Stepping Away from Evolution: A Study of Heterosexual and Homosexual Mate Preferences and their Link to Society

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Abstract

This study examined the mate preferences of both heterosexual and homosexual males and females to extend previous research, which focused on heterosexual populations, to homosexual populations. The study showed strong support for a model that states that humans prefer evolutionarily relevant mate characteristics in amounts relative to their own personal perceived endowment of the same attributes. By questioning 449 heterosexual and homosexual residents of Ann Arbor, Michigan on their own attributes and the attributes of a potential mate, the study found that both populations supported the "likes attract" model. This provides evidence that regardless of sexual preference, individuals living in the same society follow similar human mate choice models.

Introduction

Biologists and psychologists have examined human mate choice using evolutionary theory and the process of natural selection. Since mate choice affects the genes passed on to future generations, characteristics used in mate choice indicate an evolutionary advantage. However, the evolutionary approach does not seem readily applicable to homosexual relationships. With heterosexual couples, children are the product of both partners' genetic makeup, whereas with homosexual couples, children's genes can be derived from only one partner. Thus, the child of a homosexual couple would not receive the "evolutionary advantage" of mate choice.

Increasing discussion on the lesbian, gay, bisexual, and transgender community has generated questions about the effect of human mate preferences. It is therefore necessary to investigate the similarities and differences between heterosexual and homosexual mate preferences in order to understand the implications of preferences that do not directly affect the process of natural selection. One of the earliest and most influential papers on mate preferences in general was written by Robert L. Trivers.[1] While Trivers addressed the mate preferences of any sexually reproducing species, his ideas are nevertheless useful in assessing the history of human mate preference models. Trivers' study promoted the theory of parental investment – the idea that the biological manner in which both males and females contribute to the reproductive process affects their choice of mate.

Trivers wrote that as females have a limited number of eggs that they can produce, their primary concern is to gain resources for those eggs and future offspring. In contrast, males can fertilize many eggs because of the rapid production of sperm. As a result, Trivers found that males' major concern was gaining access to the maximum number of eggs possible. These differences in reproductive potential lead to differences in parental investment, which in turn lead to a different set of preferred traits for each gender. The study found that "males tend to be limited by their access to fertile females while females are limited to the resources that they need to nourish their offspring."[1] As a result, females generally look for traits such as wealth, status, and family commitment – indicators of their mate's willingness to provide resources for their future offspring. On the other hand, the study found that males prefer aspects such as health, physical

attractiveness, fertility, and sexual fidelity – factors that would affect the male's reproductive success.

To further develop Trivers' model, Alan Feingold wrote that while women can give birth to only a certain number of children, men can inseminate as many women as they choose, with little time investment relative to women.[2] This may suggest something about the intentions of heterosexual males when seeking a mate: do heterosexual males find it less important to be faithful to their mates because they do not have to invest as much time? We may question whether, simply due to biological reasons, men are more likely to have casual relations with many women instead of having an exclusive relationship.[3] Homosexual couples, on the other hand, cannot combine their genes to create offspring using current reproductive technologies. Do homosexuals prioritize fidelity differently than heterosexuals?

Heterosexual Mate Preferences
Following Trivers, other studies have shown the importance of self-perception in determining heterosexual mate preferences. David Waynforth and R.I.M. Dunbar's study examined the "Lonely Hearts" columns – classified ads seeking partners – of four United States newspapers to see what kind of preferences the heterosexuals showed.[4] The study found these newspaper advertisements to be the most telling, as they showed the people's ideal choice, whereas actual relationships could involve a great deal of compromised preferences. The study compared the advertisers' descriptions of themselves with their preferences in mates. The basis of the hypothesis was that the more a subject has to offer, the more he or she can demand in a mate. Waynforth and Dunbar's study supplied a multitude of hypotheses about the preferences of older men, younger women, and financially independent men and women – groups that society perceived as having the most to offer mates. The most interesting finding, however, was that mate preferences were conditional – as women age, their reproductive potential declines, and they demand less in their mates. However, as men age and become more stable in wealth and status, they demand more in their mates. These conditional preferences showed that self-perception is a key factor in heterosexual mate choice.

Anthony C. Little's study on mate choice also indicated a correlation between self-perceptions and specific mate preferences.[5] The study required female subjects to rate themselves on physical attractiveness and then construct the ideal male face for a mate using computer programs. Inherent in this study was the assumption that the females tested were heterosexual. The study found that the self-rated physically attractive females found males with masculine and symmetrical faces to be attractive in a long-term relationship. Little's study suggests that symmetrical and masculine faces are indicators of useful evolutionary genes. Other studies have suggested that facial symmetry shows an ability to resist disease while masculinity of a male's facial structure is indicative of male virility. That self-perceived attractive females showed preferences for these characteristics speaks for the conditionality of mate preference among heterosexual females.

Likes Attract Model
Building upon this research, Peter Buston and Stephen Emlen's study on mate preferences placed all heterosexual preferences within one model.[6] Seeing that preferences were conditional, the study found that mate choice follows a "likes attract" model. This meant that heterosexual males and females found specific traits attractive if they felt that they were themselves well endowed with those traits. The study looked at evolutionarily relevant categories such as physical appearance, wealth and status, family commitment, and sexual fidelity. Buston and Emlen found that participants who rated themselves highly in one of the categories also had a high preference for a high rating in that same category for a potential mate. Elizabeth Epstein and Ruth Guttman also found evidence for similar mate preference models by contending that heterosexuals do indeed seek those who have similar characteristics such as intelligence levels, attractiveness, personality (extroverted/introverted), and socio-cultural status.[7]

Social Forces

With evidence pointing towards the importance of self-perception in mate preferences, one must examine the source of these self-assessments. Several studies have found that the culture in which we live shapes our self-perception and the context in which we place ourselves. A study by Jonathon D. Brown *et al.* placed subjects in various social environments and asked them to rate themselves on physical attractiveness. The findings suggested that individuals changed their self-concept based on the people surrounding them. The results showed that the social forces present in the subjects' environments and the effects of Western culture and society contributed to the molding of the self-concept both positively and negatively.[8] This research leads us to predict similarities in self-perceptions, and therefore mate preferences, of both heterosexuals and homosexuals, as both live in one society.

Homosexual Mate Preferences

While many of these studies have supplied information on heterosexual mate preferences, it is difficult to know if we can apply these ideas to homosexual preferences. Pamela C. Regan's study on the mate preferences of male and female homosexuals provides a background on which to build.[9] Approaching the field from a psychological perspective, Regan found that homosexual males and females differentiated between preferences based on whether they were looking for a short-term sexual partner or a long-term romantic partner. When a group of 80 homosexual males and females were asked about their preferences on the physical, emotional, and social fitness of their mates, their answers varied based on the type of relationship for which they were searching. Physical fitness was preferred in a short-term sexual partner, while the other preferences were looked for in a long-term romantic partner. While this is interesting and provides insight into the mate preferences of homosexuals in general, what is perhaps most useful are the similarities between the findings of this study and that done on heterosexuals.[10] This implies that the mate preferences of homosexuals and those of heterosexuals have the potential to follow the same models.

Additionally, there has been some research done regarding the preferences for attractiveness of heterosexual and homosexual males and females. In one study by Zebulon A. Silverthorne and Vernon L. Quinsey involving homosexual and heterosexual males and females, results showed that there were "different age and sex facial preferences among the four sex-orientation groups and differences in the response to facial pictures of different ages within each of the sex-orientation groups."[11] With this in mind, our study aims to replicate the findings of Buston and Emlen, seen as the most recent research on heterosexual preferences, and to extend the research to homosexual males and females. By looking at the same evolutionarily relevant categories – physical appearance, wealth and status, family commitment, and sexual fidelity – this study discusses the possibility that heterosexuals and homosexuals living in one society follow the same mate preference model.

Methods

We distributed surveys on mate preference and self-perception to both heterosexuals and homosexuals within the University of Michigan campus in Ann Arbor, Michigan. Four-hundred-fifty-two individuals completed the two-part questionnaire. Questionnaires from three individuals were not included in analyses because these individuals failed to complete the self-perception questions. Ninety-five percent of the respondents were in the 17-25 age bracket and five percent were in the 26-50 age bracket.

Surveys were distributed randomly in the center of the University's campus on three separate days. We collected additional surveys by soliciting participants of various campus organizations and attending local campus events. Participants were asked to indicate their age, gender and sexual preference. The questionnaire contained two sections: one on mate preference and the other on self-perception. The mate preference section consisted of twenty questions, each highlighting a different attribute. The twenty attributes were derived from four evolutionarily relevant categories; the categories were wealth and status, family commitment, physical appearance, and sexual fidelity. The respondent was asked to rate the importance of each attribute in a potential partner using a nine point scale (one = not at all important, nine = extremely important.) Each category was represented by five questions spread out within

the mate preference section of the survey. In the section on self-perception, the questionnaire listed twelve attributes, with three from each evolutionary category. Here the respondents rated themselves as potential partners on the same nine point scale (one = low, nine = high.) To analyze the participant's responses we calculated mean scores for overall mate preference (based on 20 items) and the overall self-perception sections (based on 12 items). We also calculated mean scores for each evolutionarily relevant category for mate preference and self-perception sections.

Group	Sample size	F statistic	df	P value	R²	Regression type
Male heterosexuals	171	20.83	170	<0.0001	0.198	linear
Male homosexuals	35	19.87	34	<0.0001	0.375	linear
Male bisexuals	10	51.72	9	<0.0001	0.866	linear
Female heterosexuals	189	109.45	188	<0.0001	0.369	linear
Female homosexuals	23	14.58	22	<0.0001	0.593	second order polynomial
Female bisexuals	21	1.63	20	0.217	0.079	linear

Table 1: Summary table of regressions of overall mate preference score on overall self-perception score for each gender and sexual orientation group.

We analyzed the data using linear and second order polynomial regression analyses; separate analyses were performed for each gender and sexual orientation combination. We tested the hypothesis that the self-perceptions of both heterosexuals and homosexuals would be the basis of the mate preferences of these same individuals. The two different mechanisms we looked at were the "reproductive potentials attract" model and the "likes attract" model. The "reproductive potentials attract" model hypothesizes that one is attracted to a mate that has a similar reproductive potential. Past studies of heterosexuals have indicated that a woman who has a fecundity of "X" degree is attracted to a man with comparable wealth of "X" degree. For example, women who perceive themselves to be on the higher end of the spectrum in terms of physical appearance and sexual fidelity will emphasize the importance of wealth and status and family commitment in a potential long-term male partner. Similarly, men who think that they are on the higher end of the spectrum in terms of wealth and status and family commitment put higher emphasis on physical appearance and sexual fidelity in a long term female partner.

Self-preference scores	Wealth & status	Family commitment	Physical appearance	Sexual fidelity
Wealth & status				
	6.06	26.51	18.63	0.916
	0.0149	<0.0001	<0.0001	0.339
	0.034	0.136	0.099	0.005
	0.186	0.368	0.315	0.073
Family commitment	2.02	94.64	4.01	7.38
	0.156	<0.0001	0.047	**0.007**
	0.011	0.359	0.023	0.042
	0.109	0.599	0.152	0.205
Physical appearance	3.52	10.38	50.44	3.24
	0.062	**0.0015**	<0.0001	0.074
	0.02	0.057	0.229	0.019
	0.143	0.241	0.479	0.137
Sexual fidelity	0.817	41.69	0.036	8.24
	0.367	<0.0001	0.85	**0.005**
	0.005	0.198	0.0002	0.046
	0.069	0.445	0.015	0.216

Table 2: Summary of outcome of linear regressions between categorical self-perception scores and mate-preference scores for all combinations of relevant categories for heterosexual males; light shading indicates predicted associations of "reproductive potentials attract" model while the dark gray shading along diagonal indicates predicted associations of "likes attract" model.

Results

Both male and female respondents who rated themselves highly were more selective in their mate preferences. For both sexes, there was a significant relationship between overall self-perception score and overall mate-preference score. When we analyzed the data by gender and sexual orientation, there were significant relationships between self-perception scores and mate-preference scores for all groups except bisexual women, who were not analyzed further (Table 1). Below, we examine the data further by assessing whether the "reproductive potentials attract" or the "likes attract" model provides a better fit.

If the "reproductive potentials attract" model fits the data, we would expect a significant relationship between the male self-perception score in the wealth and status category and the mate preference score in the physical appearance and sexual fidelity categories. We found that there was a significant relationship between male wealth and status and female physical appearance but not female sexual fidelity (Table 2). In contrast, the "likes attract" model would predict relationships between self-perception scores and mate preference scores in all four evolutionarily relevant categories and that is what we see. Moreover, the R^2 values (which explain how much of the variation in the data is explained by that factor) are higher for the "likes attract" model (Table 2). Thus far, our results match those of Buston and Emlen's study of a college age population in Ithaca, NY.[6] The results for homosexual males matched those for heterosexual males, with the "likes attract" model fitting the data better (Table 3). For

Self-preference scores	Wealth & status	Family commitment	Physical appearance	Sexual fidelity
Wealth & status				
	13.03	5.89	11.94	0.495
	0.001	0.021	**0.001**	0.486
	0.283	0.152	0.266	0.014
	0.532	0.389	0.516	0.122
Family commitment	3.053	45.74	1.41	5.72
	0.089	**<0.001**	0.243	0.023
	0.084	0.568	0.012	0.148
	0.291	0.762	0.203	0.384
Physical appearance	8.13	0.317	16.608	0.17
	0.008	0.577	**0.0003**	0.683
	0.173	0.009	0.335	0.005
	0.445	0.098	0.579	0.072
Sexual fidelity	1.93	0.604	0.003	9.46
	0.175	0.443	0.957	**0.004**
	0.055	0.018	-0.03	0.199
	-0.235	0.134	-0.009	0.472

Table 3: Summary of outcome of linear regressions between categorical self-perception scores and mate-preference scores for all combinations of relevant categories for homosexual males.

bisexual males, there was no support for the "reproductive potentials attract" model but there was support for the "likes attract" model for three out of the four categories (Table 4). There was, however, no relationship between self-perception score on physical appearance and mate-preference score on physical appearance.

When we consider female heterosexuals, we find support for both the "reproductive potentials attract" and the "likes attract" models, however the "likes attract" model explains more of the variation in the data (see higher R^2 values, Table 5). This is in line with Buston and Emlen's study of undergraduates at Cornell University.[6] The data from homosexual females is strikingly different – there is no support for the "reproductive potentials attract" model and the "likes attract" model does not fit the data that well either (Table 6). There are strong relationships between self-perception scores and mate preference scores on family commitment and physical appearance (explaining 67% and 53% of the variation, respectively), but not on the other two evolutionarily relevant categories.

Discussion

Throughout our study of heterosexual and homosexual males and females, we looked for evidence to support previously discussed models. The "reproductive potentials attract" model and the "likes attract" model, discussed

by Buston and Emlen in previous studies, lay out patterns of similarities between individuals' self-perception and their perceptions of potential long term mates. In extending the population studies to include homosexuals, results showed strong support for the "likes attract" model. The "likes attract" model indicates that an individual finds characteristics to be important in a potential mate if he or she perceives himself or herself to be well endowed with those characteristics. Our study found the most evidence to support this model.

The idea of self-perception in mate choice is not a new topic of discussion. Wayneforth and Dunbar found that self-perception was important by examining "Lonely Hearts" advertisements and finding that the more a subject perceives that he or she has to offer, the more he or she can demand in a mate. Little's study furthered this idea of self-perception by finding that women who found themselves to be sexually attractive held preferences for men with purported useful genes. Buston and Emlen found the most evidence for the "likes attract" model and thereby added to the scientific evaluation of self-perception in mate choice. In extending this research to the homosexual community we found support to suggest a correlation between the mate preferences of the five gender and sexual orientation groups. Brown's study stated that individuals living within one society would form similar self-conceptions. Our study was designed to find support for either the "likes attract" or "reproductive potentials attract" models for both the heterosexual and homosexual populations.

Self-preference scores	Wealth & status	Family commitment	Physical appearance	Sexual fidelity
Wealth & status				
	11.903	3.51	1.93	3.13
	0.0087	0.098	0.202	0.115
	0.598	0.304	0.195	0.281
	0.773	0.552	0.441	0.53
Family commitment				
	0.397	32.97	0.982	5.63
	0.546	0.0004	0.351	0.045
	0.047	0.805	0.109	0.413
	0.217	0.897	-0.331	0.643
Physical appearance				
	2.36	0.966	2.771	0.75
	0.161	0.354	0.135	0.412
	0.23	-0.003	0.257	0.086
	0.479	0.328	0.507	0.293
Sexual fidelity				
	1.53	13.22	0.299	30.73
	0.251	0.007	0.6	0.0005
	0.161	0.623	0.036	0.793
	0.401	0.789	-0.19	0.891

Table 4: Summary of outcome of linear regressions between categorical self-perception scores and mate-preference scores for all combinations of relevant categories for bisexual males.

Similar to Buston and Emlen's study, our results showed some evidence to support the "reproductive potentials attract" model. If the male heterosexual population were to follow this model, the individuals would show similar numbers within their self-perceptions of wealth and status and the importance rating of physical appearance and sexual fidelity in a potential mate. While the statistical analysis showed support for the physical appearance category, this did not hold true for the sexual fidelity category. Male homosexuals had similar results - physical appearance fit the "reproductive potentials attract" model, but there were conflicting results for the sexual fidelity category.

Though female heterosexuals showed the strongest support for the "likes attract" model, there was still evidence to support the "reproductive potentials attract" model. Under this model, females who rated themselves highly in the physical appearance category would be expected to similarly rank their potential mates highly in the wealth and status and family commitment categories. Our data supported this hypothesis in addition to supporting the "likes attract" model. Female homosexuals did not fit the "reproductive potentials attract" model.

All gender and sexual orientation combinations showed at least partial support for the "likes attract" model. When we consider heterosexual males, the only evolutionary category that did not provide strong support for the "likes

Self-preference scores	Wealth & status	Family commitment	Physical appearance	Sexual fidelity
Wealth & status	41.12	21.76	43.67	18.35
	<0.0001	<0.0001	<0.0001	<0.0001
	0.201	0.104	0.185	0.089
	0.449	0.323	0.435	0.299
Family commitment	9.85	186.38	6.38	9.63
	0.002	<0.0001	0.012	0.002
	0.05	0.499	0.033	0.049
	0.224	0.707	0.182	0.221
Physical appearance	43.33	20.33	80.71	16.382
	<0.0001	<0.0001	<0.0001	<0.0001
	0.188	0.098	0.301	0.081
	0.434	0.313	0.549	0.284
Sexual fidelity	1.41	8.56	0.145	22.44
	0.236	0.004	0.703	<0.0001
	0.007	0.045	0.0007	0.107
	0.087	0.209	-0.028	0.327

Table 5: Summary of outcome of linear regressions between categorical self- perception scores and mate-preference scores for all combinations of relevant categories for heterosexual females.

attract" model was the wealth and status category. Heterosexual males seemed to follow societal norms in their ratings regarding wealth and status. Although they gave themselves a high rating in the category, they gave their partners a low rating. This supports the notion that men are traditionally responsible for wealth and status. However, all other categories support the "likes attract" model.

With homosexual males, the results consistently followed the "likes attract" model. Support for this model indicates similarities between the heterosexual and homosexual populations coexisting in the same society. Strong evidence supporting the "likes attract" model within the wealth and status category of the homosexual population may indicate a relationship in which one partner is not heavily dependent on the other; we did not see this in the heterosexual male population.

Our results showed strong evidence for the "likes attract" model with the female heterosexual population as well. These results concur with Buston and Emlen's studies of the heterosexual women.[6] Homosexual females did not specifically coincide with one of the two models; however, there was stronger support for the "likes attract" model. Why are there strong relationships between self-perception scores and mate preference scores on family commitment and physical appearance but not on the other two evolutionarily relevant categories? This is a topic for future study.

This study moves away from the "reproductive potentials attract" model and towards the "likes attract" model. This movement is important because it illustrates a shift in mate preference models. Past studies have focused on the perspective that humans were most concerned about maximizing their reproductive success, and therefore, placed the most importance on seeking characteristics in a potential mate that may not have been the most compatible for their personal relationship with each other. Buston and Emlen's formulation of the "likes attract" model modified this view by stating that reproductive success would be maximized not by picking partners with the highest reproductive potential but by picking compatible partners and thus creating a stable relationship that would maximize the number of offspring.

In Western society today, cultural evolution, rather than biological evolution, may be influencing mate choice as people are placing more value on the stability of the pair bond itself instead of on the success of future generations. We can see this in both the heterosexual and the homosexual populations, where partners are making the decision to adopt a child and forego the opportunity to pass on their own genes or choosing not to have children at all. Now that the focus of partners is shifting over to interpersonal relationships, natural selection against individuals who cannot procreate is no longer a limiting factor. The results of this study show that increased emphasis is on seeking

compatibility with a potential mate.

The goal of this study was to look at a population that was not homogenous and included a more representative sample of sexual orientations within our society. Evolutionarily speaking, the homosexual population is unique because mates cannot both contribute genetically to their offspring. This concept leads us to question whether this population has the same mating preferences as the heterosexual population that is ruled by the desire to pass on the most evolutionarily advantageous traits. The support for the "likes attract" model within the homosexual male population speaks for the argument that sexual preferences run along societal lines. Even within the female homosexual population (the category that showed the least support for the "likes attract" model), we still found that the "likes attract" model is applicable to a certain degree. From this, we can acknowledge that members of our society assess themselves and their potential mates in similar ways regardless of sexual orientation.

Self-preference scores	Wealth & status	Family commitment	Physical appearance	Sexual fidelity
Wealth & status	0.008	6.46	2.93	0.263
	0.93	0.02	0.104	0.61
	0.0004	0.264	0.14	0.014
	0.021	0.514	0.374	0.12
Family commitment	0.062	37	3.22	0.165
	0.806	<0.0001	0.089	0.698
	0.003	0.673	0.152	0.009
	0.059	0.82	0.39	-0.095
Physical appearance	3.89	5.84	20.06	0.053
	0.064	0.027	0.0003	0.821
	0.18	0.25	0.527	0.003
	0.422	0.495	0.726	0.034
Sexual fidelity	0.167	1.51	0.733	2.71
	0.687	0.235	0.403	0.117
	0.009	0.077	0.039	0.13
	0.96	0.278	0.198	0.362

Table 6: Summary table of outcome of linear regressions between categorical self-perception scores and mate-preference scores for all combinations of relevant categories for homosexual females.

Although this study replicates many of the procedural methods used in Buston and Emlen's research, certain limitations may have hindered our results. While distributing surveys in the center of the University, researchers "recruited" random participants by asking for their participation in our study. It is possible that those who chose to go forth and fill out the questionnaire differed in personality from those who refused, which would result in a confounding factor. Furthermore, in order to obtain a greater homosexual and bisexual response, researchers recruited participants at a gay pride rally where individuals were celebrating their sexuality *en masse*, singing, yelling, and uniting. A multitude of studies have indicated that individuals oppressed through race, gender, sexuality etc. do indeed display lower levels of self-esteem and an increased likelihood for depression. An environment such as the rally may have temporarily heightened self-perception responses, again confounding the data. Another possible shortcoming of the study is the potential lack of a correlation between what an individual lists as his or her preferences and the way he or she actually chooses a mate in reality. Though this is primarily a study on mate preferences and not on mating patterns, this limitation could affect some of the conclusions.

Our results lead to interesting speculations regarding mate preferences and societal influence. If performed again, it would be ideal to obtain greater sample populations of homosexual and bisexual participants in order to have a more accurate representation of all sexual orientations. The next step for further research would be to discern why our results generally followed the "likes attract" model and research which prevalent factors in society are responsible for shaping our thoughts and perceptions regardless of sexual orientation. Though we may speculate

about this, extensive research would have to be done in order to provide concrete support. In order to grasp fully how Western civilization influences its inhabitants, the study would be replicated not only in our society but also in other cultures as well, thereby providing a multicultural framework for researchers and readers alike.

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