The Matching Hypothesis Reexamined

S. Michael Kalick and Thomas E. Hamilton III
University of Massachusetts, Boston

Although experimental tests have not tended to support the matching hypothesis, correlational studies have consistently found positive intracouple attractiveness correlations among actual couples. The present investigation sought to reconcile the findings of experimental and correlational studies by probing the relation between individual choices and systemwide patterns of couple formation. This was accomplished through the use of a series of mate-selection simulations. In the first simulation, the hypothetical individuals were given no awareness of their own attractiveness level, but they were programmed to demand an attractive partner; in the second simulation, they sought a partner who matched their own attractiveness level; and, in the third simulation, they used a combination of these two criteria. Each simulation culminated in a substantial intracouple attractiveness correlation. Most notably, the simulation based on pure attractiveness seeking produced a correlation in the upper range of those reported in actual studies of existing couples. Thus, it is inappropriate to infer that existing research has established a substantial role of matching in social choice. The use of models such as those provided by the simulations is proposed as a means of facilitating backward inference from systemwide patterns to the individual choices and behaviors that may produce these patterns.

It might be said that beauty has brought an embarrassment of riches to social psychologists. The physical attractiveness variable has proven to be powerful beyond initial expectations (cf. Berscheid & Walster, 1974), and it has figured in more than 500 recent studies (Cash, 1981). However, the success of this variable, the multitude of advantages attractive people have been found to enjoy, gives substance to deep misgivings such as that voiced by a prominent early contributor: “We would hate to find . . . that beautiful women are better liked than homely women—somehow this seems undemocratic” (Elliot Aronson, quoted in Berscheid & Walster, 1974, p. 158).

The matching hypothesis, which in broad terms asserts that men and women of similar attractiveness levels are drawn to one another as romantic partners, offers relief for our misgivings at least in the realm of courtship and mate selection. Beautiful women, and handsome men, may appear to enjoy an advantage, but in the end we all seek our own level of attractiveness, and everyone winds up with an equal chance of coming away with a “good match.” The tyranny of beauty is thus weakened and a degree of democracy is restored. Although this theme of democracy restored has never been formally proposed along with the matching hypothesis, it does seem to be an implicit connotation that perhaps helps explain the popularity of the hypothesis and the substantial body of research it has generated.

If popularity can be measured in acceptance by textbook authors, the matching hypothesis has done quite well indeed. Of the 19 current social psychology texts we have examined, which feature a variety of approaches to the field, 13 devote space to this hypothesis. It is generally introduced in words to the effect that

Similarity in attractiveness between two partners is important. Research has supported the matching hypothesis that people tend to relate to people who approximately equal them in evaluated beauty. . . . In the abstract we may prefer the most attractive person, but in more reality-based settings we choose someone who is close to our own level of attractiveness. (Deaux & Wrightman, 1984, pp. 148–149)

Examination of the research record shows that the matching hypothesis was not readily supported by early observations. The classic Walster dating study (Walster, Aronson, Abrahams, & Rottmann, 1966) examined dating choice among participants in a large college dance organized by the investigators. Contrary to expectations, similarity between a subject’s and his or her date’s attractiveness did not influence liking for the date, desire to date again, or actually asking for another date. Each of these variables, however, was significantly predicted by the date’s physical attractiveness regardless of the subject’s own attractiveness level. After a subsequent study also failed to find evidence of matching, Walster (1970) concluded that, “The consistency of our failure to secure predicted results, in spite of
unusual experimental efforts, has succeeded in convincing us that the matching hypothesis, which seemed so plausible, is not an important determinant of romantic preferences” (pp. 252-253). Yet apparently such was the appeal of the notion of matching that Walster joined in another quest for the phenomenon, in an article (Berscheid, Dion, Walster, & Walster, 1971) that has since become a standard reference in the field.

Berscheid et al. (1971) manipulated the perceived probability of rejection (POR) in a dating situation; they assumed that when chance of rejection is made salient, people will tend toward partners of their own attractiveness level in order to strike a compromise between desire for a very attractive partner and fear of social failure. Berscheid et al. found that the POR variable had no effect on choice of a partner, but there was a significant matching effect in each of two separate experiments. Attractive subjects, both male and female, chose significantly more attractive partners than did unattractive subjects. However, a reexamination of the data shows that the significant matching tendency was in both experiments overpowered by a pure attractiveness effect: All subjects, whatever their own attractiveness, tended to choose highly attractive partners. For example, in one study the very attractive subjects chose partners averaging 6.84 on an attractiveness scale ranging from 0 to 8, whereas very unattractive subjects chose partners averaging 6.26—a significant difference. However, when one realizes that the very attractive subjects’ own scores on this scale averaged about 7.0 and the very unattractive subjects’ averaged about 1.0, it becomes apparent that the choice of an attractive partner far outweighed the tendency to match on attractiveness.

Fortunately, Berscheid et al. offered a thorough presentation of their data, facilitating reinterpretation, and indeed others (e.g., Wetzel & Insko, 1982) have already noted that only a weak matching effect was found. However, secondary sources have regrettably tended to distort the findings toward the schema associated with the matching notion. For example, a not atypical current textbook states, “If experimentation had been the only method of examining the matching hypothesis, it might not have survived the initial series of tests. However, when actual couples have been observed and the attractiveness of male and female partners compared, the results have consistently supported the notion of matching. For example, Silverman (1971) found an unusual degree of similarity in the attractiveness ratings of men and women who were going together. Murstein (1972), using more rigorous methodology, found a significant correlation of .38 between partners’ attractiveness scores based on judges’ ratings of the photographs of premarital couples. Later research showed this finding not to be a fluke. For example, similar procedures have yielded intracouple attractiveness correlations of .39 (Price & Vandenberg, 1979), .53 (Critelli & Waid, 1980), and .42 (Feingold, 1981). Indeed, on the basis of research that is more suggestive than definitive owing to relatively small sample sizes, it appears that intracouple correlations are greatest for the most firmly bonded couples. Murstein and Christy (1976) found a husband–wife correlation of .60 among couples married for a number of years, considerably higher than the correlation of .38 Murstein had earlier found among premarital couples. White (1980) found an intracouple correlation of .56 for serious daters, as compared with .18 for casual daters and .63 for engaged or married couples. McKillip and Riedel (1983) found a similar pattern of correlations among self-described casual daters ($r = .256$), steady daters ($r = .370$), and committed couples ($r = .484$). In light of the consistently significant findings of real-world correlational studies, Murstein and Christy (1976) commented on the weakness or absence of matching in the earlier experimental research to the effect that, “This failure of equity was shown to be a function of the contrived nature of the experiments” (p. 537).

Still, if the correlational research has verified the truth of the matching hypothesis, what contrived feature of the experimentation prevented it from showing up convincingly there? Also, why is matching apparently stronger among more firmly established couples, when the hypothesis was framed with reference to dating choices in the initial stages of relationships? Explanations thus far have been thought-provoking but not fully satisfying. Murstein (1976) has asserted that the competitive social marketplace ultimately brings about matching. White (1980),
in a careful longitudinal study of couples at various stages of commitment to one another, sought to compare equity with marketplace explanations of the matching phenomenon. His conclusion was that the marketplace analogy appears to be more parsimonious; that is, mismatched couples are unlikely, and unstable, because the more attractive partner has many alternatives, rather than because the potential couple-mates feel ill at ease over their imbalance. McKillip and Riedel (1983) weighed exchange considerations against the fear of social rejection and concluded that exchange considerations are more important in bringing about matching. Each of these explanations remains vague with regard to the individual choices and decisions that are made while the rather close matching of committed couples is being produced.

Greater clarity may be possible once the matching hypothesis itself is better understood. What has at various times been referred to, and tested, as the matching hypothesis in fact encompasses at least three separate propositions. The first, and strongest, form of the matching hypothesis is the proposition that people actually tend to prefer partners of their own attractiveness level. The second, intermediate form of the hypothesis holds that although people may prefer to have a highly attractive partner, various real-world considerations cause most to lower their sights and choose prospective partners of about their own attractiveness level. This view thus distinguishes between social preference and social choice. The third and weakest variant of the matching hypothesis is simply the proposition that matching occurs; this variant is neutral with regard to whether the perception of matching ever enters into individual decision making.

Although the strongest form of the matching hypothesis has not been formally proposed, there is some evidence that people feel we ought to prefer a similarly attractive mate (i.e., seek our own level). Bar-Tal and Saxe (1976) showed subjects side-by-side slides of a man and woman described as husband and wife. The attractiveness level of each stimulus person was varied. The investigators found that similarly attractive couples were thought to be more happily married than dissimilarly attractive couples. Most pointedly, an unattractive person of either sex was seen as happier when paired with an unattractive partner than with an attractive partner. If people applied this assumption to themselves, it might cause them to lower their romantic preferences. However, there is little reason to believe that this actually occurs.

Walster et al. (1966) and then Berscheid et al. (1971) originally conceived the matching hypothesis in its intermediate form as specified above. Modeling their conceptual framework after level of aspiration theory (Lewin, Dembo, Festinger, & Sears, 1944), they saw the choice of a dating partner as a compromise between preference for an ideally attractive partner and fear of social rejection by a sought-after partner whose high level of attractiveness makes him or her unavailable. This is certainly a plausible notion. However, although level of aspiration theory has successfully predicted task behavior as well as social behavior in a task-oriented situation (see Rosenfeld, 1964), several factors stand in the way of level of aspiration processes bringing about matching in dating choice. First, there is the requirement that one be aware of one's own attractiveness level. Evidence indicates that this awareness is quite imperfect. Moreover, it is far from clear how people deal with the awareness that their perception of their attractiveness is quite imperfect.

Murstein's (1972) research with college students found that the correlation between judge-rated and self-estimated attractiveness was .24 for women and .33 for men—significant in both cases but quite modest in size. Clearly, there is much to be learned about the "market value" of one's appearance through one's pattern of acceptance and rejection by prospective partners in the course of dating. However, this period of dating is the very time when matching itself occurs. It may be argued that the matching process is to a great extent the cause rather than the effect of one's knowledge of one's own attractiveness level.

Various rituals of the courting process may at least partially obscure the exchanges involving attractiveness even from those doing the exchanging. Research by Bernstein, Stephenson, Snyder, and Wicklund (1983) found that people tend to exploit ambiguity when approaching an attractive dating prospect (i.e., Jack may seek to "make time" with Jill by asking her to help him prepare for an exam rather than by asking her for a date). Conversely, Folkes (1982a) has found that social rejection tends to be cloaked in ambiguity and deception, with impersonal, unstable causes emphasized and personal, stable causes downplayed. (For example, Jill may tell Jack that friends from out of town are visiting, and she has no spare time at the moment, rather than simply saying she has no interest in spending time with Jack.) Thus, the "players" may be kept somewhat in the dark about their risks, their losses, and their true chances. Even once market values are discovered, certain biases in social perception may cause them to be discounted. Mashman (1978) and Marks and Miller (1982) found that subjects assume they share greater attitude similarity with attractive than unattractive stimulus persons, particularly on involving issues. Jack may thus realize that Jill is much more attractive than he, but he may conclude that this won't matter once she discovers how much they have in common. These considerations make plausible the conjecture that, in the "mating game," we might accurately gauge what sort of outcome we can reasonably expect only once we have gotten it.

It is important to note that the intracouple correlations reported earlier confirm only the weakest form of the matching hypothesis, which simply asserts that matching occurs, and not the intermediate form that the experimentation was designed to test. This point must be emphasized, because the repeated findings of intracouple matching on attractiveness seem to imply that people possess at least some degree of motivation to match on this characteristic. In fact, no such motivation need exist.

The more general manifestation of the matching phenomenon, known as positive assortative mating, has long been a concern among ethologists. Recently, Burley (1983) explained to that audience why, in mating, correlation need not imply motivation. The following is a condensation of her major points:

Positive assortative mating (or homogamy) occurs when individuals of similar phenotype mate more often than expected by chance. ... When we observe that individuals in mated pairs tend to be similar regarding some feature, it is easy to conclude that "like prefers like." ... Yet drawing on contemporary evolutionary theory, it can be argued strongly that homotypic preference may not be the process responsible for the occurrence of positive assortative patterns. ... For any phenotypic gradient along which individuals can be ranked in terms of their quality/desirability as mates, high-quality individuals will tend to pair assortatively. In a
finite population, this will leave lower quality individuals to mate among themselves, not because they prefer to mate assortatively, but because their own desirability precludes them access to better mates. (p. 192)

Burley went on to recommend experimentation as the method of choice for determining the degree to which any given instance of positive assortative mating is due to homotypic preference (like preferring like) versus type preference (a single hierarchy of preference being shared by all).

However, in the realm of human mate selection, experimentation is quite limited in the degree of invasiveness or manipulation allowable. Therefore, all possible measures should be taken to render observed patterns of real-world mate selection maximally interpretable.

Clearly it is no simple matter to infer the nature of individual choices and motivations that produce an aggregate mate-selection pattern. The problem, as already stated, is that different individual motivations can lead to the same final pattern. Therefore one must observe the process across time, seeking to garner bits of unambiguous evidence. Longitudinal studies of couples (e.g., Hill, Rubin, & Peplau, 1976; White, 1980), charting relationships as they deepen or dissolve, are a useful source of evidence because they can capture and examine individual decisions as they are made.

In addition, it seems evident that researchers can benefit from the availability of explicit models of aggregation, linking specific hypothesized motives on the individual level with precise across-time patterns of mate selection that can be expected in the collectivity. To this end, we have developed a computerized mate-selection simulation and applied this simulation toward clarifying the phenomena associated with the matching hypothesis. The remainder of our remarks will be devoted to the simulation and its current application.

A Mate Selection Simulation

Simulations are widely used in physical science, business, economics, and social science as an aid for understanding complex systems (Dutton & Starbuck, 1971; Watson & Christy, 1982). Large systems are represented as encompassing smaller, simpler parts, which are often expressed in terms of mathematical formulas. The component parts behave in a specified manner, and an accounting system is used to chart the systemwide consequences of this behavior (Armstrong & Hobson, 1975). The usefulness of this methodology stems from the fact that simple, preprogrammed behavior of the constituent parts may lead to interesting, surprising results in the system as a whole, shedding light on how the system as well as the parts actually function.

A simulation, for our purposes, must generate a number of hypothetical men and women, assign them phenotypic characteristics, produce encounters between eligibles, and allow the eligibles to accept or reject one another based on their own and/or their potential partner's characteristics. A complete simulation should consist of a series of these encounters—iterations in computer terms, dates in more metaphorical terms. The process should continue until a specified criterion is reached, for example, the completion of some total number of dates or the joining of some percentage of the individuals in couples. Also, ample provision should be made for chance factors to have an influence upon who encounters whom and upon individual accept/reject decisions as well. In our simulation design, we adopted a specific procedure for fulfilling each of these requirements.

The Ran-Match Simulations

The simulation procedure to be described makes use of Fortran, a well-known programming package that is commonly used for simulation modeling (Watson & Christy, 1982). This computer package can generate random numbers and use them to make probabilistic decisions, a central feature of the present approach. The simulations below involve the following steps:

1. A specified number (presently, an equal number) of hypothetical male and female participants are generated, and each is permanently identified.
2. Each hypothetical individual is assigned a single "characteristic" in the form of a random number from 1 through 10. For present purposes, 1 may be thought of as the lowest level of attractiveness, 10 the highest level, and the intermediate numbers the appropriate levels in between. The attractiveness level assigned to each individual remains permanently attached to that individual throughout each run of a simulation.
3. All of the men and women are randomly paired for a "date."
4. This date consists of each individual making a decision whether to accept or reject his or her partner. The decision is in part probabilistic. The probability of acceptance is a specified function of the partner's attractiveness and/or the individual's own attractiveness.
5. A man and woman paired on a date become a successful couple if and only if he decides to accept her and she decides to accept him. If either or both decide to reject, no couple is formed.
6. Successful couples are removed from the pool of eligibles and placed in a separate pool.
7. Characteristics of successful couples are recorded at the end of each date.
8. The remaining eligible men and women are randomly re-paired for a new date (i.e., new iteration).
9. Steps 3 through 8 are repeated as many times as necessary for a criterion to be reached. In the simulations below, the criterion is that all of the individuals become part of a couple. This goes beyond the degree of couple formation expected in the real world (which always contains some "singles"), for the purpose of charting each simulation pattern in its entirety.

The probability function mentioned in Step 4 above can be used to simulate a variety of mate-selection preferences. For the present, one simulation assumes that mate preference is based entirely on the partner's attractiveness, another assumes that preference is based on the degree of matching, and a third simulation assumes a combination of motives to match and to obtain an attractive mate. The outcome data, charted across the progress of each simulation, include the average attractiveness of individuals who form couples as well as the intracouple attractiveness correlations. Large samples are generated to assure statistical reliability (i.e., for 1,000 couples, an intracouple correlation of .11 is significant at the .001 level).
Simulation 1: Preference for an Attractive Partner

**Method.** One thousand hypothetical male and 1,000 female participants were generated, each was randomly assigned an attractiveness level between 1 and 10, and the men and women were randomly paired for a date. Each then decided whether to accept his or her partner as a potential couple-mate. On the first date produced by the simulation, the probability of accepting one’s partner was purely a function of the partner’s attractiveness. This function is expressed as follows:

\[ P_1 = \frac{(A_p)^3}{1,000} \]

In this formula, \( P_1 \) is the probability of acceptance, and \( A_p \) represents the partner’s attractiveness level. Thus, if one were paired with a partner whose attractiveness level was 10, one would be certain to accept him or her, whereas a partner whose attractiveness level was 1 had only 1 chance in 1,000 of being accepted. By extension, two individuals of the highest attractiveness level, if paired, were certain to accept each other, whereas two individuals of the lowest attractiveness level had only one chance in a million of mutually deciding to form a couple. Intermediate attractiveness levels were given intermediate probabilities, as expressed by the formula. The actual accept/reject decision was made by having Fortran generate a random decimal between 0 and 1 and designating the decision as an acceptance only if the probability function was equal to or greater than the random decimal. This process was repeated separately, with a new random decimal, for each hypothetical participant.

The mutually accepting pairs were removed into a pool of successful couples, and the remaining men and women were randomly re-paired for the simulation’s second date. For this and subsequent dates, a correction was introduced in the acceptance probability function. Individuals were made to become gradually more lenient in their decisions as they passed through increasing numbers of unsuccessful dates. This corresponds to the reported phenomenon whereby stimulus persons seem to become “prettier toward closing time” (Pennebaker et al., 1979). The modification was brought about through use of the following function:

\[ P_{tc} = \frac{(A_p)^3(51-d)/50}{1,000} \]

Here, \( P_{tc} \) is the corrected probability of acceptance, \( A_p \) is again the partner’s attractiveness level, and \( d \) is the date number. Thus, on the second date, \( d = 2 \). Note that on the first date of the simulation, this new function is identical to the previous one. However, the probability of acceptance gradually increases across time until by the 51st date, any partner is certain to be accepted. Still, on any given date up to the 51st, the probability of accepting one’s partner is an increasing monotonic function of the partner’s attractiveness.

For each new date, the remaining eligible men and women were randomly paired. Thus, daters who failed to form a couple could again find themselves together on a subsequent date. This matter was left up to chance.

**Results.** Figure 1 charts the course of the simulation. Note that the sample size increases from left to right, as only successful couples are included. The figure plots cumulative intracouple attractiveness correlation and cumulative mean attractiveness against the percentage of all 1,000 men and 1,000 women who have been successfully paired. The cumulative mean attractiveness curve indeed assumes a shape that suggests a pure type preference for attractiveness. Mean attractiveness of the first successful couples was very high (8.10 after the first date), but the cumulative mean gradually dropped toward the overall population mean as less and less attractive individuals finally joined in couples as well. The final 10.2% of individuals to join in couples averaged only 2.04 in attractiveness.

The intracouple attractiveness correlation takes a quite different shape in Figure 1. For much of the simulation it hovered near zero, but then it steadily climbed. Statistical significance (\( p < .05 \)) was not achieved until 53.1% of the participants had formed into couples. At that point the correlation was a mere .09. However, the statistic then rose quite steeply until it reached a level of .55 once all couples were paired. The explanation for this pattern is that, because the members of early couples tended to be highly attractive, the distribution of attractiveness was at first quite truncated. Within this truncated distribution, no intracouple correlation appeared. When additional couples were formed and lower attractiveness levels were more fully represented, the intracouple correlation increasingly emerged.

The substantial intracouple attractiveness correlation that appeared in the mature stages of this simulation clearly illustrates how such a correlation can occur in the absence of any motivation to match on this characteristic. Indeed, the hypothetical male and female participants in this simulation were not aware of their own attractiveness level.\(^1\) However, as attrac-

---

\(^1\) Individuals low in attractiveness, tending to find themselves unattached after many dates, did gradually become more accepting owing to the corrected probability function. It may be argued that this constitutes gradual discovery of one's own attractiveness level. To explore the implications of this observation, a simulation was run using \( P_1 \) throughout instead of \( P_{tc} \). One hundred simulated male and 100 female participants were used, instead of 1,000 of each, to conserve computer time. A pattern emerged that was quite similar to that shown in Figure 1. At 40% couple formation, the intracouple attractiveness correlation was -.01. At 50% couple formation, the intracouple correlation reached...
tiveness was a highly desirable trait, the attractive members of both sexes tended to be accepted into couples most quickly. Then, across the simulation, couple formation gradually rippled down the attractiveness hierarchy. In the end, boyfriend's attractiveness and girlfriend's attractiveness correlated quite positively with each other simply because both these variables were strongly (and negatively) correlated with the number of dates required before one successfully became a boyfriend or girlfriend.

**Simulation 2: Preference for a Similar Partner**

*Method.* Again, 1,000 male and 1,000 female participants were generated. The same sequence of steps was used as in the previous simulation. However, this time, on any given date, one's probability of accepting one's partner was a function of the degree of similarity between the partner's attractiveness and one's own. This function is expressed in the two formulas below:

\[
P_2 = \frac{(10 - |A_2 - A_2|)^3}{1,000} \tag{1}
\]

and

\[
P_{2c} = (P_2)^{(1 - d) / 50}. \tag{2}
\]

Here, \(P_2\) is the basic probability of accepting one's partner used on the first date, and \(P_2\) is the general probability function, incorporating the same correction factor as was used in the previous simulation. Thus, \(d\) stands for date number. In addition, \(A_2\) is a person's own attractiveness level, and \(A_2\) represents the attractiveness level of his or her partner on a date. It can be seen that if \(A_2\) and \(A_2\) are equal, one is certain to accept one's partner. However, if the two attractiveness levels are maximally different (i.e., if one is 10 and the other is 1), the chance of accepting one's partner is 1 in 1,000. Intermediate degrees of similarity produce intermediate probabilities, and the correction factor makes all acceptance probabilities gradually increase toward 1 across dates, reaching this level by the 51st date if any eligible men and women remain to be paired.

*Results.* A glance at Figure 2 shows that the matching motivation established for this simulation led to a pattern of couple formation quite different from that produced by the attractiveness preference of Simulation 1. This time both the mean attractiveness of couple members and the intracouple correlation remained flat throughout the simulation. The cumulative mean attractiveness, quite unremarkably, hovered near the mean of the underlying population at all times. The intracouple attractiveness correlation varied from .85 after the first date to .83 when 100% of the individuals were in couples. The correlation after the first date was significant at well beyond the .001 level of probability. Clearly, when men and women have a strong homotypic preference on a given trait, this preference shows up quickly and decisively in the couples formed.

**Simulation 3: Combined Preference for an Attractive Partner and a Similar Partner**

*Method.* Once more, 1,000 male and 1,000 female participants were generated, and the same basic sequence of steps was used. In this simulation, the probability of acceptance was based on the partner's attractiveness level and also on the degree of similarity between one's own and one's partner's attractiveness. The probability function is expressed as follows:

\[
P_3 = \frac{P_1 + P_2}{2} \tag{1}
\]

and

\[
P_{3c} = (P_3)^{(1 - d) / 50}. \tag{2}
\]

Thus, the basic probability function here, \(P_3\), is the arithmetic mean of \(P_1\) taken from the first simulation and \(P_2\) taken from the second simulation. Note that \(P_1\) and \(P_2\) are used here merely as abbreviations of the formulas given earlier. The familiar correction factor produces \(P_{3c}\), the probability function used in this simulation.

*Results.* Figure 3, which charts the progress of this simulation, appears substantially more similar to Figure 2 than to Figure 1. Although attractive persons tended to become part of a couple somewhat sooner than unattractive persons, the cumulative mean attractiveness curve declines much less steeply here than in Figure 1. Also, the cumulative correlation curve is essentially flat in this case, like that of Figure 2 (although the correlations are somewhat lower) and unlike that of Figure 1. The intracouple attractiveness correlation was .74 after the first date, a figure easily significant at the .001 level. When all participants had formed couples, the correlation was .70. Evidently, when a preference for attractiveness and a preference for matching are present in about equal strength, the overall pattern of mate selection reflects the matching preference more strongly than the attractiveness preference.

**Simulations Compared**

To summarize the above observations, a pure preference for an attractive partner led to a stratified pattern of couple forma-
The purpose of a simulation procedure such as the RanMatch is to help delineate relations between “molecular” events and outcomes in a macroscopic system. In contrast with econometric models, which begin with plausible molecular assumptions and try to predict developments in a large economy (Clark & Cole, 1975; Meier, Newell, & Pazer, 1969), the present effort has been to facilitate backward inference from the macro to the micro level. The goal is to arrive at models that allow researchers to look for specific patterns in the social system, knowing that these patterns are likely to be produced by characteristic sorts of individual behavior.

No more than a preliminary step toward this goal has been taken by the present simulations. They represent an extreme simplification, using only one characteristic and one motive per simulation. Indeed, the extensive use of randomizations and probabilistic decisions was a concession to the fact that much remains unknown. A number of future modifications may be introduced in the basic simulation design to make it more like. For example: (a) Preferences may be made milder or more drastic. (b) The trait distribution may be modified. In the present simulations, attractiveness was distributed in a uniform random manner, with a level of 10 as likely to occur as 5 or 6. Greater real-world verisimilitude might well be obtained through use of a normalized random distribution. (c) Different preferences (i.e., different probability functions) may be distributed across the population rather than a single one being imparted uniformly. For example, it would be interesting to see what systemwide selection pattern emerges when low selectivity tends to accompany low attractiveness (cf. Burley, 1983; Cunningham, 1976). (d) More than one characteristic may be imparted on each hypothetical individual. (e) More sophisticated probability functions may be used. For example, although our mixed-motive simulation posits that the probability of acceptance is an additive combination of partner’s attractiveness and partner’s similarity to self in attractiveness, future simulations may incorporate the suggestion by Shanteau and Nagy (1979) that a multiplicative combination of these two variables would better predict dating choice. (f) Individuals may be paired for a date on the basis of specific criteria rather than completely randomly. (g) Individuals may be given the option of choosing another date with the same partner in addition to the present extreme options of acceptance (i.e., couple formation) and rejection. (h) Provision may be made for couples’ breaking up and reentering the pool of eligibles.

The basic RanMatch simulation program was designed to incorporate each of the above modifications in a quite straight-
Discussion

Although the elaborations mentioned above may be useful additions, the simulations in their current form do have implications regarding the matching hypothesis. Simulation 1 concretely demonstrated the manner in which matching on attractiveness can ultimately occur even though acceptance or rejection is never based on matching but only on the partner's attractiveness. Therefore it is demonstrated that the weakest and the intermediate form of the matching hypothesis, discussed earlier, are truly empirically distinct. The weakest form of the hypothesis, simply asserting that matching occurs, has been verified by the consistent reports of intracouple attractiveness correlations (e.g., McKillip & Riedel, 1983; Murstein, 1972; Murstein & Christy, 1976; White, 1980). The intermediate form, which asserts that the actual choice of a partner is in some substantial degree based on matching, has not been convincingly established by existing research.3

It should not escape notice that Simulation 1 concluded with an intracouple attractiveness correlation of .55, which coincides with the upper range of correlations in the research cited earlier. Simulations 2 and 3, which were based on a matching motive and a mixed motive, produced correlations that were higher than those that have actually been reported. However, this comparison must be interpreted with caution, owing to the simplicity of the simulations; for example, measurement error was probably a factor in the real-world findings, whereas it was absent from the simulations. It should also be noted that the pattern of increasing intracouple correlation that occurred across time in Simulation 1 (and not in the other two simulations) seems to coincide with a trend, reported in the above research, for casual couples to be only weakly correlated in attractiveness, whereas more deeply committed couples are much more strongly correlated in this regard. The surprising (and still speculative) conclusion based on the simulations is that this trend is more likely to stem from an attractiveness-seeking motive than from any motivation to match.

Experience in working with a model increases the number of questions one can ask when looking at the findings of past research. An example is the manner in which Simulation 1 sharpened our observation of a recent study by Folkes (1982b). This investigation charted members of a dating service in terms of behavioral steps taken toward a relationship. Members had access to photos and videotapes of potential partners, who of course had similar access to them. The behavioral steps charted included the following: (a) A member seeks another member's phone number; (b) the target person releases his or her phone number; (c) phone contact is made; (d) the persons meet; (e) the persons meet a second time. The finding was that the couples were more strongly correlated in this regard. The surprising (and still speculative) conclusion based on the simulations is that this trend is more likely to stem from an attractiveness-seeking motive than from any motivation to match.

Experience in working with a model increases the number of questions one can ask when looking at the findings of past research. An example is the manner in which Simulation 1 sharpened our observation of a recent study by Folkes (1982b). This investigation charted members of a dating service in terms of behavioral steps taken toward a relationship. Members had access to photos and videotapes of potential partners, who of course had similar access to them. The behavioral steps charted included the following: (a) A member seeks another member's phone number; (b) the target person releases his or her phone number; (c) phone contact is made; (d) the persons meet; (e) the persons meet a second time. The finding was that the couples were more strongly correlated in this regard. The surprising (and still speculative) conclusion based on the simulations is that this trend is more likely to stem from an attractiveness-seeking motive than from any motivation to match.

2 We intend to make the Ran-Match program available to other researchers. Inquiries in this regard should be directed to S. Michael Kalick.

3 The strongest form of the matching hypothesis, which requires a distinction between social choice and social preference, is the most difficult to test empirically. Note that our discussion of the Ran-Match simulations has used preference, choice, and motivation interchangeably. Operationally separating these constructs would require more elaborate modifications than those mentioned above.

Table 1

cumulative couple formation and intracouple attractiveness correlations in simulations using different mate-preferences

<table>
<thead>
<tr>
<th>Date</th>
<th>Simulation 1 (Attractiveness)</th>
<th>Simulation 2 (Matching)</th>
<th>Simulation 3 (Combined)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% in couples r</td>
<td>% in couples r</td>
<td>% in couples r</td>
</tr>
<tr>
<td>1</td>
<td>5.6 -.05</td>
<td>26.7 .85**</td>
<td>13.4 .74**</td>
</tr>
<tr>
<td>2</td>
<td>12.2 -.06</td>
<td>48.6 .84</td>
<td>26.4 .74</td>
</tr>
<tr>
<td>3</td>
<td>16.5 -.09</td>
<td>61.6 .84</td>
<td>36.5 .72</td>
</tr>
<tr>
<td>4</td>
<td>21.8 -.02</td>
<td>71.8 .85</td>
<td>44.5 .73</td>
</tr>
<tr>
<td>5</td>
<td>24.9 -.01</td>
<td>79.0 .85</td>
<td>51.7 .72</td>
</tr>
<tr>
<td>6</td>
<td>28.3 -.02</td>
<td>84.3 .84</td>
<td>59.1 .73</td>
</tr>
<tr>
<td>7</td>
<td>31.3 -.03</td>
<td>88.9 .84</td>
<td>64.2 .73</td>
</tr>
<tr>
<td>8</td>
<td>34.1 -.02</td>
<td>91.3 .84</td>
<td>69.0 .73</td>
</tr>
<tr>
<td>9</td>
<td>36.1 -.03</td>
<td>94.0 .85</td>
<td>73.0 .72</td>
</tr>
<tr>
<td>10</td>
<td>38.7 -.01</td>
<td>95.3 .85</td>
<td>77.3 .71</td>
</tr>
<tr>
<td>11</td>
<td>40.2 -.02</td>
<td>96.1 .85</td>
<td>80.5 .71</td>
</tr>
<tr>
<td>12</td>
<td>42.2 -.05</td>
<td>97.3 .85</td>
<td>83.5 .70</td>
</tr>
<tr>
<td>13</td>
<td>43.9 -.06</td>
<td>98.3 .85</td>
<td>86.2 .71</td>
</tr>
<tr>
<td>14</td>
<td>45.3 -.07</td>
<td>98.8 .85</td>
<td>88.7 .71</td>
</tr>
<tr>
<td>15</td>
<td>46.2 -.07</td>
<td>99.2 .85</td>
<td>91.6 .71</td>
</tr>
<tr>
<td>16</td>
<td>47.7 -.07</td>
<td>99.4 .84</td>
<td>93.7 .72</td>
</tr>
<tr>
<td>17</td>
<td>49.0 -.07</td>
<td>99.6 .84</td>
<td>94.8 .72</td>
</tr>
<tr>
<td>18</td>
<td>50.7 -.08</td>
<td></td>
<td>95.8 .71</td>
</tr>
<tr>
<td>19</td>
<td>53.1 -.09*</td>
<td></td>
<td>96.2 .71</td>
</tr>
<tr>
<td>20</td>
<td>54.8 -.11</td>
<td></td>
<td>97.2 .71</td>
</tr>
<tr>
<td>21</td>
<td>56.8 -.12</td>
<td>99.7 .84</td>
<td>97.7 .71</td>
</tr>
<tr>
<td>22</td>
<td>57.5 -.12</td>
<td></td>
<td>98.3 .71</td>
</tr>
<tr>
<td>23</td>
<td>58.7 -.13</td>
<td></td>
<td>98.5 .71</td>
</tr>
<tr>
<td>24</td>
<td>59.8 -.14</td>
<td></td>
<td>98.8 .71</td>
</tr>
<tr>
<td>25</td>
<td>61.2 -.15</td>
<td></td>
<td>99.2 .71</td>
</tr>
<tr>
<td>26</td>
<td>63.4 -.17</td>
<td></td>
<td>99.3 .71</td>
</tr>
<tr>
<td>27</td>
<td>64.5 -.19</td>
<td></td>
<td>99.4 .70</td>
</tr>
<tr>
<td>28</td>
<td>65.2 -.20</td>
<td></td>
<td>99.6 .70</td>
</tr>
<tr>
<td>29</td>
<td>66.8 -.22</td>
<td></td>
<td>99.8 .70</td>
</tr>
<tr>
<td>30</td>
<td>68.3 -.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>70.2 -.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>71.8 -.27</td>
<td></td>
<td>99.9 .70</td>
</tr>
<tr>
<td>33</td>
<td>73.2 -.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>74.8 -.30</td>
<td>99.8 .84</td>
<td>100 .70</td>
</tr>
<tr>
<td>35</td>
<td>76.6 -.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>78.4 -.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>79.9 -.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38</td>
<td>81.8 -.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39</td>
<td>84.4 -.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>86.7 -.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>87.4 -.44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>42</td>
<td>89.6 -.46</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43</td>
<td>91.8 -.48</td>
<td>99.9 .83</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>94.5 -.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>95.7 -.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>97.1 -.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>98.3 -.53</td>
<td>100 .83</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>99.1 -.54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>99.7 -.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>100 -.55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05,
**p < .001.

Forward manner.2 Note, however, that these modifications could not by themselves be used to shed light on individual behavior, only on the relation between individual behavior and outcomes on a systemwide level.
who took more steps along this progression were less discrepant in attractiveness than those who took fewer steps. Folkes concluded that these findings support the matching hypothesis, in that similarity of attractiveness was an important factor in predicting progress toward couple formation.

However, Folkes's reported findings do not rule out a pure attractiveness-seeking effect. If members of the dating service simply used the criterion that they would only accept prospective partners who were very attractive, regardless of their own appearance, then successful couples would be found to be unusually similar in attractiveness simply because both happened to be very attractive, not because similarity or matching played any direct role in their choices. In Simulation 1, the mean intra-couple attractiveness discrepancy after two dates was 1.87, significantly less than the mean expected chance discrepancy of 3.3 (z = 6.67, p < .001), solely because men and women who formed couples on these early dates both tended to be very attractive. If the men and women comprising Folkes’s successful couples tended to be unusually attractive and if their intra-couple attractiveness correlations were nonetheless quite low (see Figure 1), our rival hypothesis would be affirmed. The crucial data are not available in the published study, but familiarity with the model provided by Ran-Match should make this omission less likely in the future.

The findings of the present simulations may also offer useful suggestions for the design of future real-world observations. For example, it would be most interesting to observe a large sample of eligibles over time beginning from some meaningful “time zero”—such as a large coeducational freshman class beginning with their arrival on campus. If the early couples were quite attractive compared with the larger population but displayed a negligible intracouple correlation, and if average attractiveness of all couples declined as more couples formed while intracouple correlation increased, the evidence would point to a dominant role of pure attractiveness seeking in determining couple formation. A key point here is that percentage of the population in couples and relative attractiveness of those in couples versus those without partners (do they in fact tend to hold out as described above?) and those with partners unlike them in attractiveness (does relative attractiveness tend to be exchanged for other personal assets?), as well as those who happen to be closely paired.

The vagaries of the matching hypothesis must, it would seem, be divided to be conquered. The weakest form of this hypothesis, the assertion that matching per se occurs, has been verified by correlational research. The strongest form of the hypothesis, linking matching with social preference in mate selection, has been the least studied but in implicit form is perhaps popularly assumed. The intermediate form, linking matching with social choice, remains in doubt; in the future, it may be studied experimentally or through real-world observation with the assistance of appropriate models of aggregation. The Ran-Match simulation program, designed to help provide such models, may also find uses in other contexts.

References


Received September 25, 1984
Revision received March 23, 1985