

Accuracy and Bias in the Perception of the Partner in a Close Relationship

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Partners in close relationships can be both accurate and biased in their perceptions of each other. Moreover, sometimes a bias can lead to accuracy. The authors describe a paradigm for the simultaneous measurement of accuracy and bias in 2-person relationships. One prevalent bias in close relationships is assumed similarity: Does the person think that his or her partner sees the world as he or she does? In a study of 238 dating and married heterosexual couples, the authors found evidence for both bias and accuracy; the bias effects were considerably stronger, especially when the measure was linked to the relationship. They found little or no evidence for gender differences in accuracy and bias.

Researchers have long been interested in interpersonal perception within relationships. Much of the early interest focused on actual similarity, assumed similarity, and accuracy of perception as predictors of marital quality (Levinger & Breedlove, 1966; Murstein, 1970). More recent studies have examined how attributions about the partner (Bradbury & Fincham, 1990) and idealization of the partner (Murray, Holmes, & Griffin, 1996) affect relationship satisfaction.

In this article, we describe a methodology that simultaneously measures both accuracy and bias and that builds on the pioneering work of Newcomb, Laing, and Cronbach. We also extensively tested the model using a sample of dating and married couples.

Sources of Accuracy and Bias in Close Relationships

The focus of this article is on the set of perceptions that a person might have about his or her partner. Some examples of such perceptions are as follows:

Mary thinks that her husband John likes his job.

Bill thinks that Jane enjoyed the movie *Titanic*.

Sam thinks that James is happy today.

Jane thinks that Helen enjoys being with her.

In each case, one person attempts to know the feelings of another person. Although mind reading has long been a research interest (e.g., Laing, Phillipson, & Lee, 1966), there has recently been a considerable resurgence of interest in the topic (Ickes, 1997; Kenny, 1994; Kenny & DePaulo, 1993).

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The research was supported in part by National Science Foundation Grant DBS-9307949 and National Institute of Mental Health Grants RO1-MH46567 and RO1-MH51964. We thank Lynn Winquist and Reuben Baron, who provided very helpful comments.

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The naive prediction is that persons would be more accurate in close relationships than in relationships that are not close. First, persons in close relationships are strongly motivated to be accurate. Valid perceptions would likely lead to better predictions (Swann, 1984), and therefore accuracy of perception is likely a strong motive in close relationships. Second, perceivers in close relationships have many more opportunities to observe their partner than do others. Third, people may be more willing to disclose to their partner their inner feelings. So motive, opportunity, and information should lead to an accuracy advantage for those in close relationships. There are, however, several reasons for considering that closeness may not confer any strong advantage in accuracy.

First, formal models of accuracy show that increased acquaintance has a relatively weak effect on accuracy. As shown in Kenny's PERSON model (Kenny, 2000), increased acquaintance does not lead to as great an increase in accuracy as might be naively thought. The model shows that acquaintance does tend to increase accuracy, but most of that increase occurs very early in the acquaintance process. Additionally, if stereotypes have a kernel of truth, as some (Lee, Jussim, & McCauley, 1995) have argued, and if stereotypes are used primarily when the perceiver has just met the target, then increasing acquaintance results in little or no increase in accuracy. This view is consistent with the "thin slices" perspective of Ambady and Rosenthal (1992), who have argued that small amounts of information have surprising validity.

Second, according to the analyses of Sillars and Scott (1983) and Ickes and Simpson (1997), there is a strong motivation to see the close partner in particular ways that might not be valid. For instance, Murray et al. (1996) have documented strong idealization effects, and Marks and Miller (1987) have shown that assumed similarity effects are common in social perception and are even more common in close relationships (Schul & Vinokur, 2000). Thus, the perceptions that people have of close others are often assumed to match some idealized prototype: "My partner is like me" or "My partner is good."

Just as it can be important to see the partner in some ways, it can be just as important to not see the partner in other ways. As Ickes and Simpson (1997) and Krackhardt and Kilduff (1998) have argued, it can be threatening to see a relationship partner in

particular ways (e.g., as being "bad" or attracted to someone else). Harkening back to Newcomb (1953), the two people have a unit relationship and certain beliefs would undermine the integrity of its existence. So seeing the partner as "bad" or as "disagreeing" would make one question the value of the relationship. Because close relationships become part of the person's self-concept (Aron, Aron, Tudor, & Nelson, 1991), their demise is a threat to the person's very identity. So being in a close relationship may bias the person to see the partner in particular ways that may not be valid.

Third, perceivers in close relationships may feel that they already know the target well, and so they do not need to pay much attention to him or her (Kenny & DePaulo, 1993; Thomas & Fletcher, 1997). During the early stages of the relationship (e.g., courting in romantic relationships), people may closely monitor their partners' behavior, but once the relationship is viewed as committed, monitoring of the partner declines. Common sense tells us, perhaps wrongly (Swann & Gill, 1997), that closeness confers knowledge of the other, and so we are experts about the close other. As Swann and Gill (1997) and Griffin, Dunning, and Ross (1990) have documented, over-confidence pervades judgments of relationship partners.

The problem of failing to monitor the partner is further compounded if the partner changes. That is, the perceiver's views of his or her partner may have been relatively accurate at an earlier stage in the relationship. However, the partner and the relationship may have changed, and the perceiver may have failed to recognize these changes, and so there is no updating of the perceptions. Because close relationships often endure for decades, failures to update can be especially problematic. For example, parents' perception of an adolescent's ability may be more related to the child's skill at an earlier age than at the current age. It is perhaps ironic that people's very expertise about knowing the other at one time point undermines the accuracy of their perceptions later.

Fourth, following the analysis of Sillars and Scott (1983), much of what is perceived in close relationships is private and so cannot be consensually validated. One important source of information about a target is communication from others (Kenny, 1991), and so communication is one way to enhance the accuracy of perceptions. However, many important partner behaviors and communications occur in isolation from others. For example, a partner who is verbally abusive during arguments may seem pleasant and nice to the partner's in-laws. Thus, in close relationships, the perceiver cannot always take advantage of the knowledge of others.

In summary, there are reasons to expect both accuracy and bias in the perception of close partners. At the extremes, totally biased perceivers cannot be accurate, and totally accurate perceivers cannot be biased. However, social perception ordinarily contains a mix of bias and accuracy (Kenny & Albright, 1987; Kenny, Bond, Mohr, & Horn, 1996). It is of critical importance to simultaneously measure both effects.

Sometimes biases can lead to accuracy (Dawes & Mulford, 1966; Hoch, 1987). Consider the bias of assumed similarity. In perceiving the partner, the perceiver does not have perfect information and so must guess, at least somewhat, how his or her partner feels. Because the perceiver and partner usually have similar views about the various issues (Epstein & Guttman, 1984), it is reasonable for the perceiver to use his or her own view about the issue to infer the partner's views (Higgins, King, & Mavin,

1982; Markus, Smith, & Moreland, 1985; Sillars, 1985). This combination of actual and assumed similarity leads to accuracy.

As Hastie and Rasinski (1988) have emphasized, all too rarely are accuracy and bias directly compared. The paradigm developed in this article provides a direct comparison of the two effects. Moving beyond the accuracy versus bias question, the more interesting question is simultaneously determining the proportion of accuracy and bias and how that ratio varies depending on what is being perceived. The literature on interpersonal perception in intimate relationships suggests that what is being perceived (or the target of perception), in part, determines the ratio of bias to accuracy. On the basis of earlier work (Levinger & Breedlove, 1966; Sillars, 1985), we would expect bias to increase (compared with accuracy) with the extent to which the perceptual referent is central to the perceiver's intimate relationship. Sillars (1985) illustrates how the emotionality of the close relationship can sometimes interfere with one's accuracy in perceiving the feelings of one's partner. Thus, we examined variables that have differing degrees of relevance to one's intimate relationship and expected to see more bias with more relevance. For example, we would expect more bias in persons' perceptions of their intimate partners' feelings of closeness to themselves than we would with person's perceptions of their partners' job satisfaction.

The Basic Paradigm

Consider the feelings of closeness that two persons, A and B, have toward each other and their perceptions of their partner's feelings toward themselves. Both A and B have such feelings and perceptions. Thus, we have four variables: (a) A's feelings of closeness to B, or F_A ; (b) A's perception of B's feelings of closeness toward A, or P_{AB} ; (c) B's feelings of closeness to A, or F_B ; and (d) B's perception of A's feelings of closeness toward B, or P_{BA} .

A model of the links among the four variables is presented in Figure 1. The closeness feeling measures, denoted as F_A and F_B (in which the subscript refers to the perceiver), are treated as predictor variables, and the perceptions of closeness, denoted by P_{AB} and P_{BA} (in which the first subscript refers to the perceiver and the second to the target of perception), are treated as outcome variables. The four paths in the figure represent accuracy and bias in perception for the two persons. The two accuracy paths are the

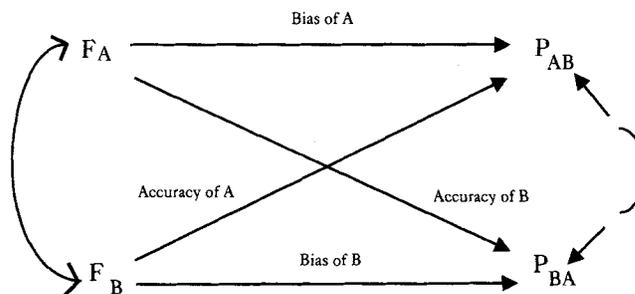


Figure 1. Model of the feelings of A and B (F_A and F_B) and the perceptions of each person of the partner's feelings (P_{AB} and P_{BA}); accuracy being the paths from F_A to P_{BA} and F_B to P_{AB} , bias the paths from F_A to P_{AB} and F_B to P_{BA} , and actual similarity the correlation between F_A and F_B .

diagonal paths from F_A to P_{BA} and F_B to P_{AB} . The two bias paths are the horizontal paths from F_A to P_{AB} and F_B to P_{BA} . These paths are referred to as *bias* in that they refer to the extent to which the perceiver is assuming similarity: The partner of the perceiver is assumed to see things the same way as the perceiver does. Assumed similarity has also been referred to as false consensus bias, projection, and social projection (Krueger, 1998).

According to Cronbach (1955), there can be correlation between the feelings that A has toward B and B's perception of those feelings, yet the accuracy effect can be zero. A correlation between F_A and P_{BA} (or between F_B to P_{AB}) would result if there were bias (a path from F_B to P_{BA}) and the two persons are actually similar (a correlation between F_A and F_B). So if Alice thinks that she and Betty have the same feelings, and in fact they do, then Alice will necessarily be accurate at perceiving Betty's feelings. Finally, error is represented by the disturbance or residual term. Figure 1 includes four different phenomena in interpersonal perception: accuracy, the bias of assumed similarity, accuracy through the combination of assumed and actual similarity, and error. Moreover, three of these phenomena can be measured for each member of the couple, that is, from A to B and from B to A.

The model in Figure 1 presumes that reality gives rise to perceptions. However, the causality might operate in the other direction. Perceptions often create the reality that they are assumed to reflect. These self-fulfilling perceptions may be intrapersonal; for instance, if a person feels that the partner is not close, that person him- or herself then becomes distant. The self-fulfilling perceptions can also be interpersonal; for instance, if a person thinks that his or her partner is distant, that may cause that partner to actually become distant. So the arrows in Figure 1 represent a set of predictive, but not necessarily causal, relationships.

Whereas the model depicted in Figure 1 may be new, previous theorists and methodologists have considered variants of it. Newcomb (1953), in his coorientation theory, considered the degree of balance between F_A , F_B , and P_{AB} . If a person has a unit relationship with another person, the person would be motivated to be oriented to the world as the partner is, and, hence, the two are cooriented. Cronbach (1955) and others emphasized that accuracy can occur through a combination of actual and assumed similarity. Theorists of interpersonal perception (Laing et al., 1966; McLeod & Chaffee, 1973; Sillars & Scott, 1983) have discussed the relationship between perceptions. Murray et al. (1996) and Neyer, Banse, and Asendorpf (1999) essentially estimated the model in Figure 1, but we are more explicit about measuring both accuracy and bias in the dyadic context.

One key piece of information provided in Figure 1 is the relative size of accuracy and bias in close relationships. Although it might be thought that accuracy would dominate over bias, social psychologists have traditionally emphasized the tendency for perceivers to be biased in their social perceptions. One need only consult a social psychology text to note the myriad of possible biases in social perception. One bias, assumed similarity, is a topic that has been extensively studied (Krueger, 1998; Marks & Miller, 1987). However, emphasis increasingly has been given to processes that result in accuracy (Hastie & Rasinski, 1988; Kenny & Albright, 1987).

Gender Differences

One of the advantages of the model presented in Figure 1 is that both accuracy and bias are measured for both persons. Consider that Person 1 (the husband) is married to Person 2 (the wife). Accuracy from two different sources could be measured: Does the husband know the wife and does the wife know the husband? Two types of bias can also be measured: Does the husband assume that he is similar to his wife and does the wife assume that she is similar to her husband? We refer to the two sources of accuracy and bias as *male* and *female accuracy* and *male* and *female bias* for reasons of economy of presentation. However, it should be realized that both accuracy and bias are dyadic phenomena. Women may be less accurate than men are because male targets are more difficult to understand than are women.

Research generally shows that women are more accurate perceivers than men are (Hall, 1984). Moreover, other research shows that women are more expressive than men are and are easier to read (Hall, 1984). Thus, if perceptions are between men and women, then the reasonable expectation is minimal gender differences. If accuracy and bias do not vary between men and women, the two estimates can be pooled into a more precise single estimate of accuracy or bias.

The Present Study

Using a survey of 238 dating and married couples, we first estimated the model contained in Figure 1 for five different variables. Four are considered directly relevant to one's well-being in the relationship (closeness, caring, equity, and enjoyment of sex), one (job satisfaction) is considered less (or indirectly) relevant to one's relationship, and one set is intermediate (feelings of closeness to family). We compared the relative amount of accuracy and bias and also considered whether there are gender differences in accuracy and bias. We then considered a more complex model of perceptions of feelings of closeness toward one's own and one's partner's family. For these variables, we can estimate two sources of bias and one accuracy effect. These variables are considered to be moderately relevant to one's relationship, and so would be expected to have less bias than would the four relationship-relevant variables, but more bias than would perceptions of partner's job satisfaction.

Method

Respondents

This study was part of a larger project on married and unmarried couples. Professional interviewers collected the data from the Survey Research Center at the Institute for Social Research. We believe that this is the first area probability sample of its kind. Interviewers screened 2,319 households in the tricounty Detroit metropolitan area to obtain an area probability sample of 238 couples. To avoid complications of studying remarriage, we restricted the study to people who had never been married or who had been married only once. An unmarried couple would be eligible only if both partners had never been married and if they had been in the relationship for 6 months or more. Married couples were eligible if both partners were in their first marriage and had been married 25 years or less. Overall, there was a 70% response rate, meaning that 70% of those couples (both partners) who were eligible agreed to participate in this study. The sample was composed of 90 unmarried couples and 148 married couples.

The average length of time in the relationship was approximately 10 years for all couples ($M = 3.3$ years for unmarried couples, and $M = 13.9$ years for married couples). The average length of marriage was 11.3 years. Respondents' ages ranged from 18 to 59 years, and the mean age was 33. For personal income, 50% of respondents' personal income was below \$20,000. For household income, counting everyone living in the household, 42% of the households had incomes below \$40,000. The average educational level was 1 year of postsecondary education. The ethnic background of the sample was 73% White, 21% Black, 3% Asian or Pacific Islander, 2% American Indian or Alaskan Native, and 1% Hispanic. For more details on the sample, see Acitelli (1997).

Standardized face-to-face interviews were conducted in the respondents' homes. Both partners of each couple participated individually in 90-min interviews out of hearing range of one another. Respondents were asked questions about their lives together as a couple. The current study analyzed responses to a subset of questions focusing specifically on closeness, caring, equity, enjoyment of sex, job satisfaction, and closeness toward own and partner's family.

Measures

Our measures were adapted from the Early Years of Marriage (EYM) project (Veroff, Douvan, & Hatchett, 1995). Because the EYM project consisted of all married couples, we changed the wording so that the questions could apply to both married and unmarried couples. We considered two sets of variables. In the first set were reports of one's own feelings from both members and their perceptions of their partner's feelings. The variables are feelings of closeness, caring feelings, equity, enjoy sex, and job satisfaction. To measure feelings and perceptions of closeness, we asked each respondent, "How close do you feel to your [husband/wife/partner]?" and "How close do you think [he/she] feels to you?" Responses ranged from (1) *not close at all* to (5) *extremely close*. For equity, each partner was asked, "All in all, considering how much each of you puts into your relationship, who would you say gets more out of this relationship, (1) *you*, (2) *your [husband/wife/partner]*, or (3) *both about equal*?" and "How do you think your partner would answer that?" [given the same response choices]? For caring feelings and perceptions, participants were asked, "How often in the past month did you feel especially caring toward your [husband/wife/partner]?" and "How often during the past month did you feel that your partner feels especially caring toward you?" Responses ranged from (1) *never* to (4) *often*. To assess sexual enjoyment, we asked partners how often they felt "that your sexual life together was joyful and exciting?" and how often they thought their partners felt the same way (with the same 4 response choices as in the caring feelings and perceptions item). To assess job satisfaction, we asked, "In general, how satisfied are you with your job, would you say you are (1) *very satisfied*, (2) *somewhat satisfied*, (3) *somewhat dissatisfied*, or (4) *very dissatisfied*." The same question was asked about the job satisfaction of the participant's partner. We measured feelings and perceptions for both male and female participants. Thus, there were four measures on each variable for each couple.

The second set of variables examined feelings of closeness to own and partner's families. Each member of the couple was asked to report their own feelings of closeness toward his or her own and partner's families and asked to perceive how close his or her partner felt toward his or her family and the partners' family. For example, we asked, "How close do you feel toward your own family?" and "How close do you think your [husband/wife/partner] feels to your family?" Responses ranged from (1) *not at all close* to (4) *very close*. These same questions were asked about the partner's family. Thus each partner was asked four questions (perceptions and feelings about one's own family and perceptions and feelings about one's partner's family), so there were eight items for each couple.

There were small amounts of missing data for most of the measures. However, for job satisfaction, if one member of the couple was not working for pay, the variable was considered missing and thus there was a considerable amount of missing data for this variable.

Analysis

The estimation of the model in Figure 1 is relatively straightforward. When dyad members are distinguishable (e.g., one is male and one is female) as they are in this study, the paths can be estimated by multiple regression (Kenny & Cook, 1999). The couple is the unit of analysis, and the two outcome or dependent variables are the perceptions that each person has of the partner's feelings or views about the topic; the predictor variables for both regression equations are each person's own feelings or views about the topic. The model then is very similar to the path diagram in Figure 1.

Because there is interest in testing whether one member is more accurate or biased than the other member, constraints are made across regression equations. To estimate models with constraints across regression equations, a structural equation modeling program (e.g., LISREL) can be used (Kenny & Cook, 1999; See Bui, Peplau, & Hill, 1996, and Murray et al., 1996, for recent illustrations of this approach). The four paths and two correlations in Figure 1 are estimated. One correlation is between the pair of independent variables, and the other correlation is between the unexplained variation in the two outcome variables. We can evaluate whether there is a statistically significant difference between male and female perceivers by comparing the fit of a model in which the accuracy paths are set equal to the fit of the model in which the accuracy paths are free to vary. Because the test is a one-degree-of-freedom chi-square analysis, we report the square root of chi square, which is a Z statistic. A nonsignificant Z value would indicate no difference in the coefficients, and the two may be pooled. In much the same way, we can test whether the bias paths are equal, and if they are, we can estimate a model that forces them to be equal.

In estimating the models, it is essential that the coefficients are not separately standardized for each member, otherwise the coefficients are not comparable across partners. The safest course of action is to avoid standardizing and to report the unstandardized coefficients. Measures of perceptions use the same metric as do measures of feelings, so the unstandardized coefficients are readily interpretable across partners. We used the computer program LISREL 8 (Jöreskog, 1997) for our analyses.

The model for feelings of closeness to the family variables is somewhat complex in that there are four predictor variables (two families and two partners) and four criterion variables. But the essence of the model is the same. The predictor variables are correlated with each other as well as with the disturbances of the four outcome variables. Bias and accuracy effects were estimated. We also tested whether the effects varied or were the same across gender for these variables.

Results

We first consider the following variables: feelings of closeness, feelings of caring, enjoyment of sex, and job satisfaction. Both partners of each couple were asked how they felt about each topic and how they thought that their partner felt about the same topic. Then we consider the more complex analysis of the feelings about one's own and partner's family.

Basic Cases

Table 1 presents the accuracy results for men, women, and a pooled or averaged estimate. Recall that these are the diagonal paths in Figure 1. Note that accuracy was often present, all five of the pooled effects being statistically significant. There was no evidence of any gender differences among the topics. Thus, the data support the hypothesis that men and women can predict their partners' feelings equally well. Though statistically significant, the accuracy effects were relatively weak, except for the job satisfaction variable, as predicted.

Table 1
Accuracy Effects (Unstandardized Regression Coefficients)

Variable	n	Men	Women	Pooled ^a	Z ^b
Closeness	236	.14**	.08	.12**	0.87
Caring feelings	236	.18**	.12†	.15***	0.72
Equity	233	.22**	.06	.12**	1.41
Enjoy sex	227	.05	.07†	.06*	0.43
Job satisfaction	134	.45***	.55***	.50***	0.48

^a Averaged coefficient across men and women. ^b Test that the effects for men and women are the same.

† $p < .10$ (marginally significant). * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2 presents the bias effects for which the bias is assumed similarity. The bias effects were statistically significant for all five of the pooled tests. There was one gender difference: Men assumed more similarity for closeness than did women. We might wonder if the difference is due to chance, as only one of the 10 tests for gender differences was statistically significant.

When we compare the relative size of accuracy and bias in Tables 1 and 2, it is clear that—except for job satisfaction—bias effects are larger. For instance, for enjoyment of sex, the bias effect is more than 12 times larger than the accuracy effect.

Table 3 presents a decomposition of the accuracy correlations. By *accuracy correlation*, we mean the correlation between the perception of the partner's feelings with the partner's actual feelings (e.g., between P_{AB} and F_B in Figure 1). The overall accuracy correlation equals accuracy (the direct effect) and the increment due to bias (the indirect effect), the product of actual similarity (the correlation between F_A and F_B) and assumed similarity (the path from F_A to P_{AB} or from F_B to P_{BA}).¹ We see that generally the indirect route to accuracy is nontrivial, and for the enjoyment of sex variable, the indirect effect is larger than the direct effect. People are accurate by being biased.

Bias Due to Measurement Error

For the models previously described, we conducted multiple regression analyses to measure the effects of predictor variables. To control successfully for the effects of the other variables, we had to assume no measurement error. If there were measurement error in the predictor variables, the accuracy and bias effects would be biased and our conclusions might be affected.

Table 2
Bias Effects (Unstandardized Regression Coefficients)

Variable	n	Men	Women	Pooled ^a	Z ^b
Closeness	236	.78***	.63***	.69***	2.10*
Caring feelings	236	.58***	.63***	.60***	0.54
Equity	233	.25**	.10	.17***	1.38
Enjoy sex	224	.90***	.82***	.86***	1.62
Job satisfaction	134	.12	.17†	.14***	0.89

^a Averaged coefficient across men and women. ^b Test that the effects for men and women are the same.

† $p < .10$ (marginally significant). * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3
Partitioning of the Accuracy Correlation (r)

Variable	n	Men		Women			
		r	Direct	Indirect	r	Direct	Indirect
Closeness	236	.43	.26	.18	.37	.18	.20
Caring feelings	236	.28	.17	.11	.22	.12	.10
Equity	233	.20	.20	.01	.08	.08	.00
Enjoy sex	224	.38	.08	.30	.38	.07	.31
Job satisfaction	134	.47	.45	.02	.54	.52	.02

To allow for measurement error, we created a model in which closeness and caring were treated as indicators of a single latent variable. We believed that these two measures had the greatest conceptual overlap. We allowed for correlated measurement errors between perceptions and feelings of the same measure by the same source.² We used the closeness measure as a marker variable, and to identify the model, we set the two loadings of the caring indicators for perceptions to be the same for men and women and the two loadings of the caring indicators for feelings to be the same for men and women. We found no evidence of gender differences, and so we pooled effect estimates. The pooled accuracy path was .45 ($Z = 3.25, p < .05$), and the bias path was .48 ($Z = 3.40, p < .05$). The fit of the model was quite good, $\chi^2(14, N = 234) = 17.20, p = .25$. The values were quite different from what we found in Tables 1 and 2. Note that the accuracy effect was larger and bias effect was smaller.

The changes in the estimates are not so much due to measurement error per se, but rather to the presence of correlated measurement error. As stated earlier, we correlated the errors of the perceptions and feelings when the same measure and source were used. These correlated errors were all positive and statistically significant, and they represented “measure-specific” bias. That is, if you feel close to your partner, you assume that your partner feels close to you, but you do not, to the same extent, assume that your partner has caring feelings toward you. Because of the strong correlation between the feelings of the two members (i.e., colinearity), the lower bias effect resulted in a larger accuracy effect (i.e., the “indirect” accuracy effect was weaker, making the direct effect stronger).

Complex Case

We now consider the feelings of closeness to family variables. There were some additional complexities in the analysis, model, and results. However, as we describe below, the basic structure of the analysis, model, and even the results are quite similar to what was found previously.

The analysis here was more complex than those considered previously. Each person was asked about how close he or she felt

¹ Technically this effect is not indirect or mediated because there is no causal path between F_A and F_B in Figure 1.

² We also allowed for a measure-accuracy effect by correlating the errors in the perceptions of one partner with the errors in feelings of the other partner for each measure. However, these correlations were very small and so were dropped.

toward his or her family and toward his or her partner's family: F(O) = how the female participant feels about her own family; M(O) = how the male participant feels about his own family; F(P) = how the female participant feels about her partner's family; and M(P) = how the male participant feels about his partner's family. Some notation is provided to help clarify the variables: M = male, F = female, O = own family, and P = partner's family. These variables serve as predictor variables in the regression equation.

The outcomes are the perceptions of the partner's feelings of closeness to each family: M(F[O]) = the male participant's perception of how the female participant feels about her own family, F(M[O]) = the female participant's perception of how the male participant feels about his own family, M(F[P]) = the male participant's perception of how the female participant feels about his family, and F(M[P]) = the female participant's perception of how the male participant feels about her family. Note the own (O) and partner's (P) family in this case refers to the person whose feelings are being perceived.

There are three types of relations between predictors and outcomes:

Accuracy: Does the person know his or her spouse's feelings? For example, does the man know how his partner feels about her own family?

Assumed similarity to the same object (ASSO): Does the person assume that the partner feels as close to a particular family as he or she feels? For example, does the man assume that his partner feels as close to her family as he feels toward her family?

Assumed similarity to a parallel object (ASPO): Does the person assume that the partner feels about his or her own or the partner's family the same way he or she feels toward his or her own or the partner's family? By *parallel*, we mean that the family has the same relation between the object and the perceiver. For example, does the man assume that his partner feels toward her family as he feels toward his family?

Table 4 presents these three types of effects for the different combinations of predictor and outcome variables.³ Some readers may have realized that we could have added a fourth type of effect. For instance, it might be that how close the man feels to his family

might affect how close his partner thinks he feels to her family. Because such effects would seem to be relatively implausible, they are not estimated.

Table 5 presents the effects separately for men and women. There are several results that deserve mention. There is evidence for all three types of relations: accuracy, ASSO, and ASPO. However, accuracy effects are usually the largest: People know how their partner feels about their own family and their partners' family. Although there is evidence for both types of assumed similarity effects, assumed similarity to the same object is largest: People assume that their partner feels the same way as they do about a particular family. Parallel assumed similarity effects are much weaker. Thus, to a lesser extent, people do assume that if they like their own family (or their partner's), their partners must also like their own family (or their partner's).

Both accuracy and bias effects are stronger in the guessing of the perceptions about the partner's own family. Perhaps people are much more likely to express their feelings about their own family than they are to express them about their partner's family, which would explain the greater accuracy, but not the greater bias. The fact that both accuracy and bias effects are stronger for perceptions about the partner's family is compelling evidence that the two processes are not zero-sum.

Table 6 presents the results pooled across gender. There is evidence that this model fits well in that $\chi^2(6, N = 235) = 8.64$, $p = .195$. There was, however, one statistically significant gender difference that involved judgments about one's own family. Women assumed more similarity with their partners than did men in judging their own family. So if she feels close (or distant) to her own family, she assumes that he feels the same way about her family.

As we did for the previous example, we computed how much of the accuracy correlations is due to the direct effect of accuracy and how much is due to the indirect effect of the bias of assumed similarity. As we see in Table 7, the bulk of the accuracy effect was direct, but some of the effect (about 20%) was indirect.

Discussion

We found several interesting effects. First, we found both bias and accuracy effects in all of our analyses. Second, we found variation in the relative amounts of accuracy and bias effects depending on the particular items studied. We found few, if any, gender differences. We discuss each of these sets of results, as well as the new methodology that we have developed.

Accuracy Versus Bias

We found evidence for both accuracy and bias. Every measure studied in this paper showed both types of effects. Social perception involves both accuracy and error (Kenny & Albright, 1987; Kenny et al., 1996). It is a mistake to treat social perception as entirely correct or entirely incorrect.

³ If we consider the five variables estimated in the previous section, they all are assumed similarity to the same object, but job satisfaction is assumed similarity to a parallel object. Assumed similarity to the same object for the job satisfaction variable would mean that one's partner would be as satisfied with the respondent's job as the respondent is.

Table 4
Effects as a Function of Outcome–Predictor Combination

Predictor	M(F[P])	F(M[P])	M(F[O])	F(M[O])
M(O)	ASSO	ASPO	—	accuracy
F(O)	ASPO	ASSO	accuracy	—
M(P)	—	accuracy	ASSO	ASPO
F(P)	accuracy	—	ASPO	ASSO

Note. M(F[P]) = the male participant's perception of how the female participant feels about his family; F(M[P]) = the female participant's perception of how the male participant feels about her family; M(F[O]) = the male participants perception of how the female participant feels about her own family; F(M[O]) = the female participant's perception of how the male participant feels about his own family; M(O) = how the male participant feels about his own family; F(O) = how the female participant feels about her own family; M(P) = how the male participant feels about his partner's family; F(P) = how the female participant feels about her partner's family; ASSO = assumed similarity to the same object; ASPO = assumed similarity to a parallel object.

Table 5
Estimated Effects (Unstandardized Regression Coefficients) for Predictions of Closeness to Own and Partner's Family

Effect	M(F[P])	F(M[P])	M(F[O])	F(M[O])
Accuracy	.36***	.37***	.47***	.49***
ASSO	.29***	.30***	.34***	.59***
ASPO	.03	.11†	.14**	.09†

Note. $N = 235$. M(F[P]) = the male participant's perception of how the female participant feels about his family; F(M[P]) = the female participant's perception of how the male participant feels about her family; M(F[O]) = the male participant's perception of how the female participant feels about her own family; F(M[O]) = the female participant's perception of how the male participant feels about his own family; ASSO = assumed similarity to the same object; ASPO = assumed similarity to a parallel object.

† $p < .10$ (marginally significant). ** $p < .01$. *** $p < .001$.

We have also shown that the presence of bias can even lead to accuracy enhancement. Actual and assumed similarity leads to accuracy. Because members of couples are actually similar, the assumption of similarity leads to accuracy.

We believe that researchers need to stop thinking of accuracy and bias in an either-or or dualistic manner. Psychologists need to think about accuracy and bias in a dialectical fashion (Baxter & Montgomery, 1996). Accuracy and bias coexist in the perception of others. Because person perception is social perception, the perceiver has biases that create the potential for change and transformation in social reality. If the perceiver were totally accurate, this would be impossible.

The Meaning of Accuracy and Bias

In our analyses, when measuring accuracy, we controlled for the bias of assumed similarity. It is reasonable to ask the following question: If we had controlled for all of the biases of the perceiver, would we have reduced the accuracy effect to zero? If true, then what we have labeled as accuracy in this article is nothing more than unexplained bias. Such a point of view treats accuracy as a mediated process, a view consonant with the Brunswik approach to social perception (Gifford, 1994). That view states that accuracy (or achievement) is mediated by cues that the perceiver detects. If all of the cues (or biases) could be measured (as in Brunswik's lens model; Gifford, 1994), accuracy would be eliminated.

Table 6
Pooled Estimates (Unstandardized Regression Coefficients) Across Gender for Predictions of Closeness to Own and Partner's Family (Z Test of Gender Differences)

Effect	Partner family	Z ^a	Own family	Z ^a
Accuracy	.36***	0.014	.48***	1.231
ASSO	.29***	0.051	.42***	6.905***
ASPO	.07†	0.829	.12**	0.268

Note. $N = 235$. ASSO = assumed similarity to the same object. ASPO = assumed similarity to a parallel object.

^a Test that the effects for male and female participants are the same.

† $p < .10$ (marginally significant). ** $p < .01$. *** $p < .001$.

Table 7
Partitioning of the Accuracy Correlation (r) for Closeness to the Family

Variable	Men			Women		
	r	Direct	Indirect	r	Direct	Indirect
Partner family	.42	.32	.10	.47	.36	.11
Own family	.60	.52	.08	.55	.44	.11

Note. $N = 235$.

There is, however, an alternative point of view. The Gibson view is that accuracy is not mediated (McArthur & Baron, 1983). Even if we were to adopt the Gibson position, we have to recognize that what we have called "accuracy" is actually the upper limit of accuracy. That is, the researcher may have not measured all of the relevant biases.

We also need to realize that the bias that we labeled as assumed similarity may be due to other processes besides assumed similarity. Response sets, like social desirability, might be producing the effect that we have labeled assumed similarity. Moreover, because responses for perceptions and feelings are usually temporally adjacent, the bias may be more an indication of consistency.

More generally the term bias has many different meanings. A bias can represent an attempt by a perceiver "to fill in the blanks" when there is not enough information to make a judgment (Krackhardt & Kilduff, 1998). Alternatively, a bias can represent a motive or a goal that the perceiver has that is imposed on reality (Ickes & Simpson, 1997). Also, a bias can be the use of a cue that is usually ecologically valid but is invalid in the research setting (Gigerenzer, 1996). Bias can also be used in the signal-detection sense (Haselton & Buss, 2000) to mean a response tendency used to minimize the relative cost of two errors (i.e., over- vs. underestimating). Finally, bias can be used, mistakenly we think, in the sense of error or inaccuracy (Harvey, Town, & Yarkin, 1981). No doubt these different meanings have contributed to the confusion in the use of the term.

Variation in Bias and Accuracy Across Variables

Despite this fundamental view of the combined presence of accuracy and bias, we were surprised by just how much bias we did find. Why did we find so much bias in couples' perceptions? We consider cold, cognitive as well as hot, motivational explanations of our findings. Before beginning, we need to remember that the results did change somewhat when we included measurement error and correlated measurement error in the model. Thus, some degree of caution is warranted in interpreting the differences between measures.

The cognitive explanation is that perceivers are uncertain about how to rate their partner, so they use their own feelings to infer their partners' feelings. Consistent with past theorizing and research (Dawes & Mulford, 1966; Higgins et al., 1982; Hoch, 1987; Markus et al., 1985), processes that are usually considered as bias can be accuracy enhancing.

The motivational explanation is that certain perceptions are too threatening to the person to be entertained, and so they are actively avoided. Specific perceptions about the relationship and the self

are so much part of a person's self-definition that he or she is unable to or motivated not to see the truth. Perceptions of the partner that may fundamentally threaten the relationship may be distorted (Krackhardt & Kilduff, 1998).

There is evidence in support for both of these explanations. The cognitive explanation is bolstered by the weak assumed similarity for the job satisfaction. Normally, members of couples have different jobs, and so they are less likely to use their own feelings to predict their partner's job satisfaction. There is little reason to expect the partner to have the same level of job satisfaction, and that is why similarity is not assumed. But it is reasonable to expect partners to have the same level of sexual enjoyment and caring in their romantic relationships, and that is why these variables show large assumed similarity effects. People overestimate similarity because they make judgments about themselves and others by identifying a normative standard (Fenigstein & Abrams, 1993). One standard might be that similarity is seen as synonymous with relationship satisfaction in people's minds.

The motivational explanation is bolstered by the strong assumed similarity effects overall and by the fact that the more relational questions seem to elicit stronger assumed similarity effects. Assumed similarity regarding relationship phenomena has more direct implications for the future of the relationship than would assuming similar feelings about nonrelationship phenomena (e.g., job satisfaction). Likely, as is true of many social psychological phenomena (e.g., conformity and group polarization), both motivational and cognitive explanations have some degree of validity.

Despite the findings of strong bias effects, there were still accuracy effects. We found accuracy, albeit sometimes small, in all seven variables that we studied. Moreover, when we allowed for measurement error in the model, accuracy effects were stronger. However, as predicted, accuracy was stronger than bias only for variables that are less central to the definition of a relationship (partner's job satisfaction and feelings about family). Perceptions can be accurate, but some topics may be just too threatening to know the truth (Ickes & Simpson, 1997; Sillars, 1985; Sillars, Weisburg, Burgraff, & Zeitlow, 1990). We suspect that when the perception is linked to whether there is a relationship or not (i.e., the unit relationship), bias effects will overwhelm accuracy effects. But if the perception has little or nothing to do with the relationship, then accuracy effects will overwhelm bias effects. Because we had so few items that were irrelevant to the relationship, our results are in need of replication.

Finally, our analyses clearly show that the bias of assumed similarity can result in accuracy. If people assume that they are similar when in fact they are similar, they will be accurate. In fact, for one of the measures, satisfaction with sex, most of the accuracy was due to the assumption of similarity.

Gender differences. Finally, as we predicted, we found relatively few gender differences. Of the 16 possible tests, only two were statistically significant. In one case, men were more biased than were women, and in the other case, women were more biased than were men. On the basis of these analyses, we find there is no strong evidence that men or women are any more biased.

There were no statistically significant differences in accuracy of the perceptions of men and women. Because the couples were heterosexual, it might be the case, first, that women tend to be more accurate than men and, second, that men are more difficult to read, and so these two effects cancel out each other (Hall, 1984).

The standard way of reporting data from heterosexual couples is to perform the analyses separately for men and women. No doubt one reason for this is that researchers have learned that because of the independence assumption, one should not make the person the unit. However, often the reason for separate analyses is just convention. Researchers, reviewers, and editors want to see the results broken up by gender. However, if there are no gender effects, more precise estimates are available if results are pooled across gender (Kenny & Cook, 1999; Murray et al., 1996).

A new methodology. The basic approach presented in this article allows researchers to study interpersonal perception in close relationships in more detail. We acknowledge that several other researchers have used similar approaches (see especially Murray et al., 1996). One key element is our focus on perceptions of the person. By having the person guess these perceptions, the criterion problem of accuracy research is solved. People routinely engage in mind reading, and so their accuracy is a significant question.

The logic of the approach that we developed could be extended to larger sized groups. It would be especially interesting to apply the method to the study of families. Likely, cross-generational interpersonal perception would show less assumed similarity than same-generation perception would. We suspect that adolescents might even assume that they are dissimilar to their parents.

In this article, we have limited the consideration of bias to assumed similarity. The approach can be extended to other biases. Murray et al. (1996) have shown how to study idealization effects. In general, if a variable can be measured that captures the bias (e.g., assumed similarity or idealization), then such a variable can be introduced as a predictor variable. Such an idea harkens back to the notion of studying accuracy and bias by using different scoring keys (Gage, Leavitt, & Stone, 1956).

Neglected Factors and Limitations

Except for gender, we have not considered moderator variables in this article. Both accuracy and bias might be moderated by various factors. For instance, married couples may be more (or less) accurate than dating couples are. The analysis of these types of effects is not considered in this article so as not to add more complexity to an already complicated picture. Certainly further analysis of these and other moderating variables is warranted.

We need to realize that all of the research participants were in a relationship, for at least 6 months. So this study does not directly address the question of whether people in close relationships are more or less accurate than those who are not in a close relationship. A different sample would be needed to focus directly on this question. However, a theoretical model developed by Kenny (2000) has shown that the advantage that acquaintance adds to accuracy occurs relatively early on.

We need to emphasize that the approach developed in this article is nomothetic (between couples) and not idiographic (within couples). If the desire is to measure differences between dyads in accuracy or bias, alternative methods are needed (e.g., Acitelli, Kenny, & Weiner, in press; Levenson & Ruef, 1992). Neyer et al. (1999) attempted a within-dyad analysis very much like the model in Figure 1. Note also that Thomas, Fletcher, and Lange (1997), in a within-dyad analysis, have shown that assumed similarity moderates empathic accuracy, at least for women.

Finally, we reiterate that the models that we have estimated are predictive models, not causal models. It is likely that perceptions and feelings in close relationships mutually influence each other. For instance, if a person does not think that his or her partner enjoys sex, that may cause the person to enjoy sex less. Thus, our equations should not be interpreted causally.

Conclusion

In sum, the analyses indicate that people are both accurate and biased in their perceptions of their partner. Bias seems to be moderated by the content of the question. The more it deals with whether there is a relationship, the less accurate and the more biased the perceptions. We believe that these interesting results suggest that it is indeed possible to view social perception as a mixture of accuracy and bias.

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Received August 21, 1998

Revision received February 22, 2000

Accepted April 5, 2000 ■