ON THE REDUCTION OF SELF-OTHER ASYMMETRIES:
BENEFITS, PITFALLS, AND OTHER CORRELATES OF SOCIAL
PROJECTION

Joachim I. KRUEGER
Brown University, USA

Perceptions of similarity between the self and other individuals or groups are among the most replicable findings in social-perception research. As such, they present an apparent limitation to a variety of self-other asymmetries in social judgment. I first review evidence showing that perceptions of similarity are indeed (as hypothesized) mainly a matter of projection rather than introjection. People are far more likely to project their own attributes and attitudes to others than to "introject" the attributes or attitudes of others into the self. Then, building on the well-established finding that projection improves the accuracy of social perception, I show that projection also reduces various self-other biases, such as false uniqueness, pluralistic ignorance, and self-enhancement. I conclude with a discussion of so-called "empathy gaps," in which projection actually leads to errors.

We don't see things as they are; we see things as we are.
--The Talmud

The concept of social projection refers to the common finding that people assume that others share their preferences, attitudes, and behaviors. For the first half-century after Floyd Allport (1924) introduced this idea, scattered studies demonstrated and replicated the phenomenon. At the time, the most common interpretation of projection was that people seek to protect their selfregard by assuming, without much evidence, that others are like them. In the 1970s, three studies, published almost simultaneously, galvanized theoretical interest and triggered a new spate of empirical research. After reviewing these seminal papers, I identify some of the enduring questions they raised, and discuss current answers.

Writing for a sociological audience, Fields and Schuman (1976) started out with the view that most people are fairly attuned to the public opinions of their time and that they, at least in part, align their private opinions with the opinions of the greater public. After reviewing large data sets on politi-

---

cal attitudes, however, Fields and Schuman were forced to conclude that people appear "to look into the world and somehow see their own opinions reflected back" (p. 437). This conclusion challenged the influential socio-logical theory of symbolic interactionism (Stryker & Statham, 1985), which assumes that people "are constantly aware of, and defer to, outside opinion. To the extent [however] that individuals themselves construct this aspect of social reality, they are free to pursue their own beliefs, happily persuaded that these beliefs have the support of most others around them" (Fields & Schuman, p. 445).

Writing for a psychological audience attuned to the precepts of attribution theory, Ross, Greene, and House (1977) construed social projection as "false consensus," taking the view that, if there is a correlation between estimated consensus and people's own stand on the attitude items, at least some esti-mates must be wrong. The goal of research should thus be to discover the psychological mechanisms that lead to this correlation, and thus to inaccu-racy. Because projection itself was seen as a form of inaccuracy, most of the proposed mental mechanisms were considered facets of fallible intuitive rea-soning. In other words, false social perception was explained by the opera-tion of flawed thinking.

Ross et al. (1977) further suggested that projection not only fosters inac-curate consensus estimates, but that it also contributes to other social-per-ceptual errors. Since, according to attribution theory, the consensus with which an opinion is held indicates whether it reflects an underlying person-al disposition, false perceptions of consensus may beget false attributions. Specifically, two kinds of attributional errors may arise. First, by believing that others who disagree with them are in a minority, people may be quick to infer that these opinions reflect peculiar personal dispositions. Thus, they fall prey to an observer bias. Second, by assuming that their own opinions are the most reasonable ones, people may be quick to conclude that others who disagree with them are not responding reasonably to reality. This 'bet-ter-than-thou' inference is a form of self-enhancement.

Writing for an audience interested in the dynamics of social games, Dawes, McTavish, and Shaklee (1977) reported that most players in the pris-oner's dilemma assume that their opponents behave as they themselves do. Players who choose to cooperate hope that their cooperation is reciprocated, whereas players who choose to defect resign themselves to the expectation of reciprocated defection. In other words, the most commonly expected out-comes are mutual cooperation and mutual defection. At the time, Dawes et al. made no assumptions as to the rationality of these expectations. After a decade of reflection, however, Dawes (1989; 1990) argued for the potential rationality of projection. Particularly when people have little or no reliable information about the opinions or behaviors of others, their own responses

can serve as useful anchors for prediction. The basic argument is that because most people are by definition members of the majority, they benefit from assuming that their responses are majority responses. If everyone's predictions rested on this heuristic, the average error would be smaller than if everyone resorted to random guessing while ignoring his or her own responses. This explanation is parsimonious because it accounts for projection among both cooperators and defectors. In contrast, the traditional view that projection rationalizes undesirable behaviors can only be applied to defectors.

Consider the typical outcome of a prisoner's dilemma game. Most players defect so that the probability that an individual opponent actually defects is high (say .7; see Sally, 1995, for a meta-analytic review). Not knowing this, both defectors and cooperators expect that their own choice will be reciprocated with a probability of, say, .6. Thus, the probability that a player will defect and expect defection is .42 (i.e., .7*.6), and the probability that a player will cooperate and expect defection is .12 (i.e., .3*.4). The sum of these two probabilities, .54, reflects the overall estimated probability of defection. Without projection, this probability would be .5, yielding an error of .2 instead of .16. The beneficial effect of projection on accuracy increases further as projection increases or as the actual majority becomes larger.

Whereas the accuracy effect of projection is now well established (see Krueger 1998a, 2000, for reviews), the three classic studies raised several other questions that are still being debated, and additional questions have since arisen. The present article has three objectives. First, I address the theoretical question of whether perceptions of self-group similarities are indeed projective, or if they are, at least in part, the opposite, namely introjective. Second, I address the methodological question of whether, as is usually presumed, idiographic (i.e., within person) and nomothetic (i.e., within item) analyses offer converging results. Third, I address the empirical question of whether projection, by and large, increases or decreases several social-perceptual biases.

The Theoretical Question: Is it Projection or Introjection?

When a correlation is observed between judgments of self and of others, many researchers readily attribute this effect to projection. Some others, however, favor the opposite interpretation, namely that people strategically align their own responses with what they perceive to be the majority response. To distinguish this interpretation from projection, it may be called *introjection*.

To illustrate the ambiguity of correlational data, consider a study in which participants ranging in age from 20 to 80 years traced their own personality development as they saw it and the development of most others across the adult life span (Heckhausen & Krueger, 1993). Most participants saw a close correspondence between their own development and the development of others. The typical perception was that the overall desirability of personality profiles would increase until about age 60 and then gradually decline. Reflecting the hypothesis of introjection, these findings were interpreted to mean that people hold normative expectations about life-span development and that they hold the reasonable expectation that their own development is typical rather than deviant. Note, however, that self-perceptions and other-perceptions were similar regardless of the age of the respondents. This lack of an age effect suggested an unresolved asymmetry. Young adults could be expected to be aware of cultural stereotypes of development, while not knowing their own development yet. Thus, they had reason to apply the perceived age norms to themselves. Older adults, however, could be expected to have some knowledge of how their own development had played out during their own life course, and to project this knowledge onto others. What the exact mix of projection and introjection was, one could not say, only that projection probably became more prominent with age.

Of the authors of the three classic studies mentioned above, Ross et al. (1977) did not question the idea that perceptions of similarity are projective. After reviewing their findings, Fields and Schuman (1976) also endorsed the projection hypothesis because it was "difficult to imagine most respondents having prior thoughts about what others believe" (p. 438). Dawes et al. (1977) found that players in the prisoner's dilemma game differed more widely in their expectations concerning opponent choice than observers did. This finding could be explained by projection, which led players to expect their own choices to be reciprocated. Not having this opportunity, observers generated more regressive (i.e., less variable) expectations (see Krueger, Acevedo, & Robbins, in press, for a replication and a meta-analysis).

In the prisoner's dilemma, the introjection hypothesis suggests that "the correlation [between a player's choice and the expected opponent choice] is due purely to subjects' making a strategic choice based on what they think others will choose. One problem with that reasoning is that in a dilemma situation a 'rational' strategic choice dictates defection no matter what others do" (Dawes & Orbell, 1995, p. 67). But how could players form such prior expectations? Indeed, when players are explicitly informed about the probability of the opponent cooperating, variations in this probability contribute little to players' own cooperation (Acevedo & Krueger, in preparation a; Shafir & Tversky, 1992). In some experiments, participants receive bogus feedback regarding their own attributes. Because this method disables intro-

jection, correlations between these attributes and their perceived prevalence can only be due to projection (see Krueger, 2000, for a review).[1] Another approach is to ask participants to estimate the size of their group, be it a real one or one created ad hoc in the laboratory. Typically, people belonging to a particular group believe this group to be larger than people who do not belong to it (Blanz, Mummendey, & Otten, 1995; Clement & Krueger, 2002; Krueger & Clement, 1997). Seen as a personal attribute, group membership appears to become a projectible attribute.

If self-referent information is to have any causal effect on consensus estimates, as the projection hypothesis assumes, this information must be accessed first, and it must facilitate the construction of the estimates. Studies on response latencies show that people make their own responses faster than they make consensus estimates (Cadinu & De Amicis, 1999), and that the facilitative effect of these responses on the estimates is greater than the facilitative effect of the estimates on one's own responses (Clement & Krueger, 2000). Thus, the latency data satisfy the minimal causal requirement for projection (i.e., the temporal primacy of self-information), while contradicting the sequence of activation needed for introjection.

Given this converging evidence for the projection hypothesis, the continued popularity of the introjection hypothesis remains to be explained. One reason must surely be the preponderance of correlational data in the literature, which permits divergent speculations about the direction of the causal flow. A second reason is that conformity effects are sometimes mistaken for introjection effects. People do, under certain conditions, alter their behavior to conform to the majority. Still, efforts to induce conformity fail more often then they succeed (e.g., Asch, 1951). In studies of consensus estimation, few participants are impressed even when told that a sample of other group members has responded with unanimity. Most participants continue to project as if they had been told nothing (Krueger & Clement, 1994).

A third, and arguably the most important, reason is that the idea of introjection figures prominently in self-categorization theory (SCT). SCT is an influential attempt to understand how people represent their place in a complex social environment (Turner, Oakes, Haslam, & McGarty, 1994). Its key tenet is the self-stereotyping (i.e., introjection) hypothesis. "Once some specific social identification is salient, a person assigns to self and others the common, typical or representative characteristics that define the group as a whole [so that] they perceive themselves as relatively interchangeable with other ingroup members. Turner refers to this process as 'depersonalization'"

---

[1] In the reverse maneuver, participants receive bogus personality feedback that purportedly describes members of their group. Acceptance of this information may be a form of introjection (Simon & Hamilton, 1994).

(Brown & Turner, 1981, p. 39). An American woman, for example, may see herself primarily as an American when among a group of international students, but see herself as a woman when among men. In the former case, she might describe herself as individualistic and optimistic, whereas in the latter case, she might describe herself as sensitive and warm. Although such self-stereotyping seems like a compelling possibility, it has been difficult to demonstrate.

In lieu of a full review consider two points. First, SCT assumes that people share knowledge of cultural stereotypes, which they can introject under the right circumstances. Contrary to this claim, however, perceptions of cultural stereotypes vary as much as personal beliefs regarding group attributes. Indeed, perceptions of cultural stereotypes may themselves, in part, be projections from personal knowledge rather than vice versa (Gordijn, Koomen, & Stapel, 2001; Krueger, 1996). Second, SCT limits its claim of introjective self-stereotyping to situations in which social categorization is highly salient and the attributes that are correlated with group membership. The social projection hypothesis makes the same prediction, however, and efforts to demonstrate self-stereotyping while avoiding contamination with projection have only yielded weak or unreplicated effects (see Krueger et al., in press, for a more comprehensive review).

The Methodological Question: Use Idiographic or Nomothetic Measures?

In the three classic studies, perceptions of similarity were indexed nomothetically, that is, as correlations between participants' own responses and their consensus estimates computed across participants and separately for each judgment item. When multiple items are used, the average effect size reflects the degree to which the typical item elicits projection. Recently, idiographic indexes have also been computed as correlations within participants and across items. The average effect size reflects the degree to which the typical person projects. Whereas the nomothetic approach enables the search for moderator variables among item characteristics, the idiographic approach enables the search for moderator variables among person characteristics.

Looking for moderators. Nomothetic work has shown that people are more prone to project their attitudes than their abilities or personality traits (Campbell, 1986). Differences in social desirability are the likely source of this moderator effect. Unlike attitudes, abilities and traits are easily and consensually graded with respect to their valence. Regardless of whether they themselves possess these attributes, people readily agree that it is desirable

to be sincere or talented. Even people who concede that they are selfish acknowledge the undesirability of this trait (although they do not consider it quite as negative as those who reject this trait for themselves; Krueger, 1998b). Inasmuch as people recognize that most people are far more willing to endorse desirable than undesirable traits, they can use their perceptions of trait desirability as cues towards consensus independently of their own trait endorsements (Sherman, Chassin, Presson, & Agostinelli, 1984). A significant consensus effect is still found, however, when desirability ratings are controlled (Krueger, 2000).[2]

For most attitudes and opinions, desirability ratings are far less consensual. Although they *think* they obtained their attitudes primarily through rational thought (Kenworthy & Miller, 2002), their affective responses are the primary expressions of these attitudes (Fazio, Sanbonmatsu, Powell, & Kardes, 1986). Whichever attitudes they may hold, people consider them "so sensible that they must be held by all reasonable people" (Fields & Schuman, 1976, p. 438). To the extent that different people hold different attitudes, the social (i.e., average) desirability of these attitudes regresses to the mean. The little variance that remains in these averages does little to mediate projection. Instead, projection may spring directly from access to one's own opinions. When the desirability of attitudes is controlled, projection effects remain strong (e.g., Krueger & Clement, 1996).

Idiographic research has been slow to examine correlations between person-specific projection coefficients and other psychological properties of interest. Fields and Schuman (1976) thought that there was no "generalized trait [. . .] to perceive agreement" (p. 438) after finding only little evidence that people who projected their political attitudes to others, also tended to project attitudes about domestic relations ($\Phi = .16$). To examine the relationships between projection and other individual differences, it is first necessary to ascertain whether the observed variance in the idiographic projection correlations is not due to mere sampling error.[3] Then, the reliability with which these individual differences can be measured needs to be estimated. In one study, the test-retest reliability of projection was rather modest ($r = .66$; Krueger & Stanke, 2001).[4] Thus far, no standardized scale for the

---

[2] This residual effect may reflect the egocentric and projective component in perceptions of similarity. See Krueger (1998a) for a review other attempts to extract the egocentric bias component from the otherwise accuracy-inducing projection correlations.

[3] See for example Hays (1978, p. 664), who describes the χ^2 statistic with K-1 degrees of freedom, where K is the number of correlations: $\Sigma(n_j - 3)(Z_j - M(Z))^2$.

[4] Though modest, the reliability of individual differences in projection was greater than the reliability of correlations between consensus estimates and ratings of participants' roommates ($r = .43$). Note that this differences also militates against the introjection hypothesis because that hypothesis suggests that people self-stereotype themselves more reliably than they stereotypes another individual.

measurement of individual differences in projection has been devised. One reason for this lack is that, unlike conventional psychological constructs (e.g., self-esteem), projection cannot be indexed by the sum of the responses to a series of items. Being a process rather than a trait construct, projection is indexed by the *correlation* between two sets of responses—self-ratings and consensus estimates—neither of which is perfectly reliable. When the reliability of *ad-hoc* scales was assessed by using the correlations among the items' cross products (between self-ratings and consensus estimates), Spearman-Brown prophecies were intermediate ($r = .68$, Acevedo & Krueger, in preparation b; $r = .55$, Krueger & Acevedo, under review).

Although individual differences in projection predict public self-consciousness (Fenigstein & Abrams, 1993), self-esteem (Krueger, 2002), and, less surprisingly, identification with the group (Cadinu & De Amicis, 1999; Coats, Smith, Claypool, & Banner, 2000), other correlations hover around zero. Stanovich and West (1998) did not find any clear pattern of correlations with general intelligence or biases in rational reasoning. Even a scale measuring a 'need for uniqueness,' which by any reasonable intuition ought to have correlate negatively with projection, did not do so (Krueger, 1998a).

There is, however, the intriguing possibility that projection facilitates cooperation in social dilemmas (Orbell & Dawes, 1991). Recall that both projectors and defectors expect reciprocal opponent behavior after they themselves have made their choices. What happens, however, *as* players are making their choices? A player's psychological situation resembles that of a person trying to cope with Newcomb's paradox (Shafir & Tversky, 1992). The paradox arises from the fact that the player's choice, by definition, will likely be the majority choice. Therefore, as long as the player still *has* a choice, it is tempting to think that this choice *determines* majority choice. Social dilemmas pit the experience of free choice against the brute statistical fact that one's choice is likely going to be that of most others. People who project their inclinations to either defect or cooperate *as they are weighing these alternatives*, may just settle for cooperation. With projection, they aim for the higher payoff, which results from mutual cooperation and not from mutual defection. When social dilemmas are considered this way, cooperation is no longer a game-theoretic anomaly, but the rational choice. In one study, in which projection was measured as the correlation between players' own responses to various trait terms concerning morality or intelligence and their corresponding consensus estimates, cooperation was predictable at $r = .43$ (after correction for unreliability; Krueger & Acevedo, under review). Individual differences in trait projection thus generalized to differences in behavioral projection.

Looking for convergence. When the appetite for moderators has been sated, the question remains whether idiographic measures yield the same overall effect size as nomothetic measure do. A meta-analysis of studies measuring both projection to ingroups and projection to outgroups showed some variation as a function of the analytical approach. There was greater projection to ingroups (.52 vs. .39., for the idiographic and the nomothetic approach, respectively) than to outgroups (.05 vs. .17), but note that the difference was smaller from the nomothetic perspective (Robbins & Krueger, in preparation a). When perceptions of similarity do occur (as for ingroups), idiographic effects tend to be larger than nomothetic effects even when the same data are analyzed both ways (Clement & Krueger, 2002; Dawes & Mulford, 1996; Krueger, 2000; Krueger & Stanke, 2001; Robbins and Krueger, in preparation b).

There are limits to this discrepancy because, after all, the same data matrix is being analyzed (Dawes & Orbell, 1995). Assume the simple case of two people responding to two items. The first respondent endorses the first item and rejects the second one, whereas the second respondent rejects the first item and endorses the second. Both respondents project when giving a higher consensus estimate for the item they endorse. If, as in this case, both idiographic projection correlations are positive, it is impossible to obtain two negative nomothetic correlations. To explore the empirical relation (as opposed to the mean level effect size) between idiographic and nomothetic measures within the same study, respondents in the Robbins-and-Krueger (in preparation b) study were ranked according to the size of their idiographic projection correlation. Then, for each set of 12 participants (up to respondent 168), the nomothetic projection correlation was computed for each of the 12 traits and averaged. Across the 14 sets of participants, the average idiographic projection correlations were almost perfectly correlated with the average nomothetic projection correlation ($r = .93$).

The Empirical Question: How is Social Projection Related to Errors and Biases?

The literature on social-perceptual biases is replete with apparent opposites. Where there is overestimation, there must also be underestimation; where there is enhancement, there must be diminishment, and so forth (Krueger, 1998c). No matter how contradictory they may seem, all these biases are considered egocentric. This unity of opposites has an almost Taoist flavor. Studies on the relationships among presumed biases are rare. Extending earlier work showing that projection increases the accuracy of social perception, I now show that projection also reduces some of the kinds

of self-other asymmetries that are the focus of this issue. The three biases of interest here are false uniqueness, pluralistic ignorance, and self-enhancement.

False uniqueness. Once the "false consensus" effect appeared on the scene (Ross et al., 1977), the "false uniqueness" effect (FUE) was not far behind (Perloff & Brickman, 1982). Because a FUE requires a *negative* correlation between own responses and consensus estimates, any increase in projection can only work against it. Empirically, FUEs rarely constitute more than 5% to 10% of the observed correlations, and efforts to predict where and when they will appear have not been successful (Krueger, 2000). If, ultimately, particular kinds of items or types of people are identified as bearers of the FUE, this bias might become recognized as a strong form of egocentrism because no adequate rational model for such an effect exists.

Pluralistic Ignorance. Since Allport's (1924) original analysis of social perception, the term "pluralistic ignorance" (PI) has come to be seen as one of the key inadequacies of the social perceiver. Fields and Schuman (1976) suggested that PI "reflects a situation where people appear to operate within a 'false' social world" (p. 427). Classic examples involve public situations in which people act according to incorrectly perceived group norms. When, for example, a teacher lectures on an arcane topic, none the befuddled students may ask a question because they all infer that they are the only ones who failed to understand the teacher's point. But a discrepancy between public behaviors and private attitudes is not necessary to generate PI. Nor is it necessary that people "infer that their [attitudes] are not consensual [because they] fear inaccurate perceptions of consensus" (Goethals & Klein, 2000, p. 35) or that "fear of embarrassment was responsible" (Prentice & Miller, 1993, p. 544). When a large difference between the actual consensus for an attitude and the average estimated consensus is sufficient to establish PI, it is not surprising that people grossly underestimate the percentage of others who claim to have desirable personality attributes or who profess to perform kind acts (Goethals, 1986). Statistically, any response that is highly common is most likely to be underestimated; truly rare responses are most likely overestimated (Krueger & Clement, 1997).

What is the relationship between social projection and PI? Three different hypotheses have been entertained, but none has been rigorously tested. First, the traditional "false consensus" paradigm considers any projection to be in error (Ross et al., 1977), thus creating the expectation that greater projection will increase the inaccuracy expressed by PI. Second, Fields and Schuman (1976) took the more agnostic view that projection and PI are independent because they saw "little relation between the degree to which such

solipsism [i.e., projection] prevails and the actual distribution of opinion on the issue" (p. 438). Prentice and Miller (1993) echoed this views, stating that "theoretically, it is possible for there to be both a positive correlation between people's judgments of self and others [i.e., projection] and a mean difference in self-other ratings [i.e., PI]" (p. 253). Third, the "inductive reasoning" paradigm championed by Dawes et al. (1977) suggests that greater projection leads to greater accuracy and thus to less PI. The logic is simple. Because most people are by definition similar to the majority, accuracy is more strongly increased by the projections among majority members than it is decreased by the projections among the minority members.

A simple numerical example may illustrate the force of the accuracy hypothesis. Assume a set of conditions in which the actual consensus for the majority position and the size of the projection effect vary independently. For simplicity, let the actual majority size vary from 60% to 90% in steps of 10%. Also assume that majority and minority members both expect the prevalence of their own position to be greater than 50% (ranging from 52% to 98% in steps of 2%). When, for example, members of a 90% majority estimate the size of that majority to be 52%, and members of the 10% minority estimate the size of the majority to be 48% (because they believe that the prevalence of their own, the minority position, is 52%), the weighted average of the estimates of majority size is 51.6%. Thus, PI is 38.4% (i.e., 90% - 51.6%). With the highest degree of projection (98% for consensus with own position), the weighted average of estimated majority size is 88.4%, reducing PI to 1.6%. Table 1 shows the correlations among actual majority size, weighted estimates, the absolute differences between the two (i.e., PI), and projection. The key finding is the large negative correlation (-.73) between projection and PI.

In this sample set of conditions, it is impossible for projection to reduce overall accuracy by reversing the PI. Such a reversal could occur only if the weighted consensus estimates were more extreme than actual consensus. This would be most likely if the actual majority-minority differential were

Table 1. Projection Reduces Pluralistic Ignorance:
Correlations Among Hypothetical Data Reflecting High Uncertainty

	Actual consensus (Majority size)	Weighted estimate of majority size	Absolute inaccuracy (PI)
Weighted estimate	.59		
PI	.59	-.30	
Projection	0	.73	-.73

small or if majority members projected much more than minority members. Such a confluence of factors is unlikely. By the inevitable regression to the mean, the overall averages of consensus estimates (weighted by actual group size) are likely to be less extreme than their corresponding actual values. In one recent study, there was no reversal of PI among the 14 items studied (Krueger, 2000, see Table 1, p. 326), and in another, there were three reversal in a set of 40 items (Krueger & Clement, 1994, see Table 1, p. 600).

Self-enhancement. Self-enhancement occurs to the extent that people view themselves more favorably than is objectively justified. Because it is difficult to determine just what level of favorability is "objectively justified," investigators have proposed diverse measurement strategies. There are five types of strategy, three of which involve self-other asymmetries. The first type examines if people view themselves more favorably than they view others when making separate judgments about each target (e.g., Brown, 1986). The second type examines if people rate themselves more favorably than others on a single comparative scale (e.g., Suls, Lemos, & Stewart, 2002). The third type examines if people view themselves more favorably than *others view them* (e.g., John & Robins, 1994). The remaining two types involve differences between self-ratings and objective standards (e.g., test results; Shepperd, 1993) or between observed self-ratings and self-ratings as predicted from relevant social norms of self-description and perceptions of trait desirability (Krueger, 1998b). Unfortunately, no consensus has been reached as to which strategy produces the most valid results, and correlations among different indices of self-enhancement are rather modest (Krueger & Mueller, 2002).

The first two measures of self-enhancement are of particular interest here because, like projection, they depend on self-other comparisons made by individual perceivers. The definition of the two biases suggests an apparent contradiction. Whereas projection denotes the perception of similarities between the self and others, self-enhancement suggests the perception of self-serving differences. Because the evidence for both biases is strong, the question is how people can have it both ways, assuming that others are like them and yet believing that they themselves are better. A recent study suggested that this conflict is more apparent than real. Respondents ($N = 164$) judged how well each of 14 trait terms described themselves, how well it described a randomly selected fellow student, and how desirable it was (Krueger, 2000). Both projection and self-enhancement effects were observed. The relation between the two depended on the analytical approach, however. When measured nomothetically, the traits associated with greater projection yielded smaller self-enhancement effects ($r = -.57$),

and this relationship was not mediated by trait desirability (partial $r = -.50$).[5] When measured idiographically, strong and weak projectors were equally likely to self-enhance.

One way to understand the co-existence for these two biases is to realize that whereas projection captures the similarity of a profile of ratings (either nomothetically across people or idiographically across items), self-enhancement captures the difference in the overall level of ratings (hence the self-other asymmetry). People self-enhance if they judge desirable traits as overall more applicable to the self than to others, or if they judge undesirable traits as overall less applicable to the self. Nevertheless, the two biases come into conflict if one of them is pushed to the extreme. If people assumed perfect similarity between themselves and others, both in terms of the profile and the level of ratings, self-enhancement could not occur. In other words, one of the potential benefits of social projection is that it may decrease narcissistic excesses of self-enhancement.

The most widely used measure of self-enhancement is a single comparative rating of how favorably the self is perceived relative to the average person. To arrive at such a comparison, rational perceivers would access their absolute evaluations of the average other, subtract them from their self-evaluations, and translate the difference into a comparative judgment. Alas, this is not what most people do. Instead, they appear to be self-focused, translating their absolute self-judgment directly into a comparative judgment, while ignoring their own judgments of the average person (Klar & Giladi, 1999; Kruger, 1999; but see Krueger & Mueller, 2002, for the moderating role of actual ability).

In Klar and Giladi's (1999, Study 1) original demonstration, people's judgments of their own happiness predicted their comparative judgments well ($r = .71$), whereas their own judgments of the average person's happiness were weakly and positively—instead of negatively—correlated with the comparative judgments ($r = .13$). Respondents also projected their own happiness to others ($r = .20$). The correlation between a difference score and a third variable can be predicted from the correlations among the three input variables (Asendorpf & Ostendorf, 1998). In the present case, the two predictor variables are absolute self-ratings [S] and absolute other-ratings [O], while the criterion variable are the comparative judgments of self relative to the average person [C]. If the three variables have the same variance, the correlation between the difference between self- and other-ratings and the comparative self-ratings is

$$r(S-O,C) = \frac{r(S,C) - r(O,C)}{\sqrt{2 \times [1 - r(S,O)]}}$$

---

[5] The moderator variable responsible for this effect remains to be found.

This relationship implies that as projection increases, comparative judgments become more correlated with the differences between the absolute judgments (i.e., because the denominator of the ratio become smaller).[6] If people projected more strongly, their perceptions of how they compare with others would be more sensitive to the *differences* between their own relevant absolute judgments and less sensitive to the mere level of these absolute judgments. In other words, the projection would facilitate the coherence of self-other comparisons.

A Different View: When Projection is a Problem

Thus far, I have stressed the benefits of projection for the accuracy of social perception, for doing good in social collectives, and for the reduction of other social-perceptual biases (e.g., self-enhancement). One might add that projection can improve intergroup relations when people extend projection to outgroups (Li & Hong, 2001), increase attitude certainty (not that this is necessarily a good thing; Holtz & Miller, 2001), and yield satisfaction with intimate relationships (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002). It should be noted, however, that there are conditions under which projection is detrimental. I close with a brief review of studies that point to projective pitfalls, and I try to isolate their common element.

Recently, some articles have demonstrated varieties of what might be called "egocentric empathy gaps" (van Boven, Dunning, & Loewenstein, 2000, p. 66). One way or the other, these articles report that people overestimate the degree to which others see them as they see themselves. They are overly concerned about public mishaps and blunders (Savitsky, Epley, & Gilovich, 2001) and about the transparency of their private states (especially when these states deceitfully differ from their overt behaviors; Gilovich, Savitsky, & Medvec, 1998). This line of research is reminiscent of the more general finding that perceived reflected appraisals are more similar to people's self-appraisals than to how their peers actually see them (Kenny & DePaulo, 1993; Krueger, Ham, & Linford, 1996).

Why does the accuracy benefit not accrue under these conditions? Recall that projection 'works' when the average person is likely in the majority. This condition is not met in research on empathy gaps because each person indeed holds a unique position. A liar has access to internal information that observers lack. If everyone in a group lies about something, everyone is a

---

6 Klar and Giladi (1999) found a correlation of .22 between the difference score measure and the criterion, whereas Asendorpf and Ostendorf's (1998) formula yields a correlation of .46. The reason for this discrepancy may lie in differences in the variances of the input variables.

minority of one with respect to access to his or her internal states. The projective assumption that others can see what is only visible to the self, can then only lead to error. Things would be different if individual observers of the target person were to predict the judgments of other observers. In this case, the benefits of projection would be restored.

To overcome empathy gaps, people would have to take, well, an empathic perspective. In the words of the late Rabbi Wolfe Kelman, "Always remember! What's central to you is peripheral to other people" (cited in Telushkin, 1992, p. 186). If people blunder and worry about being ridiculed, they might ask themselves how they would respond to someone else's blunder. This simulated response may then serve as a cue for the prediction of how others react to one's own blunder. Interestingly, even this more effortful maneuver of mind would still be a projection of sorts (Gordon, 1992).

Conclusion

On balance, projection is an indispensable tool for making predictions about others. Social perceivers would be worse off without it. Rather than being just another irrationality, projection helps reduce the size and the impact of several common misperceptions. Judged by the preponderance of these benefits, it seems likely that projection has evolved as an adaptive mental device. This hypothesis is consistent with the evidence showing that projection works powerfully and effortlessly. In other words, projection is the kind of reasoning done by "System I," which is intuitive, associationist, heuristic, and automatic. Its results are satisfactory most of the time (Epstein, 1994; Sloman, 1996). In contrast, reasoning in "System II" is comparative, systematic, and controlled. Because this kind of reasoning is expensive and precious, it can only be used sparingly. The closing of empathy gaps, for example, would require the intercession of System II reasoning to block the otherwise misleading conclusions offered by the projective zeal of System I. The million-Euro question is how System II knows when to override System I. Do we need a System III to make the call?

References

Acevedo, M., & Krueger, J. I. (in preparation a). *The effects of social projection and payoff on cooperative behavior in the prisoner's dilemma game.*

Acevedo, M., & Krueger, J. I. (in preparation b). *Projection can explain ingroup-favoritism but not discrimination.*

Allport, F. H. (1924). *Social psychology.* Boston, MA: Hougthon-Mifflin.

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Group leadership and men* (pp. 177-190). Pittsburgh, PA: Carnegie Press.

Asendorpf, J. B., & Ostendorf, F. (1998). Is self-enhancement healthy? Conceptual, psychometric, and empirical analysis. *Journal of Personality and Social Psychology, 74,* 955-966.

Blanz, M., Mummendey, A., & Otten, S. (1995). Perceptions of relative group size and group status: effects of intergroup discrimination in negative evaluations. *European Journal of Social Psychology, 25,* 231-247.

Brown, J. D. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social Cognition, 4,* 353-376.

Brown, R. J., & Turner, J. C. (1981). Interpersonal and intergroup behaviour. In J. C. Turner & H. Giles (Eds.), *Intergroup behaviour* (pp. 33-65). Oxford: Blackwell.

Cadinu, M. R., & De Amicis, L. (1999). The relationship between the self and the ingroup: When having a common conception helps. *Swiss Journal of Psychology, 58,* 226-232.

Campbell, J. (1986). Similarity and uniqueness: The effects of attribute type, relevance, and individual differences in self-esteem and depression. *Journal of Personality and Social Psychology, 50,* 281-294.

Clement, R. W., & Krueger, J. (2000). The primacy of self-referent information in perceptions of social consensus. *British Journal of Social Psychology, 39,* 279-299.

Clement, R. W., & Krueger, J. (2002). Social categorization moderates social projection. *Journal of Experimental Social Psychology, 38,* 219-231.

Coats, S., Smith, E. E., Claypool, H. M., & Banner, M. J. (2000). Overlapping mental representations of self and in-group: Reaction time evidence and its relationship with explicit measures of group identification. *Journal of Experimental Social Psychology, 36,* 304-315.

Dawes, R. M. (1989). Statistical criteria for establishing a truly false consensus effect. *Journal of Experimental Social Psychology, 25,* 1-17.

Dawes, R. M. (1990). The potential nonfalsity of the false consensus effect. In R. M. Hogarth (Ed.), *Insights in decision making: A tribute to Hillel J. Einhorn* (pp. 179-199). Chicago, IL: University of Chicago Press.

Dawes, R. M., McTavish, J., & Shaklee, H. (1977). Behavior, communication, and assumptions about other people's behavior in a commons dilemma situation. *Journal of Personality and Social Psychology, 35,* 1-11.

Dawes, R. M., & Mulford, M. (1996). The false consensus effect and overconfidence: Flaws in judgment or flaws in the way we study judgment? *Organizational Behavior and Human Decision Processes, 65,* 201-211.

Dawes, R. M., & Orbell, J. M. (1995). The benefit of optional play in anonymous one-shot Prisoner's Dilemma games. In K. J. Arrow, R. H. Mnooken, L. Ross, A. Tversky, & R. B. Wilson (Eds.), *Barriers to conflict resolution* (pp. 62-85). New York: Norton.

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist, 49,* 709-724.

Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the

automatic activation of attitudes. *Journal of Personality and Social Psychology, 50,* 229-238.

Fenigstein, A., & Abrams, D.(1993). Self-attention and the egocentric assumption of shared perspectives. *Journal of Experimental Social Psychology, 29,* 287-303.

Fields, J. M., & Schuman, H. (1976). Public beliefs about the public. *Public Opinion Quarterly, 40,* 427-448.

Gilovich, T., Savitsky, K., Medvec, V. H. (1998). The illusion of transparency: Biased assessments of others' ability to read one's emotional states. *Journal of Personality and Social Psychology, 75,* 332-346.

Goethals, G. R. (1986). Fabricating and ignoring social reality: Self-serving estimates of consensus. In J. M. Olson, C. P. Hermann, & M. P. Zanna (Eds.), *Relative deprivation and social comparison.* The Ontario Symposium (Vol. 4, pp. 135-157). Hillsdale, NJ: Erlbaum.

Goethals, G. R., & Klein, W. P. (2000). Interpreting and inventing social reality: Attributional and constructive elements in social comparison. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 23-44). New York: Plenum/Kluwer.

Gordon, R. M. (1992). The simulation theory: Objections and misconceptions. *Mind & Language, 7,* 11-34.

Gordijn, E. H., Koomen, W., & Stapel, D. A. (2001). Level of prejudice in relation to knowledge of cultural stereotypes. *Journal of Experimental Social Psychology, 37,* 150-157.

Hays, W. (1978). *Statistics for the social sciences* (2nd ed.). New York, NY: Holt, Rinehart, & Winston.

Heckhausen, J., & Krueger, J. (1993). Developmental expectations for the self and most other people: Age grading in three functions of social comparison. *Developmental Psychology, 29,* 539-548.

Holtz, R., & Miller, N. (2001). Intergroup competition, attitudinal projection, and opinion certainty. *Group Processes and Intergroup Relations, 4,* 61-73.

John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and the role of narcissism. *Journal of Personality and Social Psychology, 66,* 206-219.

Klar, Y., & Giladi, E. E. (1999). Are most people happier than their peers, or are they just happy? *Personality and Social Psychology Bulletin, 25,* 585-594.

Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological-Bulletin, 114,* 145-161.

Kenworthy, J. B., & Miller, N. (2002). Attributional biases about the origins of attitudes: externality, emotionality, and rationality. *Journal of Personality and Social Psychology, 82,* 693-707.

Krueger, J. (1996). Personal beliefs and cultural stereotypes about racial characteristics. *Journal of Personality and Social Psychology, 71,* 536-548.

Krueger, J. (1998a). On the perception of social consensus. *Advances in Experimental Social Psychology, 30,* 163-240.

Krueger, J. (1998b). Enhancement bias in the description of self and others. *Personality and Social Psychology Bulletin, 24,* 505-516.

Krueger, J. (1998c). The bet on bias: A foregone conclusion? *Psycoloquy, 9*(46). http://www.cogsci.soton.ac.uk/cgi/psyc/newpsy?9.46

Krueger, J. (2000). The projective perception of the social world: A building block of social comparison processes. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 323-351). New York: Plenum/Kluwer.

Krueger, J. (2002). *Self-esteem and social projection.* Unpublished data.

Krueger, J., & Acevedo, M. (under review). *Perceptions of self and other in the Prisoner's Dilemma Game.*

Krueger, J. I., Acevedo, M, & Robbins, J. M. (in press). Perceptions of similarities between self and social group: A matter of social projection or self-stereotyping? To appear in K. Fiedler & P. Juslin (Eds.), *Adaptive cognition.*

Krueger, J., & Clement, R. W. (1994). The truly false consensus effect: An ineradicable and egocentric bias in social perception. *Journal of Personality and Social Psychology, 67,* 596-610.

Krueger, J., & Clement, R. W. (1996). Inferring category characteristics from sample characteristics: Inductive reasoning and social projection. *Journal of Experimental Psychology: General, 125,* 52-68.

Krueger, J., & Clement, R. W. (1997). Consensus estimates by majorities and minorities: The case for social projection. *Personality and Social Psychology Review, 1,* 299-319.

Krueger, J., Ham, J. J., & Linford, K. M. (1996). Perceptions of behavioral consistency: Are people aware of the actor-observer effect? *Psychological Science, 7,* 259-264.

Krueger, J., & Stanke, D. (2001). The role of self-referent and other-referent knowledge in perceptions of group characteristics. *Personality and Social Psychology Bulletin, 27,* 878-888.

Krueger, J., & Mueller, R. A. (2002). Unskilled, unaware, or both? The contribution of social-perceptual skills and statistical regression to self-enhancement biases. *Journal of Personality and Social Psychology, 82,* 180-188.

Kruger, J. (1999). Lake Wobegon be gone! The "below-average effect" and the egocentric nature of comparative ability judgments. *Journal of Personality and Social Psychology, 77,* 221-232.

Li, Q., & Hong, Y.-Y. (2001). Intergroup perceptual accuracy predicts real-lie intergroup interactions. *Group Processes & Intergroup Relations, 4,* 341-354.

Murray, S. L., Holmes, J. G., Bellavia, G., Griffin, D. W., & Dolderman, D. (2002). Kindred spirits? The benefits of egocentrism in close relationships. *Journal of Personality and Social Psychology, 82,* 563-581.

Orbell, J., & Dawes, R. M. (1991). A "cognitive miser" theory of cooperators' advantage. *American Political Science Review, 85,* 515-528.

Perloff, L. S., & Brickman, P. (1982). False consensus and false uniqueness: Biases in perceptions of similarity. *Academic Psychology Bulletin, 4,* 475-494.

Prentice, D. A., & Miller, D. T. (1993). Pluralistic ignorance and alcohol use on campus: Some consequences of misperceiving the social norm. *Journal of Personality and Social Psychology, 64,* 243-256.

Robbins, J. M., & Krueger, J. I. (in preparation a). *The moderating effect of social categorization on social projection: A meta-analytic integration.*

Robbins, J. M., & Krueger, J. I. (in preparation b). *Social projection among ethnic majorities and minorities.*

Ross, L., Greene, D., & House, P. (1977). The "false consensus effect": An egocentric bias in social perception and attribution processes. *Journal of Experimental Social Psychology, 13,* 279-301.

Sally, D. (1995). Conversation and cooperation in social dilemmas. *Rationality and Society, 7,* 58-92.

Savistsky, K., Epley, N., & Gilovich, T. (2001). Do others judge us as harshly as we think? Overestimating the impact of our failures, shortcomings, and mishaps. *Journal of Personality and Social Psychology, 81,* 44-56.

Shafir, E., & Tversky, A. (1992). Thinking through uncertainty: Nonconsequential reasoning and choice. *Cognitive Psychology, 24,* 449-474.

Shepperd, J. A. (1993). Student derogation of the Scholastic Aptitude Test: Biases in perceptions and presentations of college board scores. *Basic and Applied Social Psychology, 14,* 455-473.

Sherman, S. J., Chassin, L., Presson, C. C., & Agostinelli, G. (1984). The role of the evaluation and similarity principles in the false consensus effect. *Journal of Personality and Social Psychology, 47,* 1244-1262.

Simon, B., & Hamilton, D. L. (1994). Self-stereotyping and social context: The effects of relative in-group size and in-group status. *Journal of Personality and Social Psychology, 66,* 699-711.

Sloman, S. (1996). The empirical case for two systems of reasoning. *Psychological Bulletin, 119,* 3-22.

Stanovich, K. E., & West, R. F. (1998). Individual differences in rational thought. *Journal of Experimental Psychology: General, 127,* 161-188.

Stryker, S., & Statham, A. (1985). Symbolic interactionism and role theory. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 1, pp. 311-378). New York: Random House.

Suls, J., Lemos, K., & Stewart, H. L. (2002). Self-esteem, construal, and comparison with the self, friends, and peers. *Journal of Personality and Social Psychology, 82,* 252-261.

Telushkin, J. (1992). *Jewish humor.* New York: Morrow & Co.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psychology Bulletin, 20,* 454-463.

van Boven, L., Dunning, D., & Loewenstein, G. (2000). Egocentric empathy gaps between owners and buyers: Misperceptions of the endowment effect. *Journal of Personality and Social Psychology, 79,* 66-76.