

# Can You Match These Friends? A Test of Genetic Similarity Theory

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## Background

Genetic similarity theory proposes that in selecting social partners, people choose individuals who resemble themselves at the genetic level. According to this theory, people form a vested interest in the welfare of their kin and similar others to foster the reproduction of shared genes (Rushton, 1989a, 1989b, 2005).

In support of Genetic Similarity Theory, same-sex friends show moderate similarity in attitudes and values, social skills, personality, and anthropometric characteristics such as height and weight (e.g., Tolson & Urberg, 1993). Limited research suggests that friends might also be similar in level of physical attractiveness (Cash & Derlega, 1978). Using blood antigen measurements, researchers have even documented that male friends are more similar to each other genetically than are randomly contrived male friendship pairs (Rushton, 1989b).

Genetic resemblance can manifest itself through attitudes and values, personality, physical characteristics, and attractiveness, because these attributes are under moderate to strong genetic influence. If people establish enduring ties – friendships – with those who resemble themselves genetically, then friends should be perceived similarly enough to be matched by observers who are blind to their friendship status. We designed our study to test this hypothesis. We predicted that judges would be able to match friends at above-chance levels. In addition, we expected that judges would match in accordance with similar levels of attractiveness and apparent attention to appearance.

## Method

Our primary participants were 12 female and 12 male friendship pairs from a mid-sized regional Midwestern university. Females had been friends for an average of 5.0 years, and males for 4.6 years.

To compose the stimuli sets, the lead investigator photographed all participants twice – first a facial shot and then a full-body shot – at the same location, from a set distance. Researchers used the pictures to create 12-slide PowerPoint shows for judges to view. Half of the slideshows contained facial shots; the other half contained full-body shots. On each slide, two of the four pictures were members of a friendship pair; the remaining two pictures were other, randomly selected “non-friend” targets to serve as distracters. On every version of the slide show, each of the first six slides showed four females and asked, “Which two are friends?” The remaining six slides each showed four males and asked the same question. No slideshow displayed the same person twice, and researchers arranged the pictures in randomized sequences.

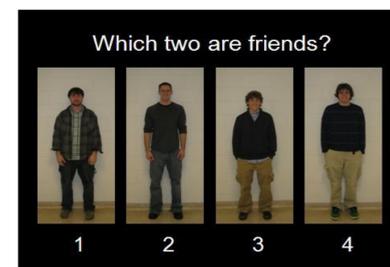
Our first sample of judges, 136 female and 90 male undergraduates, rated the pictures for physical attractiveness and apparent attention to appearance. At least seven male raters and 15 female raters judged each picture. Inter-rater reliabilities were well above threshold.

Our second sample of judges, 228 female and 104 male undergraduates, completed the friend-matching task. Each judge viewed one of version of the 12-slide PowerPoint show. For each slide, the judge had a 1 in 6 chance, or .1667 probability, of matching the two friends. If friends do not resemble one another beyond chance levels, then the typical friendship pair should be matched by 16.67% of judges.

## Sample Stimuli

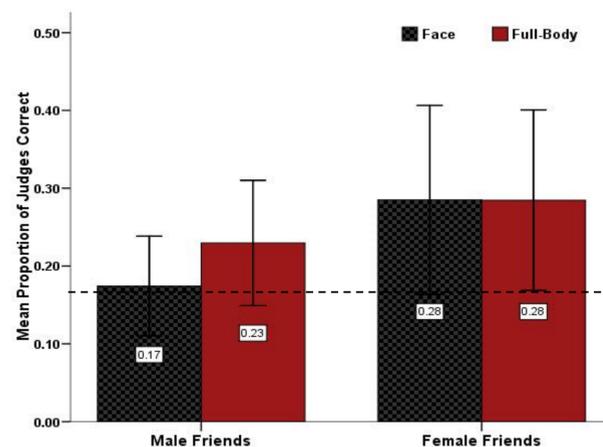


Displayed to the left (female friends) and right (male friends) are samples of the slides in the matching task. Each judge viewed a slide show of either face shots or full-body shots and attempted to match six sets of male friends and six sets of female friends. For each slide, the judge had a 1 in 6 chance, or .1667 probability, of matching the two friends. If friends do not resemble one another beyond chance levels, then the typical friendship pair should be matched by 16.67% of judges.



## Primary Findings

**Figure 1.** Proportion of judges that correctly matched male and female friends' facial shots and full-body shots. The dashed line represents the proportion of judges expected to match friends under the null hypothesis of no resemblance.



**Figure 2.** Disparity in ratings of female and male friends' level of physical attractiveness.

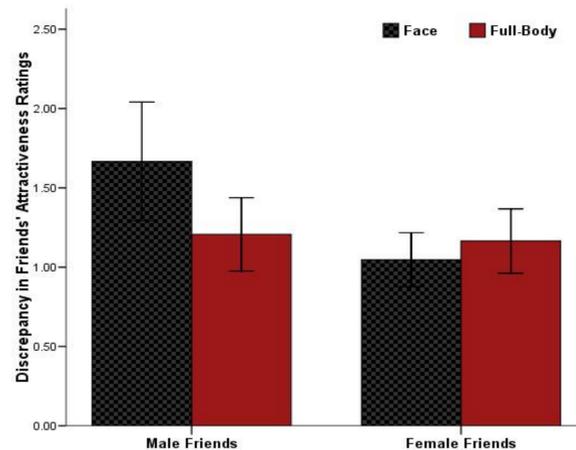
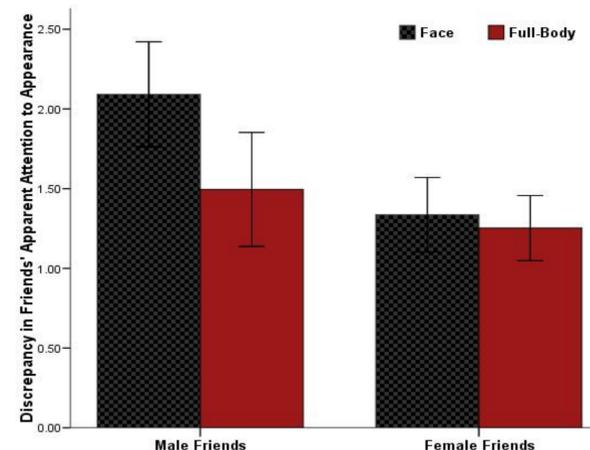


Figure 1, at left, demonstrates that the typical female friendship pair was matched by a greater proportion of judges than would be expected under the null hypothesis of no resemblance (dashed line). Female friends' facial shots and full-body shots were both matched at above-chance levels. The typical male friendship pair was matched at above-chance levels only when judges were viewing full-body shots.

Figures 2 and 3 facilitate interpretation of this pattern of results. Figure 2, at lower left, shows that the pictures our second sample of judges had the most difficult time matching correctly (male friends' face shots) were of friends who were perceived by our first sample of judges as quite disparate in their level of physical attractiveness. Likewise, Figure 3, at lower right, shows that the friends in these pictures were also perceived by the first sample of judges as the most different in the apparent attention they paid to their appearance.

**Figure 3.** Disparity in ratings of female and male friends' apparent attention to their appearance.



Note. In all figures, error bars represent 95% confidence intervals of the mean.

## Results

We conducted mixed models to test the effects of sex of friendship pair and photo condition on the proportion of judges who correctly matched the friendship pair. The analysis revealed a marginally significant effect of sex of friendship pair,  $F(1, 44) = 3.43, p = .07$  (see Figure 1). The typical female friendship pair was matched by 28% of judges, whereas the typical male friendship pair was matched by 20% of judges. No significant main effect of photo condition, or of interaction between friendship sex and photo condition, was revealed.

We conducted one-tailed exact binomial probability analyses to test the hypothesis that judges can match friends at above-chance levels. The null hypothesis of no resemblance between friends assumes that judges would match friends at chance levels, a rate of every 1 in 6 judges, or 16.67% of judges. For both conditions of female photos, the exact binomial probability was highly significant: Female faces were matched by 28.49% of judges,  $p = .0005$ ; female bodies were matched by 28.46% of judges,  $p = .006$ . Although male faces were not matched at above chance levels (17.43% of judges, binomial  $p = .47$ ), male bodies were matched at above chance (22.96% of judges, binomial  $p = .052$ ). Therefore, our results provided general support for our prediction that judges would be able to match friends at above-chance levels.

Our analysis also supported our prediction that judges would match in accordance with similar levels of attractiveness and apparent attention to appearance. Male friends' faces, which comprised the condition with the lowest matching rates, had the highest discrepancy ratings in both attractiveness (Figure 2) and attention to appearance (Figure 3).

## Discussion

In a novel test of Genetic Similarity Theory, we have documented for the first time that strangers can discern friends from non-friends, particularly if those being discerned are female. The primary limitation of our study is our small – and relatively homogeneous – sample of friendship pairs. In the future, we aim to utilize a larger sample of friendship pairs to investigate specific friendship variables, such as emotional closeness, similarity in attractiveness and personality, and motivation to invest in the friendship, that should be tied to a greater likelihood of genetic resemblance and hence a greater likelihood of being correctly perceived as friends.

## Select References

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