



## RESOURCE APPRAISALS AMONG SELF, FRIEND AND LEADER: IMPLICATIONS FOR AN EVOLUTIONARY PERSPECTIVE ON INDIVIDUAL DIFFERENCES

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**Summary**—The study was designed to illustrate an evolutionary approach to individual differences and friendship choice. Individual differences in personality and other trait dimensions are conceptualized as resource environments for individuals. Individuals are expected to evaluate this variation differently depending on a variety of variables and the present study evaluated the following: (1) the putative role of the person being evaluated as ideal friend or ideal leader; (2) subject's status as males or females; (3) similarity to self. 372 subjects (279 females) completed the EAS Adult Temperament Survey and the Resource Appraisal Survey (RAS) for themselves, an ideal friend and an ideal leader. The combined EAS and RAS were factor analysed for males and females separately for 11 *a priori* factors (5 EAS, 6 RAS) using Principal Component Analysis with varimax rotation. The results generally yielded a rationally interpretable, robust set of factors. ANOVA results on these factors indicated evolutionarily predicted sex differences, particularly with regard to the Intimacy/Warmth dimension. Females scored themselves higher on Intimacy/Warmth than males and rated this characteristic as more important in an ideal friend and an ideal leader than did males. In general, ideal leaders were expected to be higher than ideal friends in scales intended to tap variation in physical attractiveness, intelligence, conscientiousness, activity and sociability and lower in emotionality and disabilities—traits which may well be important in a leader; ideal friends, on the other hand were expected to be higher than prospective leaders in athletic ability and Intimacy/Warmth—traits which are presumably more important for a successful friendship. © 1998 Elsevier Science Ltd. All rights reserved

*Key-Words:* evolution, individual differences, sex differences, friendship, reciprocity, similarity.

### INTRODUCTION

This paper is intended to illustrate the utility of an evolutionary perspective on personality. Evolutionary theory provides a multi-level framework for personality psychology: Personality systems as universal psychological mechanisms; systematic group (i.e. gender, birth order, age, ethnic) differences that can be illuminated by evolutionary theory; and individual differences (MacDonald, 1995, 1998). At the highest level, personality systems are universal species-typical systems with adaptive functions in the human environment of evolutionary adaptedness. For example, Factor I derived from factor analytic studies consists of individual differences in social dominance as well as several other highly sex differentiated, non-interpersonal approach behaviors, including sensation seeking, impulsivity and sensitivity to reward (MacDonald, 1995). Being high on Factor I is also associated with aggressiveness and greater sexual experiences. Just as the vertebrate eye was designed by natural selection to respond to the properties of light and the structure of surfaces as enduring and recurrent features of the environment, the behavioral approach personality systems are designed to motivate organisms to approach sources of reward (e.g. sexual gratification) that occurred as enduring and recurrent features of the environments in which humans evolved. Furthermore, just as creatures with highly sophisticated visual abilities were favored by natural selection because they were able to solve recurrent problems presented in navigating a three-dimensional world, the behavioral approach system served to promote biological fitness by motivating organisms to acquire resources, including sexual resources and social status, related to reproductive success.

This article illustrates the utility of the second two levels of this model, group differences and

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individual differences. At the level of group differences, several mid-level evolutionary theories successfully predict group differences in personality, including sex differences and certain age differences. Moreover, parent–offspring conflict theory provides a tool for conceptualizing birth order differences in the Five-Factor space (Sulloway, 1996), and life history theory provides a framework for understanding certain ethnic differences in personality as well as the coherent patterning of individual differences in personality (Rushton, 1995).

Consider, e.g. the evolutionary theory of sex differences. Factor rotations that maximize sex differences are most interesting to the evolutionist because we have a powerful evolutionary theory of sex differences. Evolutionary theory predicts that in species with sex-differentiated patterns of parental investment, the sex with the lower level of parental investment (typically the males) is expected to pursue a more high risk strategy compared to females, including being prone to risk taking, neophilia and exploratory behavior. This follows because the high-investment sex (typically females) is expected to be able to mate relatively easily and is highly limited in the number of offspring (Trivers, 1972). However, mating is expected to be problematic for the low-investment sex, with the result that males must often compete with other males for access to females, while mating for females is much less problematic.

Mating for males is thus expected to be much more of a high stakes enterprise, with much more to gain and much more to lose than is the case with females. Risk taking directed at resource acquisition can therefore have very high payoffs for males compared to females and as a result, the evolutionary theory of sex makes predictions of sex-differentiated behavior which go well beyond expected differences in mating strategies and even social dominance to encompass a wide range of behaviors that influence resource acquisition. Males in general are expected to be higher than females on behavioral approach systems (including sensation seeking, risk-taking, impulsivity and social dominance) and lower on behavioral withdrawal systems (including caution and fear). Females are also expected and found to be higher on the Nurturance/Love scale of the circumplex model (Trapnell & Wiggins, 1996; Wiggins, 1991).

Finally, at the level of individual differences, variation in personality consists of a range of viable evolutionary strategies for humans. Personality distributions are conceptualized as subsuming more than one viable adaptive strategy (Buss, 1991; MacDonald, 1991; Wilson, 1994). This perspective proposes that personality variation represents a continuous distribution of phenotypes that matches a continuous distribution of viable strategies. Genetic variation in personality and other valued traits serves to facilitate the production of a wide range of variation (within a delimited range) which facilitates the occupation of a wide range of possible niches in the human and non-human environment. Within this perspective, while there is expected to be a wide range of adoptively viable personality variation, extremes on these distributions are expected to be maladaptive. This approach is thus highly consistent with attempts to conceptualize psychopathology in terms of maladaptive extremes on personality dimensions (Costa & Widiger, 1994).

If indeed personality distributions represent a range of viable strategies, there are good theoretical reasons to suppose that humans will be greatly interested in the genetic and phenotypic diversity represented by this range of viable strategies. As Buss (1991) notes, personality is an adaptive landscape in which “perceiving, attending to, and acting upon differences in others is crucial for solving problems of survival and reproduction” (p. 471). The crux of this article is to develop an evolutionary perspective on the interests humans have in personality variation.

At a basic level, individual genetic and phenotypic variation constitutes the playing field on which the evolutionary game is played (MacDonald, 1991). Evolutionary theory implies that organisms will be keenly interested in genetic variation and its expression in a wide array of phenotypic traits. There is good evidence that mechanisms have evolved which appraise the resource value of this variation. For example, the phenomenon of female mate choice, proposed originally by Darwin as a mechanism of sexual selection, implies mechanisms for the discrimination of phenotypic (and ultimately genetic) variants (Andersson, 1994). Indeed, evolutionary approaches to sexual behavior imply evolved mechanisms that assess variation in a large number of traits. Thus Buss (1994) provides cross-cultural evidence that females prefer males who control resources and are willing to invest them in the woman’s children. In addition, women prefer men who are intelligent, kind, healthy, physically strong, dependable, emotionally stable, ambitious, tall and somewhat older than themselves. The evolutionary perspective on such mechanisms—which is strongly supported by

cross-cultural research (Buss, 1989, 1994)—implies the evolution of mechanisms for detecting and evaluating individual differences in a wide range of traits.

In support of the central role of social evaluation in personality, Hogan (1983) has proposed that personality trait terms evaluate the potential of persons as resources to others. Individual differences in personality are thus viewed as indicators of whether individuals are suited for particular roles. Buss (1991) notes that the vast majority of personality trait terms are evaluative, indicating a person's potential value as a resource to others, and Wicklund and Braun (1987) found that individuals are more likely to ascribe traits to others if evaluation is the goal. Borkenau (1990) showed that personality traits are judged to be similar to the extent that they are similar to common extreme values on a trait dimension. This supports the idea that in making attributions of personality, individuals are not making attributions of how closely a person conforms to a central tendency for the trait, but are rather describing the individual in terms of ideal-based goal categories which represent the extreme values of the trait.

Personality traits as summary measures of individual differences seem to be important information. Individuals are expected to develop beliefs about their own relative standing on individual difference dimensions. Each individual is expected to not only appraise the phenotypic traits of others, but to evaluate these traits differentially depending on the type of relationship entered into. Thus Graziano and Ward (1992) found that teachers perceived a stronger association between Conscientiousness and school adjustment than did school counsellors, a finding which presumably reflects the greater interest teachers have in this trait as a component of children's adjustment. Similarly, one might positively evaluate high levels of courage and decisiveness in a prospective leader, but find these traits fairly unimportant in a close friend. Individuals who vary in their standing on individual difference dimensions are thus expected to answer to different human interests. In the present study, subjects were asked to rate prospective ideal friends and ideal leaders along a variety of heritable individual differences dimensions. The prediction is not only that these resource evaluations will differ depending on the proposed role of the person, but will at least sometimes do so in ways which reflect evolutionary interests.

In the present study the hypothesis that resource appraisals are influenced by evolved psychological dispositions will be evaluated by testing for sex differences. Following the evolutionary logic sketched above, an evolutionary perspective predicts that females will tend to value close, intimate relationships more than males because such relationships are an indication of paternal investment in children. Males, on the other hand, are expected to be more concerned with resources which are closely related to success in the larger peer group (Buss, 1989, 1991, 1994; MacDonald, 1988, 1992). Thus it is expected that traits such as athletic ability and academic competence which are important to success as a young adult college student will be more valued by males than by females.

In addition, subjects were asked to rate themselves along the same set of resource dimensions used in evaluating prospective friends and leaders. These measures are important because there are sound theoretical reasons to suppose that subjects' resource appraisals of others will be influenced by their appraisals of themselves. In particular, subjects' appraisals of prospective ideal friends and leaders are expected to be influenced by perceptions of similarity. It is well known that similarity is associated with positive feelings and is an important aspect of human assortment, as among friends and spouses (Rushton, 1989).

One evolutionary approach to similarity emphasizes the importance of phenotypic similarity as a cue to overall genetic commonality and thus lowering the threshold for altruism. According to genetic similarity theory (Rushton, 1989), people are expected to choose friends on the basis of traits similar to themselves because the genetic similarity of friends facilitates altruism by assuring a relative commonality of self-interest. Since the proposed evolutionary function of similarity as a principle of human assortment is that of lowering the threshold for altruism, genetic similarity theory proposes to be an extension of kin selection processes to unrelated individuals and indeed the proposed mechanisms for detecting genetic similarity are the same mechanisms proposed as possible mechanisms underlying kin selection (i.e., innate feature detectors, phenotypic matching, familiarity and location).

Another evolutionary perspective which would also predict similarity of friends emphasizes reciprocity of resource transactions (MacDonald, 1996). This evolutionary perspective on friendship emphasizes the point that friendship is characterized by repeated interactions between the parties in which neither party defects. As a result, it is expected that such relationships will be more nearly

symmetrical and based on reciprocity than relationships such as leader-follower. A perhaps not so obvious result of this is that similarity is expected to be a basic feature of friendship. If, as proposed above, individuals may be conceptualized as a set of resource potentials for others and if indeed reciprocity is the fundamental rule of human voluntary relationships, then a very likely outcome is simply a phenotypic matching process in which people aggregate on the basis of phenotypic similarity. Similarity ensures reciprocity because the resource value of a wide range of phenotypic attributes is matched within the dyad. Thus if physical attractiveness is a resource, people of similar physical attractiveness are expected to be more likely to become friends because reciprocity in this resource attribute has been achieved. In addition, individuals' interests and abilities would be expected to be resources for other people who have similar interests and abilities: Sharing an interest, e.g. in developing an intimate relationship based on affection, would provide friends with psychological rewards, so that there is reciprocated motivation to continue the relationship.

Thus, rather than depend on lowering barriers for altruism, the resource/reciprocity perspective depends on the perceived resource value of individual variation encountered in others. Because altruism is not important, the resource/reciprocity perspective does not imply that only heritable traits are valued. The proposal that similarity is greater for more highly heritable traits is central to genetic similarity theory (Rushton, 1989). However, the resource/reciprocity perspective implies that individuals will place little value on certain highly heritable traits, such as anthropomorphic measures and blood types, which are unlikely to be resources for others. Supporting this, Rushton (1989) reports that close friends were quite similar for traits such as age (0.64), education (0.42), occupational status (0.39), conservatism (0.36), mutual feelings of altruism and intimacy (0.32), and all of these similarities were much higher than similarities with randomly chosen members of the sample. On the other hand, similarity on 13 highly heritable anthropomorphic variables (e.g. wrist-circumference) was only 0.12. Similarity in age is particularly interesting, because age cannot be heritable, but would certainly be an important marker of resource value in relationships of friendship. Similarly, the non-heritable trait of birth order in societies with primogeniture resulted in large differences in resource value between children and had a major effect on the marriage prospects of children (MacDonald, 1991; Sulloway, 1996).

Moreover, relevant to the present study, the resource/reciprocity theory predicts a greater similarity between self-friend than between self-leader, while there is no basis to predict such a difference on the basis of mechanisms resulting from genetic similarity theory. From the perspective of genetic similarity theory, the similarity of self to others as a cue to overall genetic similarity is important; however, from the resource/reciprocity perspective, similarity is likely to be more important in an ideal friendship than in describing an ideal leader because friendship is hypothesized to be based on reciprocity in traits which are reciprocally valued by the participants in the relationship. Thus, for example, an individual high on the Agreeableness/Love dimension of personality (Factor II in the Five-Factor model), would be expected to desire a friend who was also high on this dimension because such a friend would be an important source of the type of relationship valued by the person. However, such a person would want similarity on this dimension much less in a leader, since such a trait in a leader would not be of direct benefit to the person and may even be viewed as a trait which would be detrimental in a leader because it would make the leader overly sympathetic.

This example also suggests that the resource/reciprocity perspective would be supported by evidence that subjects rated themselves as more similar to ideal friends on categories on which they rated themselves highly. The implication would be that subjects do not seek similarity in friends and leaders on all categories indiscriminately, but tend to focus on categories which are highly salient to themselves. Thus if having intellectual friends is extremely important to one's self-image and enjoyment of life, then variation in this trait is a relatively important resource, and the expectation is that the individual will be highly concerned about similarity in this trait compared to variation in other traits which are of less importance as resources.

The resource/reciprocity perspective thus implies that the importance of similarity will be different for different individuals on different traits. Moreover, the resource/reciprocity perspective predicts that friends will be more similar to self than leaders, but there is no reason to predict similarity between self and leader. On the other hand, from the perspective of mechanisms resulting from genetic similarity theory, both ideal leaders and ideal friends are expected to be similar to self because lowered barriers to altruism would be relevant to both types of relationships.

Table 1. The EAS temperament survey for adults<sup>a</sup>


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Emotionality Items	
Distress	
ED1	I frequently get distressed.
ED2	I often feel frustrated.
ED3	Everyday events make me troubled and fretful.
ED4	I get emotionally upset easily.
Fear	
EF1	I am easily frightened.
EF2	I often feel insecure.
EF3	When I get scared, I panic.
EF4	I have fewer fears than most people my age. (reverse scored)
Anger	
EA1	When displeased, I let people know it right away.
EA2	I am known as hot-blooded and quick-tempered.
EA3	There are many things that annoy me.
EA4	It takes a lot to make me mad (reverse scored).
Activity Items	
A1	I usually seem to be in a hurry.
A2	I like to keep busy all the time.
A3	My life is fast paced.
A4	I often feel as if I am bursting with energy.
Sociability Items	
S1	I like to be with people.
S2	I am something of a loner (reverse scored).
S3	I prefer working with others rather than alone.
S4	I find people more stimulating than anything else.

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<sup>a</sup>From Buss and Plomin (1984).

## METHODS

### Subjects

Three hundred and seventy-two subjects (279 females, 93 males), students enrolled in undergraduate psychology courses at a large urban university in the Western U.S.A. completed useable surveys for this study. Six subjects' surveys were excluded because they were incomplete or the subjects' responses indicated they were not co-operating with the survey (e.g. making repeated patterns on the rating forms). On the basis of a subsample of 172 of these subjects, the average age of the sample was 24.22 (SD = 5.79;  $r = 19-57$ ). The sex ratio obtained in this sample is typical for psychology courses at this university.

### Instruments

Two instruments were used for this study. The EAS Adult Temperament Survey (Buss & Plomin, 1984) was used as a measure of personality. This instrument has been shown to have three independent dimensions of Emotionality, Activity, and Sociability. Emotionality measures variation in the tendency to negative emotional arousal and has three subscales: Distress, Fear, and Anger. Activity refers to an individual's tempo or pace. Persons high on this trait are seen as active and energetic. Sociability assesses an individual's preference for social interaction. Individuals high on sociability enjoy others' company and dislike being alone. Sociability is also a component of extraversion on many personality scales (Buss & Plomin, 1984; Digman, 1990). Behavioral genetic studies using this instrument indicate heritabilities in the 0.5 range (Buss & Plomin, 1984).

The EAS Temperament Survey consists of 20 items which are answered on a scale from *not characteristic of oneself* (1) to *very characteristic* (5) (Table 1). As indicated in Table 1, three of the 20 items were reverse scored ("I have fewer fears than most people my age"; "It takes a lot to make me mad" and "I am something of a loner"). In the present study, subjects rated themselves on this instrument and were then asked to rate the importance (desirability) of these items for a prospective ideal leader and a prospective same-sex friend. Since items in the original version of this instrument are phrased in the first person (e.g. "I frequently get distressed"), the items were reworded in order to make them applicable to prospective leaders or friends (e.g. "Frequently gets distressed"). These

items were then rated on a 5-point scale, from *Unimportant (Undesirable)* (1) to *Important (Desirable)* (5).

In addition, on the basis of our reading of the developmental literature on peer relations and friendship (Berndt & Ladd, 1989; Weisfeld & Berger, 1983; Weisfeld & Billings, 1988), the Resource Appraisal Survey (RAS) was developed as an attempt to tap other individual difference dimensions which appear to be important as resources in human relationships. This literature indicates that physical attractiveness, athletic ability and academic success are highly valued resources in peer interaction, while physical disabilities are negatively valued. Both athletic ability and physical attractiveness show substantial heritability (Weisfeld & Berger, 1983) and numerous studies have indicated a substantial contribution of genetic variation to variation in intelligence and academic success (Rushton, 1995).

Further, since friendship is often characterized by close, intimate relationships and self-disclosure (Hartup, 1989), four items were included in an attempt to tap this dimension. These items are similar to items typical of those clustering in Factor II of the Five-Factor Model (Intimacy/Warmth) (Digman, 1990). Finally, it was hypothesized that Conscientiousness as a component of the Five Factor model (Digman, 1990; Kohnstamm, 1991) would be an important resource in peer interaction and would be differentially valued as characteristics of friends and leaders. Thus 11 items representing extreme values on Conscientiousness subscales (Kohnstamm, 1991) were included in an attempt to tap this dimension. Table 2 provides a list of the items of the RAS within their 6 *a priori* categories: Physical Attractiveness, Athletic Ability, Academic Success, Disability, Intimacy/Warmth, Conscientiousness.

As in the case of the EAS, subjects rated themselves on the RAS on a 5-point scale, ranging from *not characteristic* (of oneself) (1) to *very characteristic* (5). Subjects were then asked to rate the importance (desirability) of these items for a prospective ideal leader and a prospective ideal same-sex friend. Two of the proposed conscientiousness items were reverse scored: "Irresponsible" and "Careless of property".

### *Procedures*

Subjects were given a packet of six surveys in randomized order: three versions of the EAS (self, friend and leader) and three versions of the RAS (self, friend, leader). Items within the surveys were also randomized. Subjects were told that there was no time limit for completion of the surveys and that there were no correct or incorrect answers for the ratings.

## RESULTS

### *The Factor Structure of the combined EAS and RAS*

The 55 items of the combined EAS and RAS were factor analysed for the 11 *a priori* factors (5 EAS, 6 RAS) using Principal Component Analysis with varimax rotation. The analysis was performed separately for males and females and for Self, Friend and Leader versions. For all of these analyses the factors had eigenvalues greater than 1. However, the results discussed later include only factors whose total variance contribution was at least 5%.

The results for the Self version conformed quite well to the *a priori* expectations, especially for females. For both sexes the first factor included 4 (for males) or 5 (for females) of the 5 athletic ability items. However, both of these first factors included 2 Physical Feature items ("Has well-defined muscle tone"; "Physically fit") and an Academic Success item ("Involved in extracurricular activities"). In retrospect it is not surprising that these items were associated with athletic participation.

The second factor for both sexes included 7 (for males) or 8 (for females) of the 8 EAS items for Distress and Fear, plus 1 item from the EAS Anger subscale ("There are many things that annoy me"). The 11 Conscientiousness items split into 2 factors for both sexes, with 1 factor including items associated with the Academic Success scale. The 3rd factor for both sexes was dominated by Conscientiousness items: For females, the 3rd factor included 8 Conscientiousness items and 3 Academic Success items ("Takes hard classes"; "Gets good grades"; "Liked by teacher"), while the 9th factor consisted of 4 Conscientiousness items. For males the 3rd factor included 9 Con-

Table 2. The resource appraisal survey, with items placed in *a priori* categories

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Physical Attractiveness (PA) Items
PF1 Nice smile.
PF2 Physically attractive.
PF3 Looks good.
PF4 Physically fit.
PF5 Tall.
PF6 Has well-defined muscle tone.
Athletic Ability (AA) Items
AA1 Good at sports.
AA2 Runs fast.
AA3 Strong.
AA4 Agile.
AA5 Plays many sports.
Academic Success (AS) Items
AS1 Takes hard classes.
AS2 Gets good grades.
AS3 Liked by teachers.
AS4 Involved in many extracurricular activities.
Disability (D) Items
D1 Physically handicapped.
D2 Mentally retarded.
D3 Short.
D4 Learning disabled.
D5 Hyperactive.
Intimacy/Warmth (IW) Items
IW1 Values personal relationships.
IW2 Values confiding in others' innermost feelings and thoughts.
IW3 Shows concern for others.
IW4 Exhibits warm affections.
Conscientiousness Items
C1 Conscientious.
C2 Dependable.
C3 Trustworthy.
C4 Reliable.
C5 Dedicated.
C6 Neat.
C7 Careful of own work.
C8 Persevering.
C9 Planful.
C10 Irresponsible (reverse scored).
C11 Careless of property (reverse scored).

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scientiousness items and 1 Academic Success item ("Takes hard classes") and the 10th factor included 6 Conscientious items and 2 Academic Success items. In retrospect, the association between Conscientiousness and Academic Success is not surprising: Digman & Takamoto-Chock (1981) report correlations in the 0.5 range between high school grades and conscientiousness.

The results for EAS sociability and RAS Intimacy/Warmth were particularly interesting. For females, Factor 4 included all 4 EAS Sociability items and no Intimacy/Warmth items, while for males Factor 4 included all 4 EAS Sociability items and all 4 Intimacy/Warmth items. This indicates that the males in this sample systematically associated items indicating an attraction to people typical of extraversion scales with items characteristic of intimate relationships, while females distinguished sharply between these items. In addition, Factor 11 for females included all 4 Intimacy/Warmth items, plus 3 Conscientiousness items ("Trustworthy", "Persevering", "Dedicated") and only 1 EAS Sociability item ("Likes to be with people"). (This sociability item also loaded with the other EAS Sociability items on Factor 4 for females.) For females, then, intimate relationships are more likely to be associated with trust and less likely to be confounded with a general attraction to social interaction.

The factor analysis for both sexes included a factor of EAS Activity items as well as RAS Disability and Physical Attractiveness factors. For females, Factor 6 included all 4 EAS Activity items, plus the RAS Disability item "Hyperactive", while for males Factor 5 included 3 EAS Activity items plus negative loadings for 2 RAS Disability items ("Mentally retarded"; "Learning disabled),

and the RAS item "Involved in extracurricular activities". For females, Factor 5 included 3 of the 6 Physical Attractiveness items, while for males Factor 7 included high loadings for the same 3 Physical Attractiveness items. As indicated above, 2 Physical Attractiveness items loaded on Athletic Ability and the other Physical Attractiveness item, "Tall", loaded on the Tall/Short factor.

For females Factor 10 included high loadings for 3 of the 4 RAS Disability items, while for males a similar factor was less well defined: Factor 9 for males included 3 of the 4 Disability items, but they did not load as highly. Two items from RAS Conscientiousness ("Planful", "Neat") and 1 from the EAS Anger subscale ("There are many things that annoy me") had fairly high loadings, on this factor and there were also a smattering of other low loadings.

There was also support for an independent factor representing the EAS Anger subscale. Factor 8 for females included high loadings for all 4 of the EAS Anger subscale items. For males, Factor 11 was less well-defined, but included 3 Anger subscale items (only 1 with a high loading) and a high loading for the EAS Fear subscale item "I have fewer fears than most people my age" and the RAS Conscientiousness item—"Careless of property". In addition, there was an artificial factor for both sexes composed of the RAS items "Tall" and "Short" with opposite very high loadings. This last factor presumably indicates only that the subjects accurately reported their height. Finally, there was 1 factor for males which did not appear in the factor analysis for females: Factor 8 for males had only two items with high loadings, the RAS Disability item "Hyperactive" and the EAS Activity item "I often feel as if I am bursting with energy".

In summary, the results for the females on the Self version provide especially strong support for the *a priori* factor structure: 10 of the 11 factors were strongly supported. Only the EAS Fear and Distress items were combined into 1 factor and there was one unanticipated factor—the factor consisting of the Tall/Short items. For males the results were similar on 9 of the 11 factors, including the tendency to conflate EAS Fear and Distress and the production of a Tall/Short factor. However, males conflated EAS Sociability and RAS Intimacy/Warmth while for females these were neatly separated into 2 factors. Since these items were conflated by males, the 11 factor solution based on the assumption of 11 *a priori* categories resulted in 1 factor for males with no correlative factor for females (Factor 8 mentioned above).

#### *Factor analysis of the Friend and Leader versions*

The factor analysis of the Friend and Leader versions produced a tendency for the amalgamation of factors which were separate on the factor analysis of the Self Version, resulting in two very powerful factors accounting for between 15% and 27% of the Total Variance Contribution.

For the Friend version, the first factor consisted of a large number of RAS items from the Physical Attractiveness, Athletic Ability and Academic Success scales. The second factor for both sexes included 9 (for females) and 10 (for males) items from the EAS Emotionality scale, including items from all 3 of the subscales (Fear, Distress and Anger). Thus, unlike the Self version where only Fear and Distress emerged on the same factor, there was a tendency for all of the emotionality items to emerge on 1 factor.

For both sexes there was also a factor representing all 4 Intimacy/Warmth items, but for females this factor included high loadings of 4 Conscientiousness items: "Dependable", "Trustworthy", "Reliable" and "Dedicated". For males, there were high loadings for the 4 Intimacy/Warmth items and 1 Conscientiousness item ("Conscientious"). In addition, there were low loadings of these items with 3 conscientiousness items ("Planful", "Trustworthy", "Careful"), 1 EAS Emotionality item ("I am known as hot-blooded and quick tempered") and 1 EAS Sociability item ("I find people more stimulating than anything else"). Unlike the results for the Self version, males did not systematically conflate Sociability and Intimacy/Warmth and they were more inclined to associate Intimacy/Warmth with Conscientiousness items. However, there was also an even stronger tendency for females to associate Intimacy/Warmth as a trait of an ideal friend with Conscientiousness in that friend. Unlike males, the analysis for females again yielded a distinct Sociability factor (Factor 7) consisting of all four items of the EAS Sociability scale.

The factor analysis of the Friend version for both sexes also indicated a Disability factor, an Activity factor and a Conscientiousness factor, as well as a factor consisting of the items "Irresponsible" and "Careless of property". The other factors represented less than 5% of the Total Variance contribution and/or were uninterpretable.

Table 3. ANOVA results<sup>a</sup>

	Self				Friend				Leader			
	Males N = 93		Females N = 279		Males N = 93		Females N = 279		Males N = 93		Females N = 279	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
PA	3.660	0.657	3.470	0.682	3.073	0.953	2.750	1.026	3.124	0.942	2.790	1.016
AA	3.832	0.762	3.178	0.838	3.325	0.787	2.675	0.972	3.052	0.988	2.607	0.953
AS	3.831	0.564	3.846	0.584	3.285	0.880	3.112	0.880	3.925	0.729	3.707	0.883
D	1.701	0.504	1.677	0.524	1.987	0.677	2.077	0.729	1.912	0.716	1.932	0.700
IW	4.169	0.607	4.517	0.514	4.414	0.557	4.685	0.389	4.323	0.601	4.440	0.581
C	4.299	0.420	4.419	0.390	4.347	0.420	4.379	0.413	4.617	0.338	4.660	0.370
ED	2.406	0.772	2.692	0.856	1.685	0.725	1.703	0.637	1.645	0.907	1.500	0.685
EF	2.304	0.729	2.793	0.814	1.984	0.615	2.039	0.567	1.785	0.757	1.753	0.624
EA	2.750	0.833	2.719	0.825	2.280	0.579	2.344	0.574	2.419	0.654	2.288	0.601
A	3.403	0.765	3.542	0.774	3.073	0.731	3.071	0.721	3.438	0.740	3.349	0.680
S	3.538	0.747	3.844	0.791	3.868	0.660	3.926	0.650	4.118	0.628	4.272	0.652

<sup>a</sup>see Tables 1 and 2 for abbreviations of the Category labels in left column.

As in the case of the Friend version, the first two factors of the Leader version were very robust. However, while Physical Attractiveness and Athletic Ability were powerfully included in this factor as in the Friend version, here, with the exception of the item “involved in many extracurricular activities”, there were no items from the Academic Success scale. “Tall” loaded strongly on this factor for both sexes, but “Short” loaded on this factor only for females.

As in the Friend version, the 2nd factor consisted of items from the Emotionality Scale of the EAS, including items related to all 3 subscales (Fear, Distress and Anger). For both sexes the 3rd factor included high loadings of RAS Conscientiousness items (8 for females; 5 for males). The results for both sexes also yielded a factor including Disability items, but for males this factor included only 2 of the 4 Disability items and the items “Careless of Property” and “Irresponsible” loaded strongly on this factor. The corresponding factor for females included all 4 of the Disability items and nothing else. Females again sharply distinguished between EAS Sociability and RAS Intimacy/Warmth (Factors 4 and 6), while the results for males yielded a distinct Intimacy/Warmth factor not conflated with EAS Sociability items (Factor 7), but there was no distinct Sociability factor. The results for females also yielded a distinct factor of Academic Success items (Factor 7) and a factor composed mainly of EAS Activity items. The other factors for both sexes represented less than 5% of the Total Variance contribution and/or were uninterpretable.

*Analysis of variance results for the 11 a priori categories of the Self, Friend and Leader versions of the EAS/RAS by sex*

Since the factor analysis results for the self-version of the EAS/RAS essentially corroborated the 11 *a priori* categories, the data were analysed for mean differences in these 11 categories depending on the three versions (Self, Friend and Leader) with sex as an additional independent variable. This design yielded a 2 × 3 × 11 ANOVA in which the data were obtained by averaging the subject’s scores on each of the 11 categories (Table 3).

With the exception of the main effect for sex (which was not significant), all main effects and interactions were significant at the *P* < 0.0001 level. The main effect for version (i.e. Self, Friend and Leader versions) and the interaction between Sex and Version were unanticipated, since some of the categories were expected to be assets (e.g. the EAS Sociability category) and other liabilities (e.g. the RAS Disability category). Nevertheless, 5 of the 6 RAS scales and the EAS Sociability scale clearly reflect assets in social interaction, so that there was a general tendency for high average scores on these scales to indicate high resource value in social interaction.

Using the Scheffé *post-hoc* comparison procedure (Harnett, 1982), the results for the Version main effect indicated that both sexes rated themselves higher than they rated ideal friends or leaders (*P* < 0.01) over the 11 categories. The Version × Sex interaction resulted because this tendency was stronger in females: For females the Self–Friend and Self–Leader version differences were significant at *P* < 0.01, while for males the differences between Self and the other two versions were of lesser magnitude and the Self–Leader difference was significant only at the 0.05 level.

Indeed, *post-hoc* comparisons on the Version  $\times$  Category interaction results indicated that compared to self, friends were expected to be lower on RAS Physical Attractiveness, Athletic Ability, Academic Success and EAS Distress, Fear, Anger and Activity, but higher on Disabilities. Similarly leaders were expected to be lower than self on RAS Physical Attractiveness, Athletic Ability and EAS Distress, Fear, and Anger ( $P < 0.01$  for all), but higher on Sociability ( $P < 0.01$ ) and Conscientiousness ( $P = 0.05$ ).

Pre-planned comparisons between the Friend and Leader versions using the LSD method (Harnett, 1982) indicated that leaders were expected to be higher than friends in RAS Academic Success, Conscientiousness, EAS Sociability and EAS Activity ( $P < .05$ ), while ideal friends were expected to be higher than prospective leaders in RAS Athletic Ability, Disabilities, Intimacy/Warmth and EAS Distress and Fear ( $P < 0.01$  except where noted).

The Category  $\times$  Sex and the Version  $\times$  Category  $\times$  Sex interactions were analysed as planned comparisons. Females rated RAS Intimacy/Warmth ( $P < 0.01$ ) and EAS Fear ( $P < 0.01$ ) and Sociability ( $P < 0.01$ ) more highly than males across all three versions, while males rated RAS Physical Attractiveness ( $P < 0.01$ ), Athletic Ability ( $P < 0.01$ ) and Academic Success ( $P < 0.05$ ) higher. The results for the Version  $\times$  Category  $\times$  Sex interaction indicated that while females valued Intimacy/Warmth in a friend more than males ( $P < 0.01$ ), this difference was of marginal significance when evaluating an ideal leader ( $P < 0.10$ ). Males expected leaders to be higher in EAS Distress and Anger than females (both  $P < 0.05$ ), but there were no sex differences when evaluating an ideal friend. On the other hand, males expected potential leaders to be lower on EAS Sociability than did females, while there were no significant sex differences when evaluating ideal friends.

In addition, the Version  $\times$  Category  $\times$  Sex results indicated that males rated themselves as higher on RAS Physical Attractiveness and Athletic Ability than females, while females rated themselves as higher on RAS Intimacy/Warmth and Conscientiousness ( $P < 0.10$ ) and EAS Distress, Fear, Activity ( $P < 0.05$ ) and Sociability ( $P < 0.01$  except where noted).

#### *Self-Friend and Self-Leader correlations*

Similarities between Self and Friend and Self and Leader were examined using correlations among the 11 categories (Table 4). The general pattern to emerge was that the Self ratings were similar to both Friend and Leader ratings, but Self-Friend ratings were more highly correlated than Self-Leader ratings. Thus all of the 11 Self-Friend and 11 Self-Leader correlations between corresponding categories (e.g. Self Physical Attractiveness and Friend Physical Attractiveness) were positive and significant at  $P < 0.01$ . However, in 8 of the 11 correlations, the absolute value of the correlations was higher for Self-Friend than for Self-Leader and the one-tailed Wilcoxon test was significant ( $P < 0.025$ ), indicating a median difference in the correlations between the populations (Table 4). In addition, comparisons between the Self-Friend and Self-Leader correlations indicated that the Self-Friend correlations for Athletic Ability, Disability ( $P < 0.05$ ), Sociability, Intimacy/Warmth and Activity were significantly higher than the Self-Leader correlations ( $P < 0.01$  except as noted; method of comparing differences in correlation coefficients described in Fischer, 1973; p. 283). In all of these comparisons except for the Disability category, the Self-Friend correlation was higher than the Self-Leader correlation. All other such comparisons were non-significant.

The hypothesis that subjects rated themselves as more similar to prospective leaders and ideal friends on categories on which they rated themselves highly was evaluated by taking advantage of the significant sex differences in self-ratings of 8 of the 11 categories. A Wilcoxon test on the differences between male and female Self-Leader and male and female Self-Friend correlations for these 8 categories with significant sex differences indicated a highly significant ( $P < 0.025$ ) tendency for the Self-Friend and Self-Leader correlations to be higher for the sex which rates these traits higher in the self ratings (Table 5). Testing for significant differences between specific correlations within this framework, the male Self-Leader correlation for Athletic Ability was higher than the female Self-Leader correlation, while the female Self-Friend and Self-Leader correlations for Sociability were higher than the corresponding male correlations, and the female Self-Leader correlation for Distress was higher than the corresponding male Self-Leader correlation (all  $P < 0.05$ ; method for testing for differences between correlations in independent populations described in Fischer, 1973; p. 284). All other such comparisons were non-significant.

Table 4. Correlations between Self-Friend and Self-Leader

Category	Self-Friend	Self-Leader	SF-SL <sup>a</sup>
Physical attractiveness	0.263	0.276	-0.013
Athletic ability	0.541	0.367	+0.74**
Academic success	0.175	0.187	-0.012
Disability	0.283	0.366	-0.083*
Intimacy/warmth	0.550	0.441	+0.109**
Conscientiousness	0.340	0.289	+0.051
EAS distress	0.195	0.147	+0.048
EAS fear	0.231	0.168	+0.063
EAS anger	0.221	0.182	+0.039
EAS activity	0.536	0.449	+0.087**
EAS sociability	0.579	0.360	+0.219**

<sup>a</sup> Self-Friend correlation minus Self-Leader Correlation.  
 \* Self-Friend correlation significantly different from Self-Leader,  $P < 0.05$ .  
 \*\* Self-Friend correlation significantly different from Self-Leader,  $P < 0.01$ .

Table 5. Correlations between Self-Friend and Self-Leader separately by sex on categories that show a sex difference on the self ratings

Correlations	Self-Friend correlations			Self-Leader		
	Males	Females	Males-Females <sup>a</sup>	Males	Females	Males-Females
<b>Males &gt; Females</b>						
Physical attractiveness	0.339	0.225	+0.114	0.453	0.209	+0.242 <sup>b</sup>
Athletic ability	0.479	0.497	-0.018	0.317	0.330	-0.013
<b>Females &gt; Males</b>						
Intimacy/warmth	0.524	0.510	+0.014	0.437	0.435	+0.002
Conscientiousness	0.347	0.318	+0.029	0.312	0.204	+0.108
EAS distress	0.213	0.148	+0.065	0.213	0.040	+0.173 <sup>b</sup>
EAS fear	0.226	0.237	-0.011	0.196	0.141	+0.055
EAS activity	0.540	0.532	+0.008	0.423	0.545	-0.122
EAS sociability	0.641	0.396	+0.245 <sup>b</sup>	0.392	0.209	+0.183 <sup>b</sup>

Wilcoxon  $t = 25$ ;  $P < 0.025$ .  
<sup>a</sup> Males-Females and Females-Males indicate differences between male and female correlations.  
<sup>b</sup> Self-Friend correlation significantly different from Self-Leader.

DISCUSSION

One of the main purposes of this study was to empirically establish the dimensions of the “resource space” for individuals in their peer relationships and to show that the resource space utilized when assessing peer relationships varies depending on the putative role of the peer (friend vs leader) and that it does so in a manner that is predictable on the basis of the evolutionary theory of sex.

Although there may well be other dimensions to this resource space which are unexplored in this study, the factor analyses of the present set of questionnaire items generally yielded a rationally interpretable, robust set of factors which indeed varied depending on putative role and sex. Subjects tended to view themselves in a more differentiated manner than when viewing the characteristics of potential ideal friends or leaders. Especially in the case of females, the factor analysis of the self version yielded 10 of the 11 factors which were *a priori* hypothesized to represent independent dimensions of the resource space as conceptualized in the combined EAS/RAS. However, for both friend and leader there were fewer factors and the factors which emerged in the self version were combined in the friend and leader version into large “superfactors” accounting for a relatively high percentage of the variance.

This conflation of factors in the friend and leader versions is presumably because when appraising oneself one is simply describing oneself on a variety of dimensions rather than thinking about oneself as a resource to be utilized for a particular purpose by another person. When thinking about ideal friends or leaders, however, one is thinking about a possible ideal rather than describing any real person. As a result, a variety of positive traits become intercorrelated even though in reality individuals in fact vary independently along the same dimensions revealed in the factor analyses of the self version. Thus even though one may be quite aware that it is possible to be academically

competent without having a great deal of athletic ability or physical attractiveness when describing oneself, these features in fact go together in the ideal friend.

While the factor analyses for males and females were quite similar in general, the finding that females clearly separated EAS Sociability and RAS Intimacy/Warmth items while males did not, is highly compatible with evolutionary predictions. Sociability typically emerges with items related to extraversion in Factor 1 of the Five-factor model (Buss & Plomin, 1984; Digman, 1990; McCrae & Costa, 1987; Norman, 1963) or Eysenck's E superfactor (Eysenck & Eysenck, 1975). A sociable person enjoys the company of others but there is no implication that such a person has close, intimate, confiding relationships with these other individuals. The Intimacy/Warmth items, however, tap this latter type of relationship.

The ANOVA results also supported the prediction that Intimacy/Warmth would be a more important resource for females than for males. Females score themselves higher on Intimacy/Warmth than males and rate this characteristic as more important in an ideal friend and an ideal leader (although this latter difference was only a trend) than do males. Further, there was a suggestion that females valued Intimacy/Warmth more in an ideal friend than an ideal leader, as would be expected on the basis of resource/reciprocity theory: Intimacy/Warmth is expected to be a prime resource for females in assessing individual variation in ideal friends.

These findings reflect the predicted sex difference in the relative salience of intimacy and personal warmth as resource for females when appraising an ideal friend. Females, because of the importance of close relationships as an indication of paternal investment (Buss, 1991; Hinde, 1984; MacDonald, 1988, 1992), are expected to be more interested in intimacy and warmth in relationships of friendship and are expected to be better able to discriminate between the extensive but shallow relationships of a sociable person and the relatively intensive and intimate relationships tapped by the Intimacy/Warmth dimension. Being high on the Intimacy/Warmth dimension results in females seeking and enjoying bonded relationships, including relationships with males who invest in their children. Males on the other hand are expected to be less attracted to committed, intimate relationships but more concerned about power and status within the peer group. Indeed, the developmental literature indicates that while the peer relationships of males tend to be extensive and characterized by relatively shallow relationships with a large number of other males within a dominance hierarchy, those of females tend to be intensive and directed toward a close circle of intimate associates (Savin-Williams, 1987).

This general sensitivity to the distinction between these types of relationships is reinforced by the finding that items related to trust, perseverance and dedication loaded on the Intimacy/Warmth factor on the Self and Friend versions for females: for females, engaging in intimate relationships is expected to be extremely costly because reproduction is very costly. As a result, it is not surprising that such relationships are associated with beliefs about the conscientiousness and level of commitment of the partner. It is not that females are unaware that these items can be separated: on the Leader version the items for Intimacy/Warmth and those related to trust loaded on distinct factors, just as they did with the males on all versions.

Several other mean sex differences on the Self, Friend and Leader versions presented in Table 3 fit well with previous results as well as the evolutionary expectations. Females scored themselves as well as prospective friends and leaders higher on Fear items in the EAS. Buss and Plomin (1984) also found that females rated themselves higher on the Fear dimension, a finding which conforms to evolutionary predictions (MacDonald, 1988, 1995). Females, because they are the high investment sex, are expected to take fewer risks and are therefore expected to be more prone to fear and behavioral inhibition.

The finding that females were higher in the EAS Distress factor, although not reported by Buss & Plomin (1984), is also compatible with this perspective, since the category includes negative emotions of being fretful, troubled and "emotionally upset"—emotions which would appear to reflect the more defensive, cautious orientation which is expected to be characteristic of females from an evolutionary perspective (MacDonald, 1988, 1995). Consistent with this perspective, it should also be noted that the fear and distress items tended to load on the same factor for both sexes.

Males, on the other hand, rated themselves as well as prospective friends and leaders as higher on Physical Attractiveness, Athletic Ability and Academic Success. The self-ratings on athletic

ability may simply reflect real physical differences between males and females, but it is more plausible to suppose, given the overall pattern of these results, that males are simply more aware of the importance of these characteristics for males' success in their social relationships. Weisfeld and Billings (1988) note that the traits of physical attractiveness and athletic ability tend to be correlated with each other among adolescent boys not only in our culture but cross-culturally as well, and that for males they are associated with popularity, social dominance, high self-esteem and with attractiveness to females. They note that the trait of being a successful athlete among contemporary adolescents and young adults "presumably made their Pleistocene male ancestors good hunters, warriors and progenitors" (p. 220). The present results show that males are well aware of the importance of these traits for social status among male peers as well as attractiveness to females. Males also appear to be more concerned than females that leaders and friends be academically successful. Here the relative importance of academic ability may simply reflect the importance of this trait for male success in the contemporary world, although it is also quite possible that attending to differences in intelligence has been important throughout human evolution.

The sex differences in self-ratings of athletic ability and physical attractiveness may reflect the typical pattern in which males exaggerate their own attributes when these attributes are positively related to social status. For example, it is a well-known finding that boys exaggerate their position in the peer dominance hierarchy, and Krebs, Denton and Higgins (1988) show a general pattern in which self-perceptions can be distorted in an adaptive manner such that the person has increased self-confidence, perseverance, and self-esteem. The general tendency to "accentuate (and even over-accentuate) the positive" among males can be viewed as an aspect of the general male bias toward systems related to extraversion, risk taking, sensation seeking, and social dominance (MacDonald, 1988). Males are expected to err on the side of exaggerating positive aspects about themselves, presumably because these tendencies result in a positive self-image and sense of power and confidence needed when behaving assertively and even aggressively in the world. Thus males are much more likely to attribute failure to external causes and success to themselves. Females on the other hand are more inclined to negative self-evaluations and corresponding feelings of relative powerlessness expected as an aspect of a more conservative, cautious evolutionary strategy. Supporting this expectation, in the present study, females rated themselves higher on the EAS Fear and Distress dimensions.

The general finding that individuals rated themselves as higher on several positive resource dimensions and lower on disabilities than ideal friends or leaders can be interpreted in several ways. The results may reflect a "self-bias" in ratings of resources. Subjects may have unrealistic beliefs about their own resource value so that they are inclined to think themselves as superior to ideal friends or peer leaders and thereby enjoy increased self-confidence, perseverance and self-esteem (Krebs *et al.*, 1988). Another interpretation, compatible with this, is that subjects may want friends who are somewhat lower in resource value than themselves because they would prefer to have a relatively strong position within the friendship. This possibility is highly compatible with the proposed importance of self-interest in human social relationships as proposed by resource/reciprocity theory. Similarly, the results for the ideal leader may reflect a sort of levelling ideology in which ideal leaders are not expected to be superior to oneself. Nevertheless, as indicated by the correlational data discussed below, the results also indicate a basic similarity between the self-ratings and ratings for friend and leader (although the Self-Friend correlations tended to be higher than the Self-Leader correlations).

The differences between ideal friend and ideal leader are particularly interesting because they indicate that people evaluated others differently depending on the prospective role the other is to play in their lives. Ideal leaders were expected to be higher than ideal friends in scales intended to tap variation in physical attractiveness, intelligence, conscientiousness, activity and sociability, while they were expected to be lower in emotionality and disabilities—traits which may well be important in a leader. Ideal friends, on the other hand, were expected to be higher than prospective leaders in athletic ability and Intimacy/Warmth—traits which are presumably more important for a successful friendship. These findings are empirical confirmation that individuals evaluate phenotypic (and by implication, genotypic) variation differentially depending on the function other individuals are expected to play in their lives—a point which is central to the present study and which is amplified below.

Finally, the correlational data replicate many studies which offer support for the importance of similarity for friendship for both children and adults (Epstein, 1989; Rushton, 1989). As predicted by Resource/Reciprocity theory, ideal friends were expected to be more similar to self than were ideal leaders. Of the three categories for which the Self-Friend correlation was less than the Self-Leader correlation, it is noteworthy that the only significant difference was for the Disability category ( $P < 0.05$ ). As expected by the resource/reciprocity theory, these results suggest that similarity to friend will be less in a situation in which the category is not a resource and especially so in the case in which the category is actually a liability.

However, the findings also show highly significant correlations between self and ideal leader for all 11 categories. Clearly, there is a great deal of commonality in conceptions of ideal friends and leaders as well as important differences. These latter correlations would appear to be more consistent with a generalized phenotypic matching mechanism, since such a mechanism would emphasize the importance of general similarities for any relationship, such as Self-Leader, which may involve altruism. As indicated in the Introduction, the resource/reciprocity theory has no basis for predicting this general, indiscriminate similarity among self, friend, and leader, while such similarity is expected on the basis of genetic similarity theory.

Thus the results summarized in Table 5 indicate that females tended to be more similar to friends and leaders on traits which they were high on relative to males, and males were more similar to friends and leaders on traits which they were high on relative to females. Subjects thus do not seek similarity in friends and leaders on all categories indiscriminately, but tend to focus on categories which are highly salient to themselves. This finding is not incompatible with the general finding that both prospective leaders and ideal friends were found to be similar to self. Nevertheless, the suggestion is that subjects' ratings of ideal friends and leaders tend to be biased in the direction of traits which they themselves are high on. These resources then become a sort of badge by which the person evaluates and seeks similarity in others, while traits on which the subject is relatively low are of less importance for similarity.

The factor analytic results for the "tall" item are an interesting microcosm of the relative importance of similarity and resource value in human relationships. On the Friend and Leader versions this item loaded positively for both sexes on the powerful first factor which included a large number of items related to physical attractiveness, athletic ability, and academic intelligence. Presumably these results reflect the fact that relative height is a resource in social relationships, but the two sexes were differentially interested in similarity in height for prospective leaders and ideal friends. The Self-Friend correlation for "Tall" was a non-significant 0.067 for females and a highly significant 0.514 for males. Similarly, the Self-Leader correlation for "Tall" was a non-significant 0.048 for females, and a highly significant 0.319 for males. Clearly males are much more conscious of the importance of similarity in height in human social relationships than females. Females are not particularly concerned to be similar to friends or leaders in height, but males are quite concerned about this dimension, and more so in the case of a friend with whom one would be engaging in continuous social interchange. (The difference between the Self-Friend and the Self-Leader correlations for height in males is significant at  $P < 0.01$ .)

## CONCLUSION

These results offer a highly promising beginning to developing an evolutionary perspective on the importance of a wide range of individual differences in human relationships. As indicated above, the traits measured here are known to be highly heritable. The implication, then, is that the genetic variation underlying this phenotypic variation is being evaluated differently depending on the varying interests of the individual, whether as friend or leader and depending on one's own relative standing on these dimensions. Genetic variation along a number of independent dimensions may thus be seen as a set of resources in human social relationships. The young adult subjects of the present study are clearly highly interested in several dimensions of phenotypic variation and, implicitly, genetic variation when they assess others as ideal friends or leaders, and they have perceptions of their own standing on these dimensions. There is good evidence that individuals who possess several of these highly valued traits have an advantage in certain types of social relationships

and in filling certain types of social roles (Weisfeld & Billings, 1988)—an advantage that, at least in the environment of evolutionary adaptiveness, would presumably have been associated with increased reproductive success.

From the theoretical perspective developed here, the study can be seen as a sort of microcosm of the evolutionary process. Individuals are keenly aware of individual differences in their social world. They evaluate themselves and others on the basis of their standing within this resource space and on the basis of their own interests. These interests can vary depending on whether the person is being evaluated as a possible friend or as a possible leader and presumably many other possible roles as well (e.g. mate, business partner, etc.). Interests can vary also depending on which traits are most salient to the individual. The end result of all of these individual choices then becomes an important aspect of the human evolutionary process.

And underlying all these appraisals is the role of genetic variation in influencing the phenotypic variation on the basis of which the choice is made: When one chooses a certain type of person to be a leader (or mate or business partner) one is implicitly choosing to favor certain genetic combinations over others. Since other individuals often answer to a variety of different human interests, a wide variation in personality and other traits is valued. Although extreme personality types would appear to be maladaptive, there is no reason to suppose that there has been selection for an "ideal" personality type. The wide diversity of individuals resulting both from genetic variation and developmental plasticity would be able to occupy different social roles and have differing balances between caution and impulsivity.

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