Genetic Similarity in Male Friendships

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To test further the hypothesis that people prefer genetic similarity in others, 76 long-term male friendship dyads ranging in age from 18 to 57 were recruited from the community by advertisements. On blood antigens measured at 10 loci across 6 chromosomes, friends were found to be genetically more similar to each other than to randomly paired couples from the same sample. Moreover, their similarity to each other was most marked on the more genetically influenced of items from sets of attitudinal and personality, but not anthropometric assessments. These results parallel those from studies of marriage partners and sexually interacting couples. Together they provide support for the hypothesis that genetic similarity helps to mediate human relationships.

KEY WORDS: Altruism; Friendships; Kin-selection; Sociobiology.

SOCIAL PREFERENCES

Human social behavior appears to be more genetically influenced than was previously thought to be the case, with many social choices occurring because in the evolutionary past they have been reproductively adaptive. Altruism to kin and attribute preference in mates are illustrative (Buss 1989; Fletcher and Michener, 1987). One of the many guiding influences is the degree of genetic similarity between the participants (Rushton, in press [a]).

Building on the work of Hamilton (1964), Dawkins (1976), Thiessen and Gregg (1980) and others, Rushton et al. (1984) proposed a general theory of attraction and liking by extending the idea of kin selection and postulating that people detect genetic similarity in others in order to give preferential treatment to those most similar. Although in some cases genetic opposites may attract, and much placement occurs for purely environmental reasons, it is fairly well established that friendships, like marriages, are based on

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similarity. Resemblance in both types of partnership have been found for such characteristics as age, ethnic background, socioeconomic status, physical attractiveness, religion, social attitudes, level of education, family size, IQ, and personality (Buss 1985; Epstein and Guttman 1984; Rushton et al. 1984; Thiessen and Gregg 1980). The median correlation between spouses for standardized IQ measures, for example, averaged over 16 studies involving 3,817 pairings is 0.37 (Bouchard and McGue 1981). Correlations tend to be higher for opinions, attitudes, and values (0.40–0.70) and lower for physical characteristics, personality traits, and personal habits (0.02–0.30).

Several tests of the "genetic similarity theory" formulation have been conducted on heterosexual relationships. Using blood antigen analyses from nearly 1,000 cases of disputed paternity, Rushton (1988) found that degree of genetic similarity within pairs significantly predicted 1) whether the pair was sexually interacting or randomly generated from the same sample, and 2) whether the pair produced a child together or not. Seven polymorphic marker systems (ABO, Rhesus [Rh], P, MNSs, Duffy [Fy], Kidd [Jk], and HLA) at 10 loci across 6 chromosomes were examined in a sample limited to people of North European appearance (judged by photographs kept for legal identifications). Sexually interacting couples were found to share about 50% of measured genetic markers, partway between mothers and their offspring, who shared 73%, and randomly paired individuals from the same sample, who shared 43%. In the cases of disputed paternity, genetic similarity predicted whether the male was the true father of the child; males not excluded from paternity were 52% similar to their partners whereas those excluded were only 44% similar. These blood antigen similarities presumably arise as a result of some form of breeding population heterogeneity perhaps related to personality and cognition (Eysenck 1982) or socioeconomic status (Beardmore and Karimi-Booshehri 1983). However the results do demonstrate that, *in effect*, successful human mating often follows lines of genetic similarity.

Other data suggest that genetic influence on mate choice is particularly fine-tuned because, within sets of homogeneous attributes, spousal similarity is most pronounced on traits of high rather than low heritability. Several studies have found positive correlations between spousal similarity scores and genetic influence estimates across a variety of anthropometric, cognitive, and personality characteristics (Rushton and Nicholson 1988; Rushton and Russell, 1985; Russell et al. 1985). Rushton and Nicholson (1988) found these observations to be robust in that estimates of genetic influence calculated in one population (e.g., Japanese-Americans in Hawaii) predicted assortative mating coefficients in others (e.g., European-Americans living in California).

The present study extends this research to the domain of friendships, for these also appear to be formed on the basis of similarity. This holds for similarity as perceived by the friends and for a variety of objectively measured characteristics including activities, attitudes, needs, and personality

(Berscheid 1985; Thiessen and Gregg 1980). Moreover, in the experimental literature on who likes whom and why, one of the most influential variables is perceived similarity. Apparent similarity of personality, attitudes, or any of a wide range of beliefs has been found to generate liking in subjects of varying ages and from many different cultures (Berscheid 1985; Byrne 1971).

One advantage thought to accrue to similarity in close relationships is increased altruism (Krebs and Miller 1985; Rushton 1980). For example, Stotland (1969) had subjects observe another person who appeared to be receiving electric shocks. When Stotland manipulated the subjects' beliefs about similarity to that person, perceived similarity was correlated with reported empathy as well as physiological skin conductance measures of emotional responsiveness. Krebs (1975) has found that apparent similarity not only increases physiological correlates of emotion such as skin conductance, vasoconstriction and heart rate, but also the willingness to reward the victim. In young children, the frequency of social interactions between friends corresponds closely to the frequency with acts of altruism between them (Strayer et al., 1979).

With friends, data already exist that the tendency to choose similar others is genetically influenced. In a study of delinquency in 530 adolescent twins by Rowe and Osgood (1984), path analysis revealed that not only was antisocial behavior about 50% heritable, but that the correlation of 0.56 between the delinquency of an individual and the delinquency of his friends was mediated genetically; that is, students genetically disposed to delinquency were also genetically inclined to seek each other out for friendship. In a study of 396 adolescent and young adult siblings from both adoptive and nonadoptive homes, Daniels and Plomin (1985) found that genetic influences were implicated in choice of friends: Biological siblings were more similar to each other in the type of friends they had than were adoptive siblings.

To test further whether friends are more similar to each other genetically than they are to an average person and whether, like spouses, their resemblance is most marked on the more genetically influenced components of shared traits, we carried out a study using blood typing and differential heritability estimates. The methodologies parallel those described in the studies on heterosexual partners (Rushton 1988; Rushton and Nicholson 1988).

METHOD

Subjects and Procedures

From the general community, 76 long-term, nonrelated, nonhomosexual male friendship pairs of European Ancestry ranging in age from 18 to 57 were recruited by advertisements; the friendships had to have existed for at least 1 year. A 24-hour answering machine collected calls throughout the study. During the subsequent callback, the respondent's age, sex, name, and hours of availability were ascertained and details of the study provided. Potential subjects were told that the study was to find out the ways in which friends "are different and similar to each other." Many callers were eliminated because of inappropriate duration of friendship, age, fear of donating blood, or problems of scheduling. Testing sessions were typically arranged for one evening every second week over a 4-month period, with from 5 to 10 dyads in attendance, a limit necessitated by the need to coordinate with the blood testing service.

At the testing session, each subject was given a package containing consent forms and questionnaires assessing biography and perceptions of the friendship, as well as of social attitudes and personality (Chan 1986). Friends were required to sit at different tables and to complete the questionnaires independently during a 3-hour session. During this time, each subject was taken aside, and anthropometric variables were assessed and blood samples drawn. Upon completion, each subject was debriefed and paid a fee of $15.00 Canadian.

Measures

Biography and friendship questionnaires. These obtained information about the respondent's level of education, occupation, and perception of the friendship, including the degree of mutual altruism and intimacy.

Social attitude assessment. The Wilson–Patterson Attitude Inventory (Wilson 1975, 1985; Wilson and Patterson 1968), consisting of the 50 "catch-phrase" items shown in Table 1, to which respondents rated their agreement by circling "yes," "?," or "no," provided a total Conservatism score by weighting odd-numbered items " + 1" and even-numbered items " − 1." This test has been shown to be relatively free of acquiescent and social desirability response sets, to demonstrate test-retest reliabilities of 0.80 to 0.96 over 3-month time periods, and to differentiate "known groups" of conservatives and liberals in several countries (Wilson 1985).

Personality assessment. Ninety items from the Eysenck Personality Questionnaire (Eysenck and Eysenck 1975) provided scores for the Extraversion (E), Neuroticism (N), Psychoticism (P), and Lie (L) Scales. The Personality Research Form—E (Jackson 1984), a well-standardized omnibus 352-item inventory, provided information on 22 other scales, such as Aggression, Nurturance, Affiliation, and Order. Twenty 7-point rating scales measured the respondent's self-ratings on 20 of these same traits.

Anthropometric assessment. Following established anthropometric definitions and procedures (Chan 1986), the 13 physical measurements shown in

Table 1. Heritability Estimates and Similarity Scores Between Friends on Conservatism Items

Item	Heritability Estimate	Friendship Similarity Score	Test Retest Reliability	Similarity Score Corrected for Reliability	Similarity Score Corrected for Age Education and Occupation
1. Death penalty	0.51	0.28	0.87	0.30	0.38
2. Evolution theory	—	0.08	0.95	0.08	0.20
3. School uniforms	—	0.20	0.99	0.20	0.42
4. Striptease shows	—	0.13	0.97	0.13	0.24
5. Sabbath observance	0.35	0.08	0.91	0.08	0.09
6. Hippies	0.27	0.03	0.97	0.03	0.15
7. Patriotism	—	0.10	0.89	0.11	0.13
8. Modern art	—	0.02	0.93	0.02	0.09
9. Self denial	0.28	0.08	0.79	0.09	0.12
10. Working mothers	0.36	0.07	0.83	0.08	0.13
11. Horoscopes	—	0.23	0.92	0.24	0.20
12. Birth control	—	0.04	−0.01	0.00	0.19
13. Military drill	0.40	0.10	0.96	0.10	0.22
14. Coeducation	0.07	−0.05	0.74	−0.06	−0.05
15. Divine law	0.22	0.25	0.82	0.28	0.20
16. Socialism	0.26	0.08	0.83	0.09	0.14
17. White superiority	0.40	0.22	0.68	0.27	0.11
18. Cousin marriage	0.35	0.04	0.89	0.04	0.24
19. Moral training	0.29	0.07	0.77	0.08	0.16
20. Suicide	—	0.08	0.86	0.09	0.08
21. Chaperones	—	0.00	0.94	0.00	0.11
22. Legalized abortion	0.32	0.13	0.96	0.13	0.29
23. Empire building	—	0.02	0.85	0.02	0.05
24. Student pranks	0.30	−0.02	0.88	−0.02	0.07
25. Licensing law	—	−0.20	0.85	−0.22	−0.13
26. Computer music	0.26	0.02	0.91	0.02	0.16
27. Chastity	—	0.00	0.76	0.00	0.13
28. Fluoridation	0.34	0.08	0.86	0.09	0.04
29. Royalty	0.44	0.15	0.92	0.16	0.16
30. Women judges	0.27	0.03	1.00	0.03	0.08
31. Conventional clothes	0.35	0.31	0.83	0.34	0.29
32. Teenage drivers	0.26	0.02	0.78	0.02	0.20
33. Apartheid	0.43	0.14	0.69	0.17	0.10
34. Nudist camps	0.28	0.08	0.85	0.09	−0.09
35. Church authority	0.29	0.08	0.86	0.09	0.21
36. Disarmament	0.38	0.07	0.96	0.07	0.19
37. Censorship	0.41	0.03	0.81	0.03	0.10
38. White lies	0.35	0.06	0.76	0.07	−0.01
39. Caning	0.21	0.14	0.83	0.15	0.11
40. Mixed marriage	0.33	0.25	0.79	0.28	0.29
41. Strict rules	0.31	0.25	0.81	0.28	0.19
42. Jazz	0.45	0.42	0.77	0.48	0.40
43. Strait jackets	0.09	0.00	0.85	0.00	0.00
44. Casual living	0.29	0.18	0.63	0.23	0.55
45. Learning Latin	0.26	0.03	0.97	0.03	0.10
46. Divorce	0.40	0.03	0.92	0.03	0.09
47. Inborn conscience	—	0.20	0.70	0.24	−0.11
48. Colored immigration	—	0.06	0.88	0.06	0.10
49. Bible truth	0.25	0.30	0.95	0.31	0.47
50. Pajama parties	0.08	0.08	0.91	0.08	0.24

Table 2 Estimates of Genetic Influence and Similarity Scores Between Friends and Random Pairs on Anthropometric Measures

Scale	Estimate of Genetic Influence	Friendship Similarity Score	Random Pairs Similarity Score
Height	0.82	0.09	−0.05
Biliac	0.73	0.20	−0.09
Midfinger length	0.80	0.10	0.00
Neck circumference	0.71	0.14	0.01
Wrist circumference	0.68	0.14	−0.07
Upper arm (relaxed)	0.50	0.13	0.03
Upper arm (contracted)	0.50	0.15	0.01
Calf circumference	0.46	0.00	−0.02
Ankle circumference	0.60	0.23	−0.05
Upper arm (length)	0.68	0.13	−0.13
Forearm (length)	0.66	0.07	0.01
Whole arm (length)	—	0.08	−0.01
Weight	0.64	0.14	−0.02

Table 2 were taken from the subjects using specialized equipment for the purpose. The left side of the body was measured when a choice was necessitated. These data were gathered after special training by a specialist from the Department of Physical Education.

Blood test. A 12–14-milliliter blood sample was drawn by a registered medical technologist and transported that same evening to Serological Services Limited, a company based in Toronto, Canada, offering blood testing and legal testimony in cases of disputed relationships such as paternity. All analyses were performed within 24 hours. The percentage of similarity was estimated for 10 blood loci using 7 polymorphic marker systems (ABO, Rhesus (Rh), P, MNSs, Duffy (Fy), Kidd (Jk), and HLA) across 6 chromosomes for both 76 friendship pairs and an equal number of randomly paired individuals from the same sample. In cases of paternal dispute, these markers are sufficient to provide a 95.00%–99.75% confidence relating of inclusion (Bryant 1980) and to distinguish reliably between fraternal twins raised in the same family (Pakstis et al. 1972). They provide a less precise but still useful estimate of genetic distance among unrelated individuals. Following pilot studies and their proven use in differentiating other types of relationship (Rushton 1988), the same scoring procedures were employed here.

Estimates of genetic influence. Many of the measures used were explicitly chosen because estimates had been calculated of the degree of genetic influence on the various components. For example, 36 heritabilities were available with respect to 50 social attitude items (see Table 1) from 3,810 Australian twin pairs (Martin et al. 1986). For 90 items from the Eysenck Personality Questionnaire, two independent sets of heritability estimates were available for a total of 81 of the items, one set from 3,810 Australian twin pairs (Jardine 1985), and the other set from 627 British twin pairs (Neale et al. 1986). These intercorrelated $r = 0.44$ ($p < 0.001$) and were aggregated to form a more reliable composite. For 13 anthropometric measures, estimates of genetic influence were available for 12 of them (see Table 2) based on midparent-offspring regressions from 125 families in Belgium (Susanne 1977).

Examples of the varying heritabilities include the following: 51% for attitude to the death penalty versus 25% for attitude to the truth of the bible (see Table 1); 41% for having a preference for reading versus 20% for having a preference for many different hobbies (Neale et al. 1986), and 80% for midfinger length versus 50% for upper arm circumference (see Table 2). Unlike the estimates of genetic influence calculated for relationships between spouses based on parent–offspring regressions reported in previous studies (e.g., Rushton and Nicholson 1988), in the current study heritabilities calculated from the comparison of monozygotic and dizygotic twins raised together are the measures primarily used.

Control group and procedures. Since the individuals in our sample might be considered atypical and somewhat similar to each other simply as a result of volunteering for the study, several "random control groups" were generated. For demographic, attitude, personality, and anthropometric variables, five sets of random dyads were generated via a random number table. Each dyad's results were added and an average taken and used for comparative purposes. For the blood measures, random dyads were selected by an individual who had no knowledge of the subjects, and then both random and friendship pairs were intermixed and sent to Serological Services, as discussed previously. In addition, for the Wilson–Patterson Attitude Inventory and the Eysenck Personality Questionnaire, test–retest data were gathered from psychology undergraduates over a 2-hour time period filled with interpolated activity, thus enabling us to estimate the differential item reliabilities and so control for them using partial correlations. Finally, because measures of sociodemographic similarity were obtained, these could be partialled out of the analysis to control for the effects of social, educational, and geographical propinquity.

RESULTS

Across the measures, close friends are found to be significantly more similar to each other than to randomly paired individuals from the same sample. Pearson product-moment correlations show that compared to random pairs, friendship dyads are more similar in age (0.64 versus −0.10, $p < 0.05$), education (0.42 versus 0.11, $p < 0.05$), occupational status (0.39 versus −0.02, $p < 0.05$), conservative attitudes (0.36 versus −0.02, $p < 0.05$), mutual feelings of altruism and intimacy (0.32 versus −0.04 and 0.18 versus

Table 3. Percentage of Similarity Based on 10 Blood Loci in Friends and Random Pairs

Relationship	Number of Pairs	Mean	Standard Error	Standard Deviation	Range	95% Confidence Interval for Mean
Friendship pairs	76	54.01	1.38	12.02	22.20–79.50	51.26–56.76
Random pairs	76	48.17	1.26	10.94	22.20–71.70	45.67–50.67

−0.08, $ps < 0.05$), 13 anthropometric variables (mean = 0.12 versus −0.03, ns), 26 personality scale scores (mean = 0.09 versus 0.00, ns), and 20 personality self-rating scores (mean = 0.08 versus 0.00, ns). Although these latter similarities are very small in magnitude, significantly more are positive than could be expected by chance (13/13 of the anthropometric, 18/26 of the personality scale scores, and 15/20 of the personality self-rating scores, all $p < 0.05$, binomial sign test). It should be noted that these relative magnitudes are parallel to the between-spouses similarities (Buss 1985; Epstein and Guttman 1984; Rushton et al. 1984; Thiessen and Gregg 1980).

Blood tests. With the use of a blind scoring procedure, the percentage of similarity between the friendship pairs, as well as between an equal number of randomly paired individuals from the same sample calculated over the 10 loci, are presented in Table 3. Whereas friends were found to be 54% similar on these genetic markers, the random pairs were found to be only 48% similar. A t-test demonstrates these percentages to be significantly different from each other ($t(150) = 3.13$, $p < .05$).

Genetic similarity detection between friends. To examine whether friends assorted most on the more heritable components of the traits, Pearson product-moment correlations were calculated between the estimates of item heritability and those of similarity, partialling out, where possible, the confounding effect of differential item reliability. For the 36 conservatism items (see Table 1), the correlation of the estimates of genetic influence and between-friend similarity was $r = 0.40$ ($df = 34$, $p < 0.01$, one tailed); this relationship was not altered when corrected for test-retest reliability or when similarity on a composite of age, education, or occupational status was partialled out ($r = 0.40$, $p < 0.01$; $r = 0.32$, $p < 0.05$, respectively). For the 81 personality items, the correlation was $r = 0.20$ ($df = 79$, $p < 0.05$, one tailed), also not altered when correcting for test-retest reliability or socioeconomic similarity. For the 12 anthropometric variables, however, the correlation was not significant ($r = 0.15$).

Relation between blood tests and other indices of similarity. To examine whether the degree of genetic similarity measured by blood tests was related to overt phenotypic characteristics, we calculated correlations between the friends' blood similarity score and the difference between the friends' scores on the personality, social attitudinal and anthropometric measures. Only 40/

90 of the personality and 22/50 of the attitudinal items were in the predicted direction, whereas 13/13 of the anthropometric assessments were in the direction predicted.

DISCUSSION

The evidence presented here is compatible with the view that friends choose each other partly on the basis of genetic similarity. The blood antigen data clearly show that, on average, friendship dyads are genetically more similar to each other than to random pairs from the same sample. The fact that similarity is greater on the more genetically influenced components of traits than on the environmentally influenced ones suggests that positive assortment is genetically mediated. This viewpoint is supported by the data from both the attitude and personality domains but not from the anthropometric. Confidence in the strength of these relationships is increased when it is noted that they, unlike many earlier studies with spouses, are based on heritabilities generalized from one sample (e.g., Australian twins) to another (i.e., Canadian friends). It is usual to consider estimates of heritability to be properties of particular populations and not to be highly generalizable (Falconer 1981, cf. Rushton in press [b]). Given this stringent between-sample rather than within-sample test of the hypothesis, it seems reasonable to conclude, at the very least, that the hypothesis that friends choose each other partly on the basis of genetic similarity warrants further investigation.

Objections and alternative hypotheses to the account presented can certainly be raised. For example, it might be suggested that "sample heterogeneity" is accounting for the findings and that friendship similarities are due entirely to the effects of social stratification (i.e., finding oneself in the same location because of similar education and social background) rather than preferential assortment. Although the general catchment area and obtained sample is, by many standards, ethnically and socioeconomically homogeneous (North European and middle-class), the data did show that social stratification occurs: Friendship dyads were significantly more similar for age ($r = 0.64$), education ($r = 0.42$), and occupation ($r = 0.39$) than were the random pairs. Moreover, investigators such as Beardmore and Karimi-Booshehri (1983) have found that blood groups are stratified by socioeconomic status. In Britain, for example, blood type A is found to occur more frequently in SES 1, the highest group (57% of the time) than in SES 5, the lowest group (41% of the time).

To test the stratification hypothesis, we calculated within-pair differences in age, education, and occupation and did not find them to be significantly correlated with friends' blood similarity scores, as they should have been if the stratification hypothesis was correct. Nor was it found that such socioeconomic similarity altered the correlation between friendship–similarity and the estimates of genetic influence. It should also be noted that although evidence does show that stratification effects apply at a *single* gene locus (e.g., Beardmore and Karimi-Booshehri 1983), in our study we aggregated across 10 loci using 7 polymorphic marker systems on 6 different chromosomes to assess similarity. As mentioned earlier, such blood group differences provide a greater than 95% confidence rating for inclusion in cases of paternity dispute (Bryant 1980) and distinguish reliably between fraternal twins raised in the same family (Pakstis et al. 1972). On the basis of these preliminary attempts to test the social stratification hypothesis, then, these blood group similarities have not been explained.

With respect to the heritability analyses, one possible artifact could have been the differential reliability of the test items. If some had particularly low reliabilities, these would have reduced the estimate of both genetic influence and between-friend similarity, thus giving rise to a spurious correlation between them. For this reason, we piloted our scales, calculated item reliabilities, and computed the correlations both with and without correcting for item reliability, efforts that made no difference to the predicted positive correlation. Similar observations have been made repeatedly in our previously reported studies of spouses, where quite substantial differences in item or scale reliabilities sometimes occurred. Yet estimates of genetic influence were consistently found to predict similarity scores across quite disparate samples (Rushton and Nicholson 1988; Rushton and Russell 1985; Russell et al. 1984).

Finally, it is possible to suggest that because friends knew their data would be matched, in some way they may have tried to create more similarity than actually existed through all the usual experimenter bias, social desirability, etc., reasons. This, however, would necessitate that the friend's knew which items were the most heritable and would try to match each other better on those items than on others. This seems implausible, and, of course, demand characteristic type artifacts could not apply to the data from the blood tests. Taken together, therefore, the evidence presented in this report, derived from the study of male friendships, joins data already assembled from the study of spouses and sexually interacting couples to suggest that social preferences are, in part, genetically influenced.

Some confusion may result from a mistaken belief that heritability is being equated with importance and that more assortment should therefore occur on physical features than on social variables because the former are more heritable. We have consistently considered it necessary, however, to examine the relation between similarity scores and degrees of genetic influence within homogeneous data sets rather than comparing across heterogeneous traits. First, this presumably holds more constant the (unknown) number of genes involved (hair texture may be highly heritable but may involve only one or two genes; a behavioral item may be less heritable, but it may involve more genes), and the theory predicts that it is overall similarity that matters. Second, since sequential filtering may be involved in the formation of interpersonal relationships, it may be best to make the comparisons at the same level.

We can only conjecture why the positive results emerged most on the blood tests and items of social behavior, which were unrelated to each other, and least on the anthropometric measures, which were related to the blood similarities. One possibility is that the assessments of genetic influence available to us for these variables, based on midparent–midoffspring regressions in 125 Belgian families (Susanne 1977), were less reliable than those generated from nearly 4,000 adult twin pairs for the other variables.

Some readers may find it surprising that heritabilities have been calculated for so many aspects of personality and social attitudes. Behavioral genetic research has been proceeding apace, and both twin and adoption designs now converge in showing moderate to substantial effects of genetic influence on the transmission of both socially undesirable traits such as crime, obesity and schizophrenia, and more normative characteristics such as personality, vocational interests and value systems (Loehlin et al. 1988). In fact, Martin et al. (1986), the authors of the heritability study of social attitudes, felt confident enough about the reliability and validity of their measuring instrument, theoretical model, estimation techniques, and sample sizes (3,810 pairs of adult Australian twins plus a secondary analysis of 825 pairs of British twins) to predict the correlations they expected would occur with respect to between-person similarities in Conservatism scores in other relationships if their model was accurate: 0.00 between foster parent and adult foster child; 0.52 between parents and children; and 0.62 for separated monozygotic twins. Recently, a study of 44 monozygotic twins reared apart has confirmed Martin et al.'s last prediction, showing an intraclass correlation of 0.53 on a scale measuring traditional moral and family values (Tellegen et al. 1988). Ultimately, more powerful techniques based on DNA sequencing will be available to test the genetic similarity theory perspective on social preferences.

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