can vary with the perceptions of one's partner being high or low risk. Unfortunately, however, a closer inspection of the research conducted with the specific risk measure suggests a floor effect in that people tend to perceive their partners as being at very low risk (Reisen & Poppen, 1999) and thus they often do not intend to nor do they use condoms.

Rosenstock *et al.* (1994) suggested that, in addition to being partner specific, measures of risk should have behavioral anchors. That is, rather than simply assessing the likelihood that one will 'get' AIDS (or some other disease) in general or from a specific partner, the risk question should be tied to a specific behavior. Consistent with this, Fishbein and Jarvis (2000) found that the stronger one's belief that unprotected sex with their partner puts one at risk for HIV, the more likely is one to always use a condom with that partner. They also found that while condom use was essentially unrelated to STD incidence among those with 'low risk' partners, correct and consistent condom use with 'risky' partners did significantly reduce STD incidence.

These findings suggest that people may, to some extent, be accurate in judging their partner's risk status. In fact, other research shows that on an ordinal level, people are fairly accurate judges of their own general risk of acquiring AIDS, although they display optimistic bias when comparing their risk status to others (Van der Velde *et al.*, 1992; 1994).

Another possible explanation for the limited predictive power of perceived partner risk may be that although people can accurately estimate this risk, they don't pay attention to it in deciding whether to date, have sex with, or to use a condom with a potential partner. For example, respondents often report that they 'just know' whether a sexual partner is safe through observations of the partner's appearance (e.g. Gold *et al.*, 1991; Keller, 1993; Maticka-Tyndale, 1991; Williams *et al.*, 1992) or other formally 'irrelevant' information.

In one study (Agocha & Cooper, 1999) subjects (especially men), neglected risk-relevant information, and relied on personal characteristics such as perceived physical attractiveness in deciding to date and have unprotected sex with a potential partner. Participants viewed a photograph of a potential sex partner that was either high or low on a physical attractiveness scale and read a dating agency profile in which information about the potential partner's sexual history was embedded. Physical attractiveness was a very important predictor for intentions to have sex and also predicted intentions to use condoms. However, regardless of whether the potential partner was at high or low risk (according to the provided sexual history), the higher the participants' intentions to have sex, the lower were their intentions to use condoms.

Although this study gives important insights into the relationships between physical attractiveness, perceived partner's risk, and partner selection, it did not investigate the process

by which participants actually came to their judgments of risk or attractiveness. Specifically, it did not identify which features or aspects of a potential partner increase or decrease one's degree of attraction to that partner. It would be informative to know what particular features or specific characteristics of a potential partner are correlated with assessment of risk and attraction. Also of interest would be the correlation between these two values (e.g., do high risk cues reduce attraction and/or do attractive cues reduce perceived risk?)

The question of how persons process information about a potential partner takes on additional importance as new communication technology and increased mobility change how people find sexual partners. For example, there is evidence that people are using internet dating agencies and bulletin boards to meet and have sex (Bull & McFarlane, 2000; Bull *et al.*, 2001). Using internet 'personal ads' and opportunities to interact via bulletin boards and chat rooms, people get information and make decisions about future interactions with a potential partner. Since a relationship has been established electronically, when people meet they may have the impression that they know each other well and therefore they may subsequently express their trust by neglecting safer sex practices. Unfortunately, these new forms of romantic social interaction have already led to evidence of disease transmission and health scientists predict that dating arranged on the internet will contribute to the spread of sexually transmitted diseases (McFarlane *et al.*, 2000).

Our conceptualization of judgment formation is based on a cue-utilization approach. Our assumption is that people make predictions of one variable (risk) from another variable (cue) (Dollinger, 1985; Rao & Monroe, 1988; Borkenau & Liebler, 1995). In order to make risk predictions, people must utilize and integrate multiple accessible cues in a manner comparable to the diagnostic process physicians use when confronted with combinations of symptoms as indicators of underlying disease processes. Specifically, we assume that people utilize manifest *aspects* of partner *attributes* (which do not necessarily represent a causal link to high-risk behavior) as cue values to determine whether a romantic partner puts them at risk. For example, in order to determine a partner's risk status, one may use information concerning sports, shoes, fashion style, and music preferences. When several of these aspects are presented simultaneously, they may interact and influence judgements differently than would be expected by a consideration of each aspect by itself.

This paper reports on a study that identifies which attributes of potential romantic partners are perceived as most important for selecting a romantic partner. In addition, it quantifies both perceived risk and perceived attractiveness judgments for 159 partner characteristics (i.e., the 'aspects' of the more general attributes). In doing so, it directly investigates the partner characteristics that reflect risk, attractiveness, or both, and it assesses the correlation between these two concepts.

Study procedures

Participant recruitment

Respondents were recruited to participate in the study on the campuses of two Philadelphia universities. The project was described to them and then necessary university IRB procedures in regard to informed consent were followed. Each participant was paid $10 to compensate them for the 30–40 min it took to complete a survey. We limited the analysis sample ($N = 388$) to respondents between 18 and 28 years of age (Mean age = 20.75 Median age = 20). Forty-four per cent were male. The sample was predominantly Caucasian (46%) and African American (30%) with 14% Asian and 5% Hispanic. The remaining respondents were of mixed ethnicity or they failed to indicate their ethnicity.

Survey administration and measures

The survey itself was computer administered using the software MediaLab (Jarvis, 1998). The survey was in three sections. The first section presented 36 attributes that are often used to describe 'a potential romantic partner'. These were identified through a content analysis of personal ads in newspapers and magazines. The respondent was asked to select the 15 attributes they considered most important when selecting a romantic partner.

Part two of the survey involved rating the individual aspects defining the 15 attributes from two perspectives: the attractiveness of the person and the person's risk to the respondent's health given that the person was described by a particular aspect(see Appendix A). In addition, the aspects of five randomly selected attributes not in the initial 15 were also evaluated for risk and attractiveness. This was done so that the aspects of 'unpopular' attributes also had risk and attractiveness ratings.

As Appendix A shows, the minimal number of aspects were for the attributes of height (tall, average, short) and gender orientation (the same sex, the opposite sex, both sexes) while the attribute of favourite music genre had the most aspects (top 40, alternative, electronic/ techno, hip-hop/rap/R + B, oldies/classic rock, hard rock, country/folk, jazz/classical). The risk and attractiveness outcomes were scaled from 1 = low risk/attractiveness to 7 = high risk/ attractiveness.

Finally, demographic data as well as a set of questions about romantic partner selection in general were collected. At the end of the process, then, the respondents had selected 15 attributes that they felt were most important in determining the appropriateness of a romantic partner and they had evaluated the individual aspects of these 15 attributes plus the aspects of five additional randomly selected attributes in terms of the health risk and attractiveness of a person possessing each aspect.

Analysis plan

The focus of the analysis is two-fold. First, to examine the relative importance of the 36 attributes for initiating a romantic relationship, we focus on the number of times a particular attribute is selected expressed as a percentage of all respondents: this measure is labelled 'salience'. The second focus is on the relationship between attractiveness and risk at the aspect level. We want to know which aspects are especially indicative of risk (or attractiveness) and how, across all the aspects, risk and attractiveness ratings are correlated.

Results

Salience

Table 1 shows the salience of each attribute for the entire sample. Each of the 36 relationship attributes were viewed as one of 'the 15 most important' by some respondents. There was, however, considerable variation with almost 80% saying it was important to know about a potential partners 'Appearance' (i.e., was he or she beautiful/handsome, attractive/pretty, cute, or average?) but less than 4% saying it was important to know something about a potential partner's 'Accessories' (i.e., whether a potential partner had piercing, wore glasses, carried a laptop, or had a tattoo). Overall, 13 of the 36 relationship attributes were selected by more than half of the total sample and only five attributes were selected by less than 25%.

Many of the most salient attributes were those having to do with more enduring 'personality' characteristics. What was somewhat surprising was the fact that relatively few

Table 1. *Salience of relationship attributes (N = 388)*

Rank	Attribute number and name		Salience
1.	6	Appearance	79.63
2.	16	Communication style	63.14
3.	32	Time spent together	61.59
4.	28	Self-concept	60.82
5.	17	Personal philosophy	59.79
6.	1	Age	59.79
7.	24	Emotionality	59.27
8.	18	Habits	54.89
9.	19	Life style	52.83
10.	5	Exclusivity	52.57
11.	11	Education	52.31
12.	4	Desired relationship	51.54
13.	22	Outlook	51.54
14.	31	Body care	50.00
15.	12	Gender orientation	48.96
16.	20	Martial status	44.58
17.	21	Physical build	44.58
18.	33	Support	43.29
19.	30	Leisure time	41.23
20.	27	Flirtation style	38.65
21.	23	Life intensity	37.88
22.	29	Hobbies	37.37
23.	35	Social adaptation	36.85
24.	8	Fitness	34.53
25.	26	Action style	33.50
26.	34	Sexual experience	33.50
27.	7	Height	32.98
28.	3	Religion	30.67
29.	2	Ethnicity	27.06
30.	9	Social networking	25.25
31.	15	Group behavior	25.00
32.	14	Income	20.87
33.	25	Privacy	19.84
34.	10	Sports	17.52
35.	36	Music genre	12.37
36.	13	Accessories	3.60

Salience is defined as the percentage of all respondents selecting the attribute as one of their 'top fifteen'. See Appendix A for aspects that correspond with these attributes.

respondents felt it was important to know about demographics. For example, approximately 63% felt it was important to know about a potential partner's 'communication style', 'self-concept', and 'personal philosophy'. And while about 60% also thought it was important to know about a potential partners 'age', 52% felt it was important to know about a potential partner's 'educational level', 45% were concerned about a potential partner's 'marital status', 31% wanted to know about a potential partner's 'religion', 27% felt 'ethnicity' was important, and only 21% felt it was important to know something about a potential partner's 'income'.

In summary, there was only strong agreement on 'appearance' but every one of the attributes considered was important to someone. An additional question is whether the selection of what is (or is not) important varies as a function of gender or ethnicity.

Salience by demographic groups

In order to investigate this question we calculated the attribute salience values for different gender and ethnic groupings (here salience is defined as the percentage of the specific grouping—males, African-Americans, etc.—who selected the attribute as one of their 'top 15'). Due to the small sample size for Hispanics, we only present data on Caucasian ('White'), African-American ('Black') and Asian-American ('Asian') respondents for the rest of the paper.

Somewhat surprisingly, the correlation between the salience values for the demographic groups was substantial: the correlation between males and females was high ($r = 0.80$) as was the agreement between the three ethnic groups (i.e., Asians agree with both Whites [$r = 0.87$] and African Americans [$r = 0.81$], and Whites and African Americans also agree [$r = 0.78$]).

Table 2 presents the correlations between salience values for each gender/ethnicity group separately. The correlation among females regardless of ethnicity is always more than 0.70. Similarly, the correlation among males is always greater than 0.69. The correlation between genders (of the same ethnicity) ranges from 0.86 (for White females correlated with White males) to 0.59 (Asian females correlated with Asian males and Black females correlated with Black males). Generally speaking then, there appears to be general agreement within both genders, and while White males and females select the same attributes as 'important', African American and Asian males and females appear to be looking at somewhat different attributes in considering who would or would not be a potential romantic partner. For example, White males and females agreed on three of their top five salient characteristics (appearance, emotionality, and self concept), but Black males and females agreed on only one of their top five (appearance).

What is risky? What is attractive?

As described earlier, all aspects from the 'top 15' attributes and aspects from a random sample of five additional attributes were evaluated in two ways: as representing an attractive feature of a potential romantic partner and as representing a potential health risk to the respondent. Table 3 shows the top and bottom 10 aspects in terms of attractiveness and risk for the entire sample.

This sample of young adults are most attracted to someone who is single, between the ages of 18 and 25, and who prefers partners of the opposite sex. They also judge people who are trustworthy, faithful, self-confident, supportive and 'happy' with themselves, non-smokers,

Table 2. *Correlations between salience values by gender and ethnicity (N = 36 for all groups)*

	Correlations between salience values by gender and ethnicity					
	WF	BF	AF	WM	BM	AM
WF	1.0000					
BF	**0.7420**	1.0000				
AF	**0.8189**	**0.7056**	1.0000			
WM	*0.8636*	0.5514	0.6684	1.0000		
BM	0.6925	*0.5901*	0.5383	**0.8028**	1.0000	
AM	0.7381	0.6441	*0.5856*	**0.7727**	**0.6971**	1.0000

Legend: W = white B = Black A = Asian F = Female M = Male. Bold correlations = same gender but different ethnic group. Italic correlations = different gender but same ethnic group.

Table 3. *Ten most/least attractive and ten most/least risky aspects (scale: 1 – 7, 159 aspect items in all)*

Rank	Mean	Attractiveness Rating Item	N
1.	6.53	Single	231
2.	6.35	Trustworthy	239
3.	6.28	Opposite sex gender orientation	237
4.	6.27	18 – 25 years old	267
5.	6.23	Faithful	249
6.	6.15	Happy with myself	274
7.	6.12	Self confident	274
8.	6.11	Non-smoker	255
9.	6.07	Stays fit	198
10.	6.05	Supportive	224
150.	2.66	Hesitant	195
151.	2.49	Doesn't care about fitness	198
152.	2.40	Unfulfilled	274
153.	2.21	36 – 45 years old	267
154.	2.17	Smoker	255
155.	2.14	Pessimistic	240
156.	2.03	Same sex gender orientation	237
157.	1.97	Cleanliness is over-rated	233
158.	1.69	Married	231
159.	1.51	Over 45 years old	267

Rank	Mean	Risk Rating Item	N
1.	5.58	Likes to sexually experiment	255
2.	5.55	More sexual experience, the better	177
3.	5.36	Life is short, we should enjoy it	177
4.	5.31	Bi-sexual orientation	237
5.	5.14	Uses drugs occasionally	255
6.	4.97	Cleanliness is over-rated	233
7.	4.86	Spending exciting nights together	240
8.	4.83	Secretive/mysterious	144
9.	4.83	Smoker	255
10.	4.81	Impulsive	195
150.	2.21	Culture	212
151.	2.21	Non-smoker	255
152.	2.21	Hanging around and relaxing	224
153.	2.20	Trustworthy	249
154.	2.17	Reading	212
155.	2.06	Live cautiously	208
156.	2.05	Drug free	255
157.	1.98	Live responsibly	208
158.	1.97	Faithful	249
159.	1.67	One should save oneself for one's life partner	177

Sample sizes are different for each aspect because only aspects that reflected the 'top 15 attributes' plus five randomly selected additional attributes were evaluated in terms of attractiveness and risk.

and those who stay fit as very attractive. Consistent with this, they see people who are married, over 35 (i.e., 36 – 45 or 46 or older), who prefer partners of the same sex, who are smokers, and who don't care about fitness as least attractive. They also view people who are pessimistic, unfulfilled, hesitant, and who think that 'cleanliness is overrated' as very unattractive.

The scoring of what is or is not attractive is consistent across gender and ethnicity: the average ratings of attractiveness of the 159 aspects are correlated 0.93 for men and women, 0.86 for African Americans and Whites, 0.92 for Asians and Whites, and 0.87 for Asians and African Americans.

The bottom half of Table 3 shows the 10 aspects that define a potential partner as most 'risky' as well as the 10 that make one least 'risky'. In contrast to attractiveness ratings, risk ratings are, on average, considerably lower: while all of the 10 'most attractive' aspects received mean attractiveness scores greater than 6.0, none of the 10 'most risky' had risk scores greater than or equal to 6.0, and only five had mean risk scores greater than 5.0. Thus, while there are many aspects that make a potential romantic partner 'attractive', there are relatively few that indicate that a potential partner may put one 'at health risk', and even these are not seen as 'very strong' indicators of risk. This can best be seen in Fig. 1 which presents the box plots for the mean ratings of risk and attractiveness for the total sample. Note that the Inter Quartile Range (IQR—the middle 50% of the distribution of means) ranges from 3.67 to 5.42 for attractiveness, but only from 2.65 to 3.72 for risk.

The aspects that are viewed as making a person most risky are those that describe sexual behaviors and drug use. More specifically, respondents believed that they are likely to be 'at risk' with a person who is bi-sexual, who uses drugs occasionally, likes to sexually experiment, believes that life is short, thinks that the more sexual experience the better, and who wants to spend 'exciting nights together'. A potential partner is also seen as quite risky if he or she is secretive/mysterious, and believes that 'cleanliness is over rated'. In contrast, a potential partner is seen as presenting little or no risk if he or she is drug free, wants to save him/herself for one partner, lives cautiously, is responsible, faithful, and trustworthy. Potential partners are also viewed as presenting little or no health threat if they are non-smokers, like to read, attend cultural events, and if they prefer 'hanging around and relaxing'.

Similar to the findings concerning attractiveness, there is high agreement on what is or is not risky across gender and ethnicity. The average ratings of the riskiness of the 159 aspects are
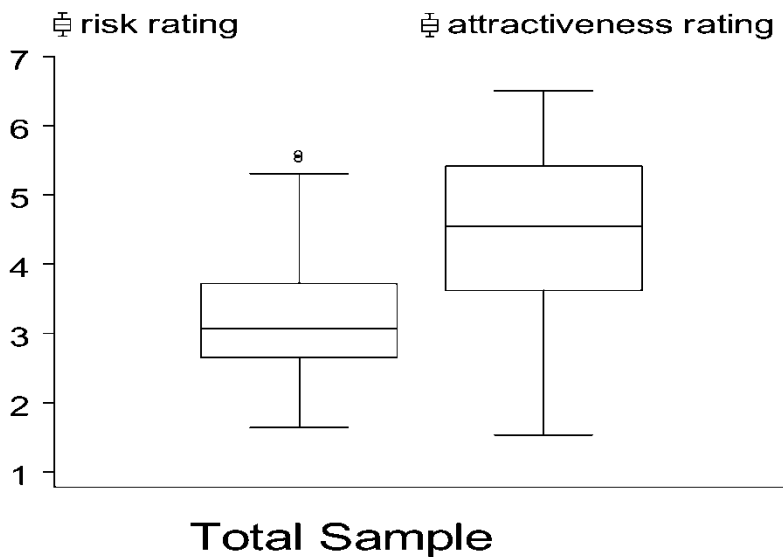

FIG. 1. *Box plots of risk and attractiveness aspect ratings (1–7 scale, 159 aspects were rated).*

correlated 0.95 for men and women, 0.89 for African Americans and Whites, 0.93 for Asians and Whites, and 0.88 for Asians and African Americans.

What is the relationship between attractiveness and risk

Table 3 showed that three of the aspects that made a potential partner most attractive were also among those that made a potential partner least risky (i.e., faithful, trustworthy, non-smoker). Similarly, two that made a potential partner most risky were among those making a partner least attractive (i.e., smoker, believes cleanliness is over rated).

In order to further examine the relation between attractiveness and risk, each aspect was classified as being high (4.5 to 7.0), medium (3.51 to 4.49) or low (1 to 3.5) with respect to both risk and attractiveness. Consistent with the above analysis, 53% of the aspects were rated as highly attractive while only 8% were viewed as highly risky. Table 4 shows the number of aspects falling into each of the nine attractiveness/risk cells. It can be seen that only two aspects were viewed as both highly risky and highly attractive (these are being the life of the party and living in the moment). In contrast, 44% of the aspects were viewed as being highly attractive while also indicating low risk. The statistically significant gamma statistic (an index of association for ordinal measures) of -0.61 shows that across all the aspects there is a negative correlation between mean perceived risk and mean perceived attractiveness.

Discussion

Generally speaking, most of the attributes selected by more than 50% of the respondents are those that provide information about personality, lifestyle, and habits of a potential partner. What was somewhat surprising was the relatively low salience of demographic attributes such as ethnicity, income, and religion. While one could argue that these findings suggest that social desirability may have influenced our respondent's selection of attributes that they felt were important in selecting a romantic partner, it is also possible that these attributes are in fact less important than considerations of a potential partners personality, lifestyle and behavior for university students in a culturally diverse urban environment.

Even if one assumes that social desirability did suppress the relative importance of certain demographic attributes, it does seem clear that at least some of the information that is viewed as most important in selecting a potential partner would probably not be obvious or available on the first encounter. How then do young adults decide whether a potential partner is 'safe' or 'risky'?

Table 4. *Crosstabulation of risk and attractiveness aspect ratings* (N = 159 items)

Risk rating	Attractiveness rating			Total
	High	Medium	Low	
High	2% (2)	4% (4)	6% (7)	8% (13)
Medium	7% (13)	6% (11)	8% (16)	25% (40)
Low	44% (70)	15% (24)	8% (12)	66% (106)
Total	53% (85)	25% (39)	22% (35)	100% (159)

Pearson chi-squared (df = 2) = 27.82. Prob. < 0.0001.
Gamma = -0.61. SE = 0.086. Prob. = < 0.0001.

Although we had expected to find that many young adults relied on apparently 'irrelevant' cues to judge whether a potential partner was a health risk, very few of the 159 aspects considered were rated as particularly risky. While there are over 80 aspects that make one attractive (see Table 4), only 13 aspects seem to provide a clear indication of risk. Of these, two are also seen as highly attractive while seven are viewed as unattractive. However, the greatest number of aspects (44%, $N = 70$) indicate high attractiveness and low risk. In retrospect, it is perhaps not surprising that, given that the attributes we considered were identified through personal ads, over 50% of the attributes were rated as attractive while less than 10% were seen as 'risky'. However, in a subsequent open-ended auxiliary study in which respondents were asked to report the aspects of a potential partner that would put them at risk, we did not identify any new 'risky' aspects that were not included in the present study (Curtis & Trentacoste, 2003). What is also striking is the general agreement between genders and the three ethnicities on the rank ordering of importance ('salience') and on the risk and attractiveness ratings.

Young adults are most attracted to a potential partner who is single, prefers partners of the opposite sex and is trustworthy, faithful, and happy with themselves. They feel most at risk with those who use drugs occasionally, are bisexual, like to sexually experiment, and who believe that the more sex experience the better and that life is short and should be enjoyed. One striking fact about these 'most risky' attributes is that they include the basic elements of standard 'public health warnings' relevant to sexually transmitted infections. In this regard, the health education system seems to be effective for these respondents.

It is also interesting to note that the aspects that are informational about risk are dominated by characteristics that probably do not reflect immediately ascertainable data about the potential romantic partner (drinking, drug use, attitudes toward sexual experimentation, past sexual experience, exclusivity, desired relationship, and social support). Therefore, the use of 'superficial' risk information in partner selection (e.g., appearance) may reflect the realities of the social world because the aspects which may be most likely to provide information about risk are ones least likely to be known during an initial encounter.

But note that we do not find, at the level of individual aspects, that specific aspects defining 'appearance' (see Appendix) are in the top ten of cues that are rated as attractive (see Table 3). This suggests that the emphasis on a generalized 'appearance' concept that is so prominent in other studies (e.g., Dijkstra *et al.*, 2000) may be due to the fact that 'appearance' is rarely presented as one of a set of many possible cues to romantic action. Our results suggest that when appearance-related aspects are presented in a context with other cues, they are not rated as highly attractive as other, less immediately ascertainible, cues to romantic appropriateness.

It does appear that, on average, the more one perceives that a potential partner has an aspect that appears 'risky' the less one is attracted to that partner. But it should be recognized that this latter finding is only correlational and thus, it may also be indicating that the more one is attracted to a person with a 'risky' feature, the less likely one is to view that person as presenting a health risk. For example, the more one is attracted to a person who 'wants to spend exciting nights together' or who 'uses drugs occasionally', the less one is likely to see that person as a threat to their sexual health.

While this study has demonstrated a negative relationship between attractiveness and risk, it does not tell us whether judgments of attraction or risk 'come first'. Equally important, one must ask how physical attractiveness influences the degree to which a given feature is viewed as attractive or risky. That is, if a potential romantic partner is physically 'beautiful' or 'handsome', is one more or less likely to see that person's 'occasional drug use' as risky (or attractive)? Indeed, while the present study was primarily concerned with seeing whether

individual attributes were indicative of risk and/or attraction, predicting how people arrive at a judgment that a given person may put them at risk for HIV and other STD's will require an understanding of the way in which sets of aspects are combined to make overall judgments of riskiness or attractiveness (Fiedler, Walther & Nickel, 1999). Given that people are much more likely to engage in unprotected sex with people they view as 'safe' than with those they view as 'risky', it is important to understand which informational cues are used and how these cues are incorporated into an actual decision concerning the appropriateness of a potential romantic partner.

Acknowledgements

References

AGOCHA, V. B. & COOPER, M. L. (1999). Risk perceptions and safer-sex intentions: Does a partner's physical attractiveness undermine the use of risk-relevant information? *Personality & Social Psychology Bulletin*, *25*(6), 746–759.

BORKENAU, P. & LIEBLER, A. (1995). Observable attributes as manifestations and cues of personality and intelligence. *Journal of Personality*, *63*(1), 1–25.

BROWN, L. K., DICLEMENTE, R. J. & REYNOLDS, L. A. (1991). HIV prevention for adolescents: Utility of the Health Belief Model. *AIDS Education & Prevention*, *3*(1), 50–59.

BULL, S. & MCFARLANE, M. (2000). Soliciting sex on the internet: what are the risks for STD/HIV? *Sexually Transmitted Diseases*, *27*, 545–550.

BULL, S. S., MCFARLANE, M. & RIETMEIJER, C. A. (2001). HIV/STI risk behaviors among men seeking sex with men online. *American Journal of Public Health*, *91*(6), 988–989.

CURTIS, B. & Trentecoste, N. (2003). Social and behavioral characteristics that indicate a high risk romantic partner. Annenberg Public Policy Center, University of Pennsylvania.

DIJSTRA, P., BUUNK, B. & BLANTON, H. (2000). The effect of target's physical attractiveness and dominance on STD-risk perceptions. *Journal of Applied Social Psychology*, *30*, 1738–1755.

DOLLINGER, S. J. (1985). Sagacious judgment via word association. *Journal of Personality & Social Psychology*, *49*(6), 1738–1752.

FIEDLER, K., WALTHER, E. & NICKEL, S. (1999). The auto-verification of social hypotheses: Stereotyping and the power of sample size. *Journal of Personality & Social Psychology*, *77*(1), 5–18.

FISHBEIN, M. & JARVIS, B. (2000). Peterman et al.'s failure to find a behavioral surrogate for STD incidence: What does it really mean? *Sexually Transmitted Diseases*, *27*(8), 452–455.

GERRARD, M., GIBBONS, F. & BUSHMAN, B. J. (1996). Relation between perceived vulnerability to HIV and precautionary sexual behavior. *Psychological Bulletin*, *119*(3), 390–409.

GOLD, R. S., SKINNER, M. J., GRANTS, P. J. & PLUMMER, D. C. (1991). Situational factors and thought processes associated with unprotected intercourse in gay men. *Psychology and Health*, *5*, 259–278.

JARVIS, B. (1998). *MediaLab Research Software, Version 3.0* [computer program]. New York: Empirisoft (www.empirisoft.com).

KELLER, M. L. (1993). Why don't young adults protect themselves against sexual transmission of HIV? Possible answers to a complex question. *AIDS Education & Prevention*, *5*(3), 220–233.

MATICKA-TYNDALE, E. (1991). Sexual scripts and AIDS prevention: Variations in adherence to safer-sex guidelines by heterosexual adolescents. *Journal of Sex Research*, *28*(1), 45–66.

MCFARLANE, M., BULL, S. S. & RIETMEIJER, C. A. (2000). The internet as a newly emerging risk environment for sexually transmitted diseases. *Journal of the American Medical Association*, *284*(4), 443–446.

MONTANO, D., KASPRZYK, D., VON HAEFTEN, I. & FISHBEIN, M. (2001) Toward an understanding of condom use behaviors: a theoretical and methodological overview of Project SAFER. *Psychology, Health Medicine*, *6*(2), 139–150.

PETERMAN, T. A., LIN, L. S., NEWMAN, D. R., KAMB, M. L., BOLAN, G., ZENILMAN, J., DOUGLAS, J. M. JR., ROGERS, J. & MALOTTE, C. K. Project Respect Study Group. (2000). Does measured behavior reflect STD risk? An analysis of data from a randomized controlled behavioral intervention study. *Sexually Transmitted Diseases*, *27*(8), 446–451.

POPPEN, P. J. & REISEN, C. A. (1997). Perception of risk and sexual self-protective behavior: A methodological critique. *AIDS Education and Prevention*, *9*(4), 373–390.

RAO, A. R. & MONROE, K. B. (1988). The moderating effect of prior knowledge on cue utilization in product evaluations. *Journal of Consumer Research*, *15*(2), 253–264.

REISEN, C. A. & POPPEN, P. J. (1999). Partner-specific risk perception: A new conceptualization of perceived vulnerability to STDs. *Journal of Applied Social Psychology*, *29*(4), 667–684.

RHODES, F. & MALOTTE, C. K. (1996). Using stages of change to assess intervention readiness outcome in modifying drug-related and sexual HIV risk behaviors of IDUs and crack users. *Drugs & Society*, *9*(1–2), 109–136.

ROSENSTOCK, I. M., STRECHER, V. J. & BECKER, M. H. (1994). The health belief model and HIV risk behavior change. In R. J. DICLEMENTE & J. L. PETERSON (Eds.). *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 5–24). New York: Plenum Press.

VAN DER VELDE, F. W., VAN DER PLIGT, J. & HOOYKAAS, C. (1992). Risk perception and behavior: Pessimism, realism, and optimism about AIDS-related health behavior. *Psychology and Health*, *6*, 23–38.

VAN DER VELDE, F. W., VAN DER PLIGT, J. & HOOYKAAS, C. (1994). Perceiving AIDS-related risk: Accuracy as a function of differences in actual risk. *Health Psychology*, *13*(1), 25–33.

VON HAEFTEN, I. (1999). *Das Golden Casket Paradigma*. Aachen: Shaker.

WEINSTEIN, N. D. & NICOLICH, M. (1993). Correct and incorrect interpretations of correlations between risk perceptions and risk behaviors. *Health Psychology*, *12*(3), 235–245.

WILLIAMS, S. S., KIMBLE, D. L., COVELL, N. H., WEISS, L. H., NEWTON, K. J., FISHER, J. D. & FISHER, W. A. (1992). College students use implicit personality theory instead of safer sex. *Journal of Applied Social Psychology*, *22*(12), 921–933.

APPENDIX A   Attributes of potential romantic partner and individual aspects

1. Age (18–25, 26–35, 36–45, 46+)

2. Ethnicity (White, African-American, Hispanic-Latino/a, Native American, Asian-American, Other)

3. Religion (Christian, Jewish, Islamic, atheist/agnostic, other)

4. Desired relationship (looking to start a family, long-term relationship, casual relationship, spending exciting nights together)

5. Exclusivity (faithful, trustworthy, open-minded)

6. Appearance (beautiful/handsome, attractive/pretty, cute, average, has a 'nice personality')

7. Height (tall, average, short)

8. Fitness (fitness fanatic, stays fit, trying to be fit, doesn't care)

9. Social networking (life of the party, popular, has a few close friends, solitary/independent)

10. Sports (running, rollerblading/ bicycling, working out, participatory sports, watching sports)

11. Educational degree (high school, some college, college degree, post graduate)

12. Gender orientation (same sex, opposite sex, both sexes)

13. Accessories (piercing, wears glasses, carries a laptop, Cartier watch, tattoos)

14. Income (wealthy, financially secure, average income, fair income)

15. Group behaviour (group leader, takes initiative, team player, flexible)

16. Communication style (quiet, a good listener, conversational, talkative)

17. Personal philosophy (realistic, practical, idealistic, romantic, head in the clouds)

18. Habits (drug free, uses drugs occasionally, non-smoker, smoker, social drinker, likes to sexually experiment)

19. Life style (sophisticated, average, simple, 'rough around the edges')

20. Marital status (single, divorced, widowed, married)

21. Physical build (thin, slender, average build, full figured/husky, athletic)

22. Outlook (optimistic, contemplative, free spirit, pessimistic)

23. Life intensity (in the moment, live life to the fullest, live responsibly, live cautiously)

24. Emotionality (sensitive, reserved, emotionally stable, tough)

25. Privacy (secretive/mysterious, private, open, shares every thought)

26. Action style (impulsive, spontaneous, deliberate, hesitant, takes things as they come)

27. Flirtation style (eye contact, conversation, joking, playing, touching)

28. Self-concept (self-confident, happy with myself, self-conscious, unfulfilled)

29. Hobbies (culture, arts, reading, making music, attending performances, traveling)

30. Leisure time (going out, hanging around and relaxing, nice evenings with my partner, meeting friends)

31. Body care (I go to the spa from time to time, soap and toothpaste is all one needs, I've had some work done, cleanliness is overrated)

32. Time spent together (when there is time, weekends, spending the evenings together, sharing every minute together)

3. Support (autonomous, dependent, supportive, encourages independence in others)

34. Sexual experience (life is short so we should enjoy it, more sexual experience the better, to have sex is something special, one should save oneself for one's life partner)

35. Social adaptation (eccentric, quirky, conventional, traditional)

36. Favourite music genre (Top 40, alternative, electronic/ambient/techno, hip-hop/rap/R&B, Oldies/classic rock, hard rock, country/folk, jazz/classical)