The Psychology of Being "Right":
The Problem of Accuracy in Social Perception and Cognition

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Several difficulties are noted with general questions psychologists have been asking about human accuracy, such as whether people are typically accurate or inaccurate, what the boundary conditions for accuracy are, or the general process whereby accuracy may be improved. Instead, a situationally specific approach to accuracy is adopted in which a central role is assigned to the judgmental process. Accordingly, two general paradigms are distinguished addressing accuracy from realistic and phenomenal perspectives. The *realist* paradigm focuses on subjects' judgments and the degree to which these correspond to an external criterion. The *phenomenal* paradigm focuses on subjects' internal criterion as well as their perceptions of the target judgment and the judgment-to-criterion correspondence. Research possibilities in each paradigm are noted. It is suggested that attention to judgmental factors may extend accuracy work in previously unexplored directions.

Researchers' interest in the accuracy of social perception has never waned for too long. Admittedly, early accuracy work came to a virtual halt after the publication of Cronbach's and Gage's critiques (Cronbach, 1955, 1958; Gage & Cronbach, 1955; Gage, Leavitt, & Stone, 1956) and was supplanted by research on the judgmental process (Jones, 1985; Schneider, Hastorf, & Ellsworth, 1979). The process models, however, though initially descriptive, soon acquired prescriptive or "normative" overtones (Funder, 1987). Accordingly, researchers' interest has come to center on people's tendency to stray from optimal modes of judgment (e.g., as embodied by models of statistical inference), and the emphasis shifted from the study of process per se to the study of bias or inaccuracy (see Nisbett & Ross, 1980; Tversky & Kahneman, 1974).

For more than a decade, research on judgmental biases and errors has exerted dominant influence on views of the human cognitive process. Recently, however, several authors took issue with the conclusion that laypersons are incorrigibly inaccurate and error prone (Einhorn & Hogarth, 1981; Funder, 1987; Hastie & Rasinsky, 1988; Kenny & Albright, 1987; Kruglanski & Ajzen, 1983; McArthur & Baron, 1983; Nisbett, Krantz, Jepson, & Kunda, 1983; Swann, 1984). Furthermore, those recent analyses raise several fundamental issues that a comprehensive treatment of accuracy in social perception and cognition may do well to address.

These new developments warrant a reexamination of the accuracy problem in terms of the major themes stressed by recent accuracy analyses. This article pursues this objective and outlines a conceptual framework for the study of human accuracy, in which a central role is accorded to factors affecting the judgmental process at large.

Themes in Recent Accuracy Research

Psychologists' interest in the accuracy of people's judgments is not hard to fathom, for accuracy often seems a valuable asset to possess. Beyond the intrinsic value of having a grasp on "reality," accuracy affords predictability that may help persons cope with their social and physical environments.[1] An accurate tennis player may be able to place his or her shots at just the correct spot on the court to win the point; a spouse who accurately perceives his or her partner's needs may avoid unpleasant conflicts and confrontations; a teacher who can accurately diagnose a pupil's difficulties may be able to take the appropriate remedial steps; and an accurate personnel officer may be able to select the best candidate for the job.

Because of the presumed importance of accuracy (but see Taylor & Brown, 1988), it is of interest to investigate the degree to which persons are generally accurate in their everyday judgments, the conditions under which they are more or less accurate, and the psychological factors that facilitate or hinder accuracy. However, before those questions are examined, it seems worthwhile to consider how accuracy may be defined.

Defining Accuracy in Social Perception and Cognition

In parallel to major philosophical conceptions of truth (cf. Popper, 1959), recent social psychological literature contains

[1] Strictly speaking, no simple relation between accuracy and utility (or adaptive value) should be expected. Rather, utility should depend on the response to an accurate or inaccurate judgment. For instance, an accurate judgment that one is bankrupt may lead to maladaptive depression and withdrawal. By contrast, a mistaken assumption that one is considered successful and likable may contribute to one's well-being and ability to cope.

three separate notions of judgmental accuracy. Perhaps the most prevalent definition is that of a *correspondence* between a judgment and a criterion (Funder, 1987; Hastie & Rasinsky, 1988; Kenny & Albright, 1987). This definition closely resembles the philosophical correspondence theory of truth that compares a perception to a reality.

Also common is the definition of accuracy as *consensus,* or interpersonal agreement between judges (Funder, 1987). Consensus represents consistency within an interpersonal array of judgments; hence it resembles the philosophical coherence theory of truth as the internal consistency of beliefs. Finally, recent analyses of social perception (McArthur & Baron, 1983; Swann, 1984) defined accuracy in terms of judgments' adaptive value. Such a view of accuracy as subjective utility is explicitly indebted (Swann, 1984, p. 461) to James's (1907, 1909) pragmatic theory of truth whereby the veridicality of an idea resides in its apparent ability to work to one's benefit. The correspondence, consensus, and utility perspectives on judgmental accuracy are examined here in some detail.

Accuracy as correspondence between judgment and criterion. A major problem for the correspondence view of accuracy is deciding on the criterion for accurate judgments. Especially in the realm of social perception, this may not be easy. Hastie and Rasinsky (1988) noted why:

> When the object of judgment is as intangible as a personality trait, emotional state, ability, attitude or intention, or as fleeting as a behavior, the establishment of the researcher's criterion itself [must] involve a high degree of subjectivity and intersubjectivity. (p. 34)

This means that a subject's "inaccurate judgment" boils down to "a simple competition between the subject's judgment and the researcher's judgment" (Hastie & Rasinsky, 1988, p. 22).

Does this imply pitting one "privileged" group of judges (the researchers) against another "defenseless" group (the subjects)? In a sense, yes, but the preference for the researchers' judgment is not arbitrary. It is supported by well-reasoned argument and cogent evidence. Such justification can be "a lot of work and shares much with the common sense manner in which everyday beliefs are justified with reference to subjective degree of support and intersubjective consensus" (Hastie & Rasinsky, 1988, p. 4). On those grounds, researchers often have more and better evidence than do subjects. They use sophisticated measurement methods, based on well-validated psychological theory, and can muster more social support for the validity of their judgments than can the subjects. Consequently, "in most research on social judgment even the subjects agree, when the basis for the researchers' judgment is explained, that the researcher has more reasons and better reasons for his or her judgment" (Hastie & Rasinsky, 1988, p. 22).

In short, at least in social perception, criteria for accurate judgments are not invariably self-evident. Often, they need to be justified by complex argument or indirect evidence. Similarly, the adequacy of any given criterion (e.g., supported by a current scientific theory) is perenially open to criticism (as is the theory; Popper, 1959). In this vein, Einhorn and Hogarth (1981) argued that the statistically normative models of inference may not unconditionally represent the criteria for accurate judgments. For instance, the finding that people are insuffi-

ciently regressive in their predictions (cf. Kahneman & Tversky, 1973), and hence stray from values derived from the normative model, assumes that the model itself is applicable in a given situation. This may or may not be the case: If a fluctuation in outcomes represents random variability around a stable parameter, the regressive model may indeed apply. However, a fluctuation may represent systematic shifts rather than random variability. For instance,

> if you think that Chrysler's . . . losses are being generated by a stable process, you should predict that profits will regress up to their mean level. However, if you take the . . . losses as indicating a deteriorating quality of management and worsening market conditions, you should be predicting even more extreme losses. (Einhorn & Hogarth, 1981, p. 56)

The notion that accuracy standards are themselves judgments contingent on argument and evidence has further implications. It suggests that the type of psychological factors that affect most individuals' readiness to accept a given set of arguments or a given body of evidence may similarly influence the standard setters' determination of the criteria. For example, to the extent that the notion of random fluctuation was more mentally accessible to standard setters (cf. Higgins & Bargh, 1987; Higgins & King, 1981) than the notion of a systematic shift, the standard setters may be more likely to define the criterion in terms of a statistical model.

Furthermore, the motivational factors that affect judgments in general should similarly affect standard setters' judgments, that is, the accuracy criteria. Consider, for example, the tendency to make judgments in correspondence with one's needs, for example, needs for esteem or control over one's environment (Kelley, 1971). On the basis of such a tendency, if a given argument was aversive to the standard setter, the judgment it implied would be less likely to be accepted as the criterion. For instance, the notion of random variability could be aversive to the standard setter because of the lack of control it connoted. Accordingly, the standard setter might be reluctant to accept the statistical model as the criterion for accuracy. Similarly, criteria based on notions more propitious to the judge may be more readily accepted.

Accuracy as interpersonal consensus. Hastie and Rasinsky (1988) and Funder (1987) examined interpersonal consensus as a standard for accuracy. Although consensus does not positively establish accuracy (after all, collective fallacies have been known to occur), a lack of consensus may indirectly imply someone's inaccuracy. In other words, consensus may constitute a necessary but not a sufficient condition for accuracy.

The consensus definition of accuracy does not actually clash with the correspondence definition. Specifically, a lack of consensus only indicates that in a set of judgments, some (unidentified) judgment has been inaccurate. It does not tell one whether a specific judgment was accurate or how inaccurate it was. Answers to these questions may be determined by applying the correspondence definition, through identifying an accuracy criterion. As has already been noted, such a criterion is the standard setter's judgment of what is veridical.

Thus, in social perception the correspondence standard of accuracy is a special case of the interpersonal consensus stan-

dard, notably a consensus between the subject's and the standard setter's judgments. Admittedly, the consensus definition does not convey a given judgment's superiority over others, whereas the correspondence definition does convey a standard setter's superiority. These considerations imply an asymmetrical consensus definition of accuracy. A rather different interpretation is implied by the pragmatic definition of accuracy considered next.

Accuracy as pragmatic utility. Recently, Swann (1984) and McArthur and Baron (1983) proposed pragmatic utility as a standard of accuracy. Interestingly, the pragmatist standard is open to different interpretations with correspondingly varied implications for accuracy assessment. The following examines the issues involved.

According to the pragmatist doctrine, a judgment is deemed accurate if it is useful. But what exactly is "useful"? It seems reasonable to define as useful any action or belief that facilitates goal attainment, that is, brings about a desired reward. Such a definition allows two separate senses of utility, a subjective sense and an objective sense. In the subjective sense a reward need not be an external object. Instead, it could be an internal experience. For example, one might choose to believe in the existence of God because such a belief put one's mind at rest and in that way was useful. Thus, usefulness could be highly subjective and reflect a motivational bias toward beliefs whose contents are comforting, pleasing, or otherwise desirable.

Beyond its subjective sense, utility could be defined objectively, for example, in terms of successful task accomplishment by the actor. For example, if a student believes that effort mediates academic success, and she or he exerts effort and attains success, the accuracy of the original belief will be supported. Indeed, it is such an objective sense of utility that social psychologists generally have in mind when discussing the pragmatic standard of accuracy. For instance, Baron (1988) noted that the organism's perception of a crack's width is accurate if it can crawl through it. Similarly, Swann (1984) suggested that a perception is (pragmatically) accurate if the target upholds the perceiver's expectations.

Strictly speaking, however, what defines accuracy in the foregoing examples is a correspondence between a judgment and a criterion rather than utility per se. The fact that an organism succeeds in crawling through the crack is criterial evidence that corroborates the perception of the crack's sufficient width. Moreover, the judgment that the crack was wide enough is not restricted to the (crawling) organism as such but presumably would be reached by any observer exposed to the same information, even if such a judgment was largely devoid of utility to the observer. Similarly, the target's behavior in accordance with the perceiver's expectations establishes that those expectations were accurate by the correspondence definition of accuracy rather than because of their pragmatic usefulness.

Note that the subjective sense of utility defines accuracy from the subject's perspective, whereas the objective sense of utility adopts the perspective of the standard setter. The two perspectives need not coincide. For instance, motivational biases could be idiosyncratic to the subject and not necessarily shared by the standard setter. Thus, a parent may be motivationally disposed to judge that a child is able and likable, whereas the teacher,

lacking such a bias, may be less positive in his or her judgment. Subjective "illusions" of this type often may be adaptive, because they promote contentment and the ability to cope with stress (Taylor & Brown, 1988); in this sense they are pragmatically useful to the person, even if erroneous from an outsider's viewpoint. The foregoing discussion suggests the need to distinguish between *phenomenal* accuracy, defined from the subject's internal perspective, and *realistic* accuracy, defined from the external perspective of the standard setter. This distinction is treated more fully in a subsequent section.

Accuracy Versus Accuracies

Besides attempts to provide a general definition of accuracy (e.g., as correspondence, consensus, or utility), some authors proposed taxonomies of accuracies. Widely referred to is the taxonomy advanced by Cronbach and his colleagues (Cronbach, 1955; Gage & Cronbach, 1955; Gage et al., 1956). This taxonomy refers to the case in which each judge rates a set of targets on a set of traits. For each judgment there is a criterion score, and accuracy is defined as a degree of correspondence, indexed inversely by a discrepancy, between judgment and criterion. Cronbach criticized the use of a single discrepancy score as a measure of accuracy. Instead, he recommended partitioning the score into "component accuracies," of which some were deemed of greater interest than others.

Specifically, some accuracy types seem to be theory driven; they reflect the judges' preexisting stereotypes and biases. In Cronbach's scheme these are implied to be of relatively lower interest value than stimulus-driven accuracies that reflect judges' responsiveness to the external information. For instance, a judge's general tendency to rate all targets on all traits in the same direction (either positively or negatively) could result in accuracy or inaccuracy depending on the relevant criterion scores. Such positivity or negativity bias exemplifies a theory-driven accuracy and is implied to be of little genuine interest. By contrast, a judge's tendency to view a specific target as high or low across the set of traits in relation to other targets represents a stimulus-driven accuracy, because it reflects perceiver sensitivity to external target information. Such accuracy is accorded greater interest value in Cronbach's scheme.

A componential approach to judgmental accuracy is also adopted by Kenny and Albright (1987). The context they address is one in which subjects both form impressions of others and predict others' impressions of them. In parallel to Cronbach, Kenny and Albright also imply that theory-driven accuracies are less interesting than stimulus-driven accuracies. For instance, elevation accuracy concerns the ability of judges in general to know the criterion scores of targets in general. Presumably, such accuracy derives from judges' prior conceptions and biases and hence is regarded of lesser interest than, say, dyadic accuracy, which reflects a given judge's unique ability to predict his or her partner's behavior in the interaction.

The partitioning approach to global accuracy scores seems tied to the notion that a global score confounds several separate accuracies, of which some are of greater theoretical interest than others. This raises two issues for consideration: (a) whether the lists of accuracies identified so far are exhaustive (or nearly

so) or whether it is possible to construct numerous alternate such lists and (b) how general (or specific) any ordering of accuracies by their interest value is.

With regard to the first issue, note that a discrepancy score between judgment and criterion may be partitioned in various ways, giving rise to different lists of accuracies. Each such partition would be based on different conceptual confounds identified within the score (i.e., different potential sources of the overall discrepancy). In turn, such confounds may vary with the content domain of the particular discrepancy and with the types of factors assumed to affect judgments in that domain. For example, a confound untapped by Cronbach or Kenny and Albright could be a situation if one surmised that the global discrepancy scores could be affected by judges' situation-specific biases. To estimate such a type of accuracy, one would need to include a situation's dimension and compare the judge's tendency to yield differential or uniform judgments across situations. Indeed, Swann (1984) implied just such a classification in his distinction between circumscribed (or situation specific) and global (hence, transsituational) accuracy. Further possible confounds could be occasion (referring to time of judgment), judge's state (e.g., excited vs. calm), target's state, and so on.

Thus, depending on the investigator's purpose, it seems possible to classify accuracies in numerous ways. Furthermore, an ordering of accuracies by their interest value also seems to depend on the investigator's perspective. Whereas in Cronbach's framework particular interest was accorded to stimulus-driven accuracies, recent social cognitive interest in people's personal theories, scripts, schemata, or heuristics (Fiske & Taylor, 1984) lends considerable interest to theory-driven accuracies. In fact, the social cognition approach suggests that all encoding of stimulus information depends substantially on (chronically or momentarily) accessible constructs that selectively channel attention to given aspects of the stimulus (Higgins & King, 1981).

It is noteworthy that the various accuracies distinguished in recent research literature all refer to a correspondence between some judgment and a criterion. This basic notion is explicit in Cronbach's and Kenny and Albright's (1987) analyses and is implicit in Swann's (1984) analysis, in which circumscribed accuracy implies a within-situation behavioral criterion and global accuracy a between-situations criterion. Thus, the correspondence definition of accuracy is common to various types of accuracy, whereas differences among them refer to various classificatory dimensions on which judgments could be ordered (e.g., judgmental specificity vs. generality or judgments' basis in theory vs. stimulus information).

Are People Generally Accurate or Inaccurate in Their Social Judgments?

An important "subtext" of much recent literature on human judgment concerns the question of whether laypersons' inferences and perceptions are generally accurate or inaccurate. Research on biases and errors (Kahneman, Slovic, & Tversky, 1982; Nisbett & Ross, 1980) underscored the high incidence of judgmental mistakes perpetrated by the use of suboptimal heuristics. In contrast and possible reaction to this unflattering portrayal, several recent analyses implied that human judg-

ments generally are accurate (McArthur & Baron, 1983; Swann, 1984). Furthermore, these latter analyses hinted at boundary conditions for more versus less accurate judgments and implied some general factors that presumably contribute to accuracy. These notions are considered in what follows.

Boundary conditions for accurate judgments: Natural versus artificial settings. McArthur and Baron's (1983) ecological perspective on human knowledge emphasizes the accuracy of perception in natural environments. From this standpoint, errors may be committed in artificial settings and are often indicative of inappropriate overgeneralizations of otherwise adaptive attunements. Note, however, that the existence of some adaptive attunements does not logically imply that all or even most perceptions in natural settings are accurate. For instance, the restricted visual capacity of bats may result in failures to make various discriminations in their natural environments. Although not critical to their physical survival, such failures could still be considered as representing perceptual errors.

Possibly, one could argue that accuracy in natural settings is present only "where it counts," notably in judgments critical to the organism's survival. However, the evolutionary reasoning itself contradicts this supposition: At any point in time the organism's natural ecology could change such that previously adaptive judgments may now prove fatally maladaptive. Moreover, the incessant battle for survival in natural settings admits losers as well as winners; losing, in turn, may often be traced to judgmental errors that brought about the organism's demise in the hands (paws or claws) of its adversary.

The notion that persons are more accurate in "natural" settings than in "artificial" settings is seconded in papers by Swann (1984) and Funder (1987). According to Swann (1984), "the errors that people make in the laboratory . . . probably occur only rarely in everyday contexts" (p. 460). A presumed reason for this is that in everyday settings, persons may exercise considerably greater control over their social reality than in laboratory settings. In a sense, they have a degree of control over the criterion (e.g., the target's behavior) as well as the judgment (prediction of the behavior). Perceivers' influence over targets, based on targets' motivation to agree with perceivers, may often enhance the accuracy of social perception (Swann, 1984).

Note, however, that it is possible to uphold perceiver expectancies in ways other than by creating a correspondent reality. M. Snyder, Tanke, and Berscheid's (1977) notion of "behavioral confirmation" implies that occasionally targets may be motivated to uphold the perceivers' expectancies contrary to what they themselves believe. For instance, a salesperson may agree with the customer's expressed preference irrespective of his or her own tastes or inclinations. In yet other instances an individual may be motivated to deceive his or her interaction partners, which may promote disparate rather than shared realities. Spies, undercover agents, or confidence tricksters may work hard to disguise their true identities. If they succeed, perceivers may end up with grossly inaccurate predictions.

On occasion, interaction partners may have motivations that pull their beliefs in opposite directions. For instance, antagonists in a bitter feud may be motivated to hold negative opinions of each other: Such unfavorable views might conveniently legitimize otherwise unacceptable hostilities against a rival (see Bar-

Tal, 1986). For the most part, the negative view held by a person's antagonist is unlikely to be shared by the target. In turn, an absence of shared reality may result in predictive inaccuracies. For instance, if B's antagonist believed B to be cruel and callous, whereas B believed instead that she or he was warm and kind, the antagonist may err in predicting B's behavior toward a neutral C.

It thus appears that several motivational factors may determine whether interacting persons subscribe to a commonly shared reality and hence whether they are accurate in predicting each other's behavior. The diversity of possible motivations highlights the difficulty of estimating people's general accuracy in natural settings.

A final problem with comparing the prevalence of accuracy in natural and artificial settings is determining just what constitutes a natural environment for a perceiver. This problem is particularly acute with human perceivers in today's rapidly changing world; in these circumstances, change itself (from old to new environments) may represent a natural state of affairs (Einhorn & Hogarth, 1981; Slovic, Fischoff, & Lichtenstein, 1977). An absence of stringent criteria for what is natural poses a danger of conceptual circularity: Thus, one may argue after the fact that a situation was artificial or natural, given that an erroneous or an accurate judgment has occurred. For instance, succumbing to a car salesman's tricks may be excused on the grounds of the artificial nature of the car lot situation, whereas accurately seeing through such legerdemains may be explained by the considerable naturalness of such settings to members of the "car generation." In conclusion, the notion that persons are more accurate in natural settings than in artificial settings is open to various exceptions and on close examination seems less than totally compelling.

Circumscribed versus global accuracies. Recently, Swann (1984) argued that the circumscribed, or situation-specific, form of accuracy is generally easier to attain than global or transsituational accuracy. Specifically,

> forms of circumscribed accuracy usually require only that perceivers predict target behaviors in a limited range of social situations . . . in which perceivers themselves may often be present. . . . This not only reduces the number of potential influences on target behavior that perceivers must consider, it also raises the probability that perceivers will be familiar with these influences and with how they are apt to affect the behavior of targets. (Swann, 1984, p. 462)

Note, however, that from a social cognitive, constructionist perspective (Fiske & Taylor, 1984; Kruglanski, 1989), the "number of potential influences" that perceivers may consider is not necessarily constrained by the specificity or generality of the relevant judgment. Such potential influences represent perceiver hypotheses about the determinants of target behavior. In turn, the number of hypotheses generated by the perceiver may depend on a variety of cognitive and motivational factors internal to the individual; it is unlikely to be determined exclusively by external factors such as the topic of the hypotheses or their generality versus specificity.

Thus, a person could entertain numerous interpretative hypotheses about a specific situation and only a few hypotheses about a general situation, all depending on (a) the number of relevant constructs momentarily accessible to this individual

(Higgins & King, 1981), (b) his or her stable pool of available constructs on the topic (Higgins, King, & Mavin, 1982), (c) his or her (epistemic) motivation to generate or search for further relevant notions (Kruglanski, in press); and (d) his or her creativity or constructive ability (cf. Amabile, 1983). In summary, the notion that some stimulus situations (e.g., circumscribed ones) generally invite fewer interpretative notions than other situations, and hence that they afford a greater likelihood of accuracy, may be debated from the constructivist perspective.

The argument that accuracy in circumscribed settings benefits from perceivers' familiarity with the situation also needs to be qualified. Specifically, familiarity may not invariably improve accuracy and occasionally may even undermine accuracy. In this vein, Cantor and Kihlstrom (1987, pp. 115–116) commented on the "double-edged sword" of expertise. According to their argument, the processing of ample information on a topic may lead to the development of elaborate, firmly entrenched schemas that are rather refractory to inconsistent information. To the extent that such schemas deviate from a veridicality criterion, the substantial familiarity on which they are based may detract from the judge's readiness to modify them and hence to ultimately lower accuracy.

Of unique social psychological interest is Swann's (1984) assertion that circumscribed accuracy is often higher (or easier to attain) than global accuracy because of identity negotiation processes in social perception. Two separate such processes are distinguished: behavioral confirmation and self-verification. Behavioral confirmation refers to targets' tendency to behave in ways that confirm the expectancies of perceivers (cf. M. Snyder et al., 1977). Self-verification refers to targets' tendency to behave in ways that confirm their self-concepts. According to Swann (1984), "if target self-conceptions and perceiver expectancies differ, both global and circumscribed forms of accuracy are likely to be higher if self-verification occurs" because in such circumstances "perceivers are induced to bring their actions and beliefs into harmony with target self-conceptions [hence] they will be equipped to predict how targets will behave in the future because targets will theoretically continue to behave in accordance with their self-conceptions" (p. 466). By contrast, processes of behavioral confirmation could contribute to circumscribed accuracy while detracting from global accuracy because "targets may behave quite differently once they escape the constraining influence of the perceiver" (Swann, 1984, p. 466).

Although Swann's conclusions may often hold, behavioral confirmation processes need not invariably lower global accuracy. First, the target could occasionally use his or her own behavior as a cue to his or her properties (attitudes, traits) and come to internalize perceiver expectancies via dissonance reduction or self-perception processes (Bem, 1972). If that occurs, a perceiver who expected the target to behave similarly across situations could be right. Second, at least on some occasions the perceiver could take into account the situational constraints (including his or her own influence) on target actions and not expect such behaviors to generalize to alternative contexts. For instance, a psychoanalyst could recognize that a client's aggressiveness represents a transference process uniquely engendered by the therapeutic setting. Similarly, the powerful boss may interpret an employee's friendliness as ingratiation

and not expect it to recur in more egalitarian contexts. Such perceiver sophistication might help him or her avoid pitfalls to global accuracy.

In conclusion, the argument that circumscribed judgments are generally more accurate than global judgments is open to several exceptions.[2] The number of interpretive constructs the perceiver considers need not be more restricted in circumscribed than in global settings, familiarity with a judgmental domain need not invariably improve circumscribed accuracy, and behavior confirmation processes need not invariably lower global accuracy.

Accuracy-Mediating Process

As has been seen, the debate about persons' general accuracy has led to the consideration of putative boundary conditions for accuracy (i.e., of naturalistic vs. artificial conditions and of circumscribed vs. global conditions). In turn, discussion of boundary conditions typically hints at the general process assumed to underlie accurate judgments. Aspects of such an implied process are now examined in some detail.

Amount of information considered. Several authors suggest that the more information a perceiver takes into account, the greater the likelihood of his or her being accurate. McArthur and Baron's (1983) argument that active perceivers are typically more accurate than passive perceivers could be interpreted in terms of the greater amount of information that active exploration may afford. Similarly, their notion of "sins of omission" refers to cases in which the perceiver misses part of what is afforded because of attentional selectivity or because the stimulus array is impoverished. In both cases, therefore, errors are traced to informational deficiencies.

Einhorn and Hogarth's (1981) suggestion that feedback from the environment enhances accuracy implies that the ability to receive sufficient amounts of relevant information improves accuracy. Finally, Swann's (1984, p. 462) suggestion that circumscribed accuracy is easier to attain than global accuracy is premised in part on the assumption that in the former case, perceivers have more relevant information at their disposal.

On close examination, however, the relation between the amount of information and accuracy seems complex. First, the terms *informational sufficiency* and *informational insufficiency*, which are often used to suggest that more information means better accuracy, are circular. Such terms typically fail to specify in advance a definite informational quantity and are used after the fact, that is, after an accurate or inaccurate judgment has occurred.

Second, as several authors have stressed (Campbell, 1969; Weimer, 1979), any amount of information is compatible with multiple alternate hypotheses. Thus, one may continue to hold on to an inaccurate judgment despite considerable amounts of information that though consistent with the "correct" alternative (which the individual may have failed to entertain) are equally consistent with the "incorrect" hypothesis. In other words, considerable amounts of information could be nondiagnostic (Trope & Bassok, 1983) with regard to the correct and incorrect hypotheses.

Third, as was noted earlier (Cantor & Kihlstrom, 1987), ex-

tensive information processing may instill a sense of expertise and overconfidence that may reduce the judge's vigilance and hence his or her ability to spot inconsistent information, resulting in the judge's occasionally perpetrating an error. Finally, an extensive informational search may undermine correct judgments if the information received was itself biased or distorted. For instance, the military commander who believes in a high likelihood of a surprise attack may modify his or her opinion on the basis of new information. However, he or she could have been correct in the first place, and the new information may have been fabricated by foreign agents with the intent of deliberately misleading him or her.

One might argue that information may improve accuracy only if it is the correct information. However, if one accepts the notion that any information (fact, empirical observation) is at least in part a conceptual construction (Kuhn, 1962, 1970; Lakatos, 1970; Popper, 1959; Weimer, 1979), one can regard it as a judgment whose accuracy must be determined in reference to a further criterion, pushing the process indefinitely backward. In other words, one may not know whether one's information was correct any more than whether the judgment based on the information was correct.

All of this suggests that processing more and more seemingly relevant information does not necessarily improve one's chances of reaching a correct judgment: (a) Even if correct, the information could be nondiagnostic with regard to the erroneous hypothesis and the correct alternative. (b) A broad informational base for one's schemata could instill a false sense of security and expertise, leading to an inappropriate assimilation of inconsistent information. (c) Occasionally, the information processed could be incorrect, or more compatible in fact with the erroneous than with the correct alternative, leading the perceiver astray.

Motivational factors. Beyond informational deficiencies, inaccurate judgments have occasionally been linked to motivational deficits. Thus, McArthur and Baron (1983, p. 230) suggested that perceivers' inability to detect deception may reflect a lack of sufficient motivation. Again, the term *sufficiency* in this context could be begging the question. The issue, however, is whether motivation may be linked to accuracy in any simple way.

Consider the distinction between degree of motivation and type of motivation. Recent research (Freund, Kruglanski, & Schpitzajcen, 1985; Kruglanski & Freund, 1983) suggests that some motivations, for example, a need for cognitive closure, may facilitate a "freezing" on particular judgments. To the extent that such judgments deviate from the criterion, a high degree of motivation could promote error. Even a high degree of motivation to avoid cognitive closure (prompted, e.g., by a high level of fear of making a mistake) need not increase judgmental accuracy: As was noted earlier, one's initial hunch could be cor-

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[2] It is not meant to imply that those exceptions constitute uncharacteristic deviations from prevalent situational trends. In general, there does not seem to exist a meaningful way to define a population of possible situations or to assess prevalent trends in such a population. Thus, it seems difficult to assess with any precision the degree to which various locally identified phenomena are or are not typical of most situations.

rect; thus, the tendency to abandon it on the basis of further, possibly invalid, information could increase the likelihood of error. The foregoing arguments suggest that increasing incentives (for correct judgments) need not reduce the incidence of error. Reviews of the relevant empirical literature (e.g., Einhorn & Hogarth, 1981) corroborate this conclusion.

Normative models of judgment. It has been implied that the process whereby accurate judgments are formed is represented by the normative models of inference (Kahneman et al., 1982; Nisbett & Ross, 1980). However, normative models also can be conceived of as constructed, hence potentially fallible, representations of reality (Kruglanski & Ajzen, 1983). As Einhorn and Hogarth (1981) noted, a normative model may be inapplicable to given circumstances (e.g., the model's assumptions may not hold). When this occurs, judgments derived from the model will be inaccurate (i.e., will deviate from the criterion). Thus, normative models do not appear to safeguard accurate judgments, at least not in an absolute sense.

In summary, the accuracy literature has identified several process variables that are implied to generally improve accuracy. However, on close scrutiny, possible exceptions to those arguments become apparent. In particular, high degrees of motivation, large amounts of information, or the use of normative models may not reliably improve accuracy. It seems fair to conclude that as of now, no compelling analysis exists concerning the general process whereby accuracy is obtained.

Recent Trends in Accuracy Research: Some Interim Conclusions

The discussion thus far warrants several conclusions. First, the most prevalent definition of accuracy has been that of a correspondence between judgment and criterion. Assuming that the criterion, too, represents someone's judgment, the correspondence definition blends into the (asymmetrical) consensus definition. Second, the various forms of accuracy identified in the literature typically share the correspondence notion and differ in the judgmental aspects of interest (e.g., the object of judgment, or judgmental specificity vs. generality). As judgmental aspects are potentially quite numerous and varied, so are possible forms of accuracy.

Third, no compelling arguments or evidence exist for the notion of boundary conditions separating more accurate from less accurate judgments. Specifically, the issue is moot whether naturalistic judgments are generally superior to judgments in artificial settings or whether situationally specific judgments are typically superior to global judgments. Finally, suggestions for process variables that may generally improve accuracy have been found wanting and open to exceptions. Thus, processing large bodies of information prior to making a judgment or having high motivational involvement in a topic need not improve accuracy and could even detract from accuracy in some circumstances.

The difficulties in identifying general variables that affect judgmental accuracy could stem in part from the same fundamental issue: The fact that the criterion for accuracy in social perception and cognition is itself a (standard setter's) judgment open in principle to revision under the appropriate conditions.

Specifically, if the criterion itself is tentative and potentially revocable, the same judgment that was previously discrepant from the criterion, and hence considered incorrect, could now coincide with the (revised) criterion, and hence be considered correct. Similarly, a previously correct judgment would be incorrect in reference to the revised criterion.

Consider that any judgment is determined by a combination of the relevant variables at appropriate levels (e.g., an appropriate extent of pertinent information, an appropriate degree of motivational involvement). If the accuracy criterion shifts, the very same combination of variables could give rise to correct and incorrect judgments in different situations. As Funder (1987) aptly noted, the process that promotes errors in one setting may mediate accurate judgments in another setting (see also Kruglanski & Ajzen, 1983). Thus, it does not seem feasible to hope that a general accuracy-mediating process will be uncovered. Nor does it seem feasible to hope for a meaningful answer to the question of whether persons are generally accurate or inaccurate in their judgments: Admitting the possibility of criterial shifts, different answers to this question could be warranted at different times.

The discussion so far may seem to paint a gloomy picture for the future of accuracy research. Actually, such a negative outlook befits only general questions about human accuracy. In contrast, situationally specific questions about accuracy appear more tractable. Indeed, the remainder of this article explores possible directions for accuracy research within situationally specific paradigms. It is suggested that in such cases, accuracy issues are profitably approached from the perspective of the process that governs the formation of all judgments. Thus, although historically the study of the judgmental process supplants that of accuracy (Funder, 1987; Jones, 1985), I propose that the two perspectives may be fruitfully combined.

A Process-Based Analysis of Situational Accuracy

The foregoing conclusions serve as a basis for a reanalysis of the accuracy problem in social perception and cognition. A general framework for conceptualizing accuracy is outlined and applied to two separate paradigms for possible accuracy research. The *realist* paradigm approaches the study of accuracy from the external standpoint of the standard setter. The *phenomenal* paradigm approaches accuracy from the internal standpoint of the judge. These notions are now considered in greater detail.

Accuracy Framework

Consider the definition of accuracy as a correspondence between a judgment and a criterion that constitutes, in turn, some standard setter's judgment. Such a conception of accuracy implies a compound judgment (or metajudgment) that consists of the following simple judgments: (a) the target judgment, (b) (judgment of) the criterion, and (c) (judgment of) correspondence between judgment and criterion.

When the standard setter is someone other than the subject, accuracy may be investigated from a realist perspective. In other words, the standard is assumed to represent the external reality,

and the key question is what may cause the subject's judgment to mirror or deviate from such reality. When the standard setter happens to be the subject him- or herself, accuracy may be investigated from a phenomenal perspective. In such a case the question centers on the perception of accuracy, that is, on the degree to which the subject regards two of his or her own judgments (the target judgment and the criterion) as correspondent.

In both the realist and phenomenal paradigms, accuracy issues are assumed to be closely tied to the judgmental process at large. Thus, before pursuing the discussion of the accuracy topic, a brief outline of such a process is given.

Judgmental Process: Hypothesis Validation and Generation

The following characterization of the judgmental process is based on my theory of lay epistemics presented in detail elsewhere (e.g., Kruglanski, 1989, in press; Kruglanski & Ajzen, 1983; Kruglanski & Klar, 1987). According to this theory, judgments are reached in the course of a twofold process during which hypotheses are generated and validated.

Hypothesis validation. The validation stage is assumed to be accomplished through implicational reasoning. The individual departs from a premise linking (in an if–then fashion) a given category of evidence with a given hypothesis and proceeds to infer the hypothesis upon affirmation of the evidence. The if–then linkage between an evidential category and a hypothesis can be thought of as an inferential rule that an individual has available in his or her mental repertory and that she or he can access and apply at a given instance of judgment.

Hypothesis generation. The implicational validation of hypotheses has no unique or natural point of termination. In principle, the individual could connect the same evidential category (A) to several competing hypotheses (B, C, and D; Campbell, 1969; Weimer, 1979). In other words, a person could draw on different inferential rules pertinent to a given category of evidence. The process of coming up with such rules at a given instance is referred to as *hypothesis generation.*

To the extent that the same evidence was linked to several competing hypotheses, further validation would be required before a confident judgment was reached. The validation process is assumed to be based on the principle of diagnosticity (Trope & Bassok, 1983), whereby such evidence is sought that is likely if, say, Hypothesis B is correct and unlikely if Hypothesis B or C is correct. In other words, a further inferential rule is used in which a new category of evidence (i.e., diagnostic evidence) is linked with the hypothesis of interest, and the hypothesis is considered validated if the appropriate evidence is obtained.

Note that in principle the individual could proceed to generate additional inferential linkages connecting the new evidence to further competing hypotheses. This would require still further validation efforts, and so on. Ultimately, then, persons' ability to reach confident judgments depends on their tendency to generate alternative hypotheses on a topic. The theory of lay epistemics recognizes two categories of factors assumed to affect such a tendency, related to notions of cognitive capability and epistemic motivation.

Capability. Long-term capability to generate hypotheses in a content domain is related to the availability of constructs in long-term memory (Higgins et al., 1982). The available constructs could be simple categories (e.g., woman, man, lawyer, physician) or composite linkages of categories including various inferential rules of the kind discussed earlier (e.g., "if a person wears a white coat, she is a physician"). Short-term capacity to generate hypotheses on a topic has to do with the concept of accessibility (Bruner, 1973; Higgins & King, 1981), referring to the subset of available constructs that are momentarily at the focus of attention, for example, due to contextual priming.

In summary, it is assumed that a person's tendency to generate hypotheses on a given topic is constrained by his or her cognitive capability in a domain. It depends on his or her repertory of available constructs, particularly those that are currently activated or accessible.

Epistemic motivations. Beyond capability constraints, a person's tendency to generate alternative hypotheses on a topic is assumed to depend on several motivational factors. The "need for cognitive closure" is assumed to inhibit the hypothesis-generation process after some hypothesis is generated that gives a reasonable fit to the evidence. The need for closure is assumed to arise when the perceived costs of extensive information processing are high (e.g., under time pressure or the competition of alternative interests) or when the benefits of having closure (e.g., guidance of action, possibility of prediction) are high.

The "need to avoid closure" is assumed to facilitate the process of generating alternative hypotheses on a topic. Such a need is assumed to arise when the individual shuns judgmental committment on a topic, for example, because of the restriction of freedom this may impose (M. L. Snyder & Wicklund, 1981), the need to make an unpleasant decision on the basis of the judgment, and so on.

Finally, the "need for specific closure," or for the avoidance of specific closure, may either inhibit or facilitate the generation of alternative hypotheses depending on whether current cognitive closure is subjectively pleasing to the individual. For instance, a person whose current hypothesis states that his or her bank account is overdrawn may find this closure unpleasant and hence be motivated to generate alternative hypotheses ("The bank teller has made a mistake"). In contrast, a person who assumes that the account is "in the black" may find this closure pleasant and be unmotivated to think of alternative possibilities.

This concludes my brief description of the lay epistemic model. I now resume the main discussion and see how various judgmental notions just outlined apply to the realist and phenomenal accuracy paradigms in social perception and cognition.

Realist Paradigm

The realistic study of accuracy stresses the psychological factors that lead subjects' judgments to coincide with a given situational criterion. In such a framework the standard setter's judgmental process is neglected. Rather, the focus is on the subject's judgment and its degree of correspondence with an externally defined reality. Most social cognitive research on error and bias falls into this category, for example, the study of cognitive heu-

ristics (for reviews, see Kahneman et al., 1982) in which lay judgments are compared with a priori assumed normative criteria. Application of the judgmental perspective may afford a systematization of such research and may suggest new ways of thinking about issues of realistic accuracy.

In particular, the notion of the judgmental process suggests several categories of factors that may lead a judgment's content to coincide with or deviate from a specific criterion. Those factors are considered now in some detail.

Availability of inferential rules. A person's tendency to render (situationally) accurate judgments should depend on the relevant inferential rules that she or he has available in memory. As was noted earlier, such inferential rules are if–then statements that link a given category of evidence with a given judgment. Thus, the same information (or evidence) could serve as a basis for correct or incorrect judgments, depending on the specific inferential rule being used.

The research literature in social and cognitive psychology attests that persons have in their mental repertories a variety of inferential rules on diverse topics and that those can detract from or contribute to judgmental accuracy in specific contexts. For instance, some people may have acquired various judgmental heuristics (e.g., the representativeness heuristic discussed by Kahneman et al., 1982) that imply judgments at variance with normative statistical predictions. To the extent that the latter are assumed to represent the criterion in some situations, the use of heuristics may be said to propagate errors (Nisbett & Ross, 1980).

Some inferential rules may relate to persons' conceptions of their own selves or to their self-schemata (Markus, 1977). Depending on the situational criterion, such self-schematic rules may facilitate or hinder accuracy. Thus, some individuals may use negative self-schemata in reference to given classes of judgment, whereas others may use more positive schemata. According to Beck's theory of depression (Beck, Rush, Shaw, & Emery, 1979), for example, negative self-schemata may systematically influence the judgments of depressives. "If it was my performance, it must have been low" is a hypothetical example of a self-schematic rule that may lead a depressed person to underestimate the level of his or her performance. On the other hand, if the objective performance was in fact low, the very same rule may promote accuracy.

In this connection, Dykman, Abramson, Alloy, and Hartlage (1987) found that depressives (in comparison with nondepressives) erred more in rendering inappropriately negative self-judgments when their negative schemas were relevant to the experimental task. Both depressives and nondepressives exhibited positive errors, negative errors, and accurate responses, depending on the way in which their preexisting schemata related to the situational criteria of correct responding. The Dykman et al. (1987) research furnishes important evidence that "depressive realism" (Abramson & Alloy, 1981; Alloy & Abramson, in press) is situationally specific rather than general. It may depend on whether depressed or nondepressed subjects' judgmental processes yield outcomes that correspond with the situational criteria of accuracy.

Although some inferential rules may derive from subjects' self-schemata, others may derive from their conceptions of ex-

ternal sources of information. For example, a statement linked with a source perceived as authoritative is more likely to be accepted by an individual and hence be adopted as this person's own judgment. In attitude research (for a review, see Chaiken & Stangor, 1987), such reliance on various source heuristics has been shown to often mediate subjects' opinions. Obviously, reliance on a source heuristic would heighten accuracy to the extent that the judgment of a positively regarded source corresponded with the criterion; reliance on a source heuristic may lower accuracy to the extent that the source's judgment does not correspond with the criterion.

In summary, persons may possess in their mental repertories an assortment of inferential rules that they may use in judgmental situations. Such rules may derive from various bases including a natural acquisition of schemata about self and others or a deliberate study of concepts in various formal disciplines. Depending on situationally defined criteria, subjects' available rules may impede or facilitate the formation of accurate judgments.

Rule learning and unlearning. To the extent that a situational criterion can be agreed on, accuracy may be improved by making available to persons inferential rules likely to yield criterion–correspondent judgments. Recent work by Nisbett and his colleagues (Fong, Krantz, & Nisbett, 1986; Jepson, Krantz, & Nisbett, 1983; Nisbett, Cheng, Fong, & Lehman, 1987; Nisbett et al., 1983) suggests that the teaching of statistical rules can increase the likelihood of statistical reasoning, hence of statistically accurate judgments. Fong et al. (1986) found that subjects' likelihood of giving statistical answers to simple problems increased with their previous amount of statistical education. Similarly, subjects' tendency to give statistical answers was higher at the end of a course in statistics than at the beginning.

In the same way that (situationally) appropriate inferential rules may enhance judgmental accuracy, inappropriate rules may hinder accuracy. It is thus important that such inferential stumbling blocks be identified and winnowed from the individual's conceptual repertory. Thus, inappropriate assumptions about sample representativeness (Nisbett & Ross, 1980), or insufficient appreciation of chance factors in observed outcomes, may have to be assailed and eliminated from persons' inferential repertories if their statistical accuracy is to improve. Similarly, to enhance the accuracy of self-judgments (e.g., by bringing them in line with social consensus), one's overly negative or positive self-schemata may have to be modified. Reliance on various revered sources (e.g., one's parents) may need to be reduced to improve judgment in domains in which the sources' notions deviated from the accuracy criteria.

Accessibility. In order for a rule to be used in a judgmental situation, it must not only be available in an individual's long-term memory but also be momentarily accessible (Higgins & Bargh, 1987; Higgins & King, 1981; Higgins et al., 1982). Specifically, accessibility of an appropriate rule will facilitate accuracy, whereas that of an inappropriate rule will hinder accuracy. Recent research suggests that accessibility is determined by frequency as well as recency of activation (Higgins, Bargh, & Lombardi, 1985; Wyer & Srull, 1981). For example, in Luchins's (1942) work on cognitive sets, an inappropriate judgmental rule may have become accessible because of activation

recency and may therefore have led to erroneous solutions on subsequent judgmental tasks. The same research suggests, however, that heightened rule accessibility may facilitate accuracy on a previous task to which the rule was appropriate.

Accessibility of relevant constructs is possibly involved in the encoding of situational evidence in ways that highlight the applicability of given inferential rules. Support for this notion comes from studies in which specific packaging of the evidence may have primed the appropriate encoding categories and hence increased subjects' tendency to use otherwise underused principles. Thus, in research by Ajzen (1977), base rate information was more likely to be used when it was interpreted to possess causal significance. In research by Kruglanski, Friedland, and Farkash (1984), statistically correct use of the regression to the mean rule increased when such evidence was couched in familiar, everyday examples. Presumably, such examples served to activate the appropriate constructs (chance factors, variability) that rendered the regression logic more apparent to subjects. Similarly, research on logical reasoning (Griggs & Cox, 1982) suggests that subjects' erroneous failure to falsify hypotheses (via the modus tollens) is much reduced when the examples are couched in familiar terms.

Motivation. Individuals' tendency to make a given inference may depend in part on their motivational condition. To the extent that the evidence supported an undesirable conclusion, thus frustrating the individual's need for specific closure, she or he may downgrade the value of the evidence and instead base his or her judgments on alternative evidence (Lord, Lepper, & Preston, 1984; Lord, Ross, & Lepper, 1979). It is noteworthy that needs for specific closure may hinder or help accuracy depending on whether the judgment those needs imply coincides with the situational criterion. For instance, the parent of an aspiring pianist may be motivationally biased to judge her or his performance as superior to that of her or his competitors. Such a judgment may happen to correspond to the referee's assessment and hence be correct under the circumstances. However, a similar motivational bias on the part of the competitors' parents would obviously hinder the accuracy of their respective judgments.

A need for cognitive closure as such may increase a person's tendency to encode the stimulus information in terms of momentarily accessible categories and may decrease the tendency to search for alternative relevant constructs. To the extent that the accessible categories do not coincide with the criterion, the need-for-closure effects can detract from accuracy. For example, in research by Kruglanski and Freund (1983, Study 1), primacy effects in impression formation were more pronounced under a high need for closure than under a low need for closure (manipulated via time pressure). Presumably, primacy effects reflect subjects' erroneous tendency to encode stimulus information on the basis of (positive or negative) categories activated by early items in the series.

Similarly, the tendency to anchor judgments in early assessments (Kahneman et al., 1982) could reflect an inclination to base those judgments on initially accessible estimates. Indeed, Kruglanski and Freund (1983, Study 3) found that such erroneous anchoring tendencies increased under a high need for closure in comparison with a low need for closure. Note that in some circumstances, need-for-closure effects could contribute to rather than detract from accuracy. This would happen where initially accessible categories coincided with the criterion but where subsequently generated categories did not.

A need to avoid closure may contribute to judgmental accuracy where initially accessible categories diverge from the criterion. Accordingly, Kruglanski and Freund (1983, Studies 1 and 3) found weaker primacy and anchoring effects under a high (in comparison with a low) need to avoid closure (manipulated through evaluation apprehension). A need to avoid closure could hinder accuracy in situations in which initially accessible categories coincided with the criterion but subsequently activated ones did not.

Initially accessible categories may often represent chronically rather than momentarily active constructs (Higgins & King, 1981). For instance, prejudiced subjects may have chronically accessible stereotypes of particular social groups. Under a high need for closure, those prejudicial constructs may drive subjects' judgments to a greater extent than individuating information about the targets; this may occasionally result in inaccuracies. Thus, Kruglanski and Freund (1983, Study 2) found that Israeli subjects under a high (rather than low) need for closure exhibited a stronger tendency to assign higher grades for the same composition when the author was identified as a member of a positively stereotyped group than when the author was identified as a member of a negatively stereotyped group (Ashkenazi vs. Sepharadi Jews). Similarly, Bechtold, Zanna, and Nacarrato (1985) found that subjects prejudiced against women in management discriminated against female candidates for a position only under a high (but not under a low) need for closure. Because the male and female candidates were equally qualified for the job (their resumes were rated as equally attractive by judges unaware of the candidates' gender), subjects' discriminatory judgments may be considered erroneous in this case.

Summary: Accuracy research in the realist paradigm. The preceding discussion suggests that the conception of the judgmental process is applicable to accuracy research in the realist paradigm. Specifically, the various categories of factors relevant to judgment in general (such as availability and accessibility of inferential rules or the epistemic motivations) also seem relevant to subjects' tendency to make accurate or inaccurate judgments. In short, the central issue in realistic research on accuracy or error concerns the particular combination of factors that in a given situation prompt a judgment whose content coincides with or deviates from the criterion.

Insofar as they represent (standard setters') judgments, the accuracy criteria, too, are assumed to be tentative and potentially modifiable. This means that the very same combination of factors that fostered judgmental accuracy could produce inaccuracy if the standard has shifted. Thus, accuracy research in the realist paradigm should be both judgmental (i.e., informed by notions of the judgmental process) and relativistic in reference to tentative situational criteria.

However, the entire issue of accuracy can be investigated from a very different perspective, notably that of the judging subject. In such a case the research problem revolves about fac-

tors that induce the perception of accuracy. This topic is addressed in the following section.

Phenomenal Paradigm

In the phenomenal approach to accuracy, the comparison of a judgment with a criterion is carried out by the subject. A subject's perception of accuracy is likely to be affected not only by (a) what she or he perceives is the case (subject's criterion) but also by (b) what she or he perceives is a given target judgment (e.g., someone else's opinion) and by (c) his or her perception of the degree of correspondence between the two.

In other words, the accuracy judgment differs from other possible judgments in its tripartite structure that includes the target judgment, the criterion, and their interrelation. In this sense, accuracy perception may be thought of as a compound judgment or metajudgment. However, judgment qua accuracy perception should be affected by the same factors that govern the judgmental process at large. If so, one's conception of the judgmental process should contain useful guidelines for the study of phenomenal accuracy.

Rule for accuracy inference. The simple rule most people probably use to determine the accuracy of a judgment is this: A target judgment that corresponds to the criterion is deemed correct, and one that deviates from it to some appreciable degree is deemed incorrect. Thus, in order for the accuracy inference to be made, it is first necessary that the target and criterion judgments be formed and be available in memory. Second, both judgments should be jointly accessed and compared with each other. Probably, such a comparison would not be carried out without at least some degree of interest in its outcome, that is, a given degree of motivation to make an accuracy assessment. Finally, in order to make an inference of accuracy or inaccuracy, it is essential that the evidence (for accuracy or inaccuracy) be appropriately interpreted. Those issues are considered here in turn.

Target and criterial judgments. Both target and criterial judgments are assumed to form in accordance with the general judgmental process described earlier, although the contents of those judgments may often differ. For instance, the target judgment may be formed in a different context from that of the criterion. In turn, contextual differences may activate divergent cognitive categories, ultimately resulting in judgments of different contents (Higgins & Stangor, 1988). Thus, a target judgment might involve ascribing a political opinion to oneself as a young student in the 1960s. If the context associated with such an opinion was encoded as "a militant university campus," the constructs this might activate could prompt an ascription to oneself of a strong antiestablishment sentiment. This may or may not correspond to one's current views of the 1960s establishment (i.e., one's criterion) and may or may not contribute to the assessment of one's prior opinions as correct or incorrect.

Alternatively, the target judgment may involve an opinion ascribed to another person. To the extent that the other person was identified by some category label (e.g., a woman, a physicist, an Englishman, or a professor), this could activate stereotypic constructs that may influence the target judgment. For example, a *professor* label might contribute to the perception that the

person's political views are liberal. Such views would then be considered correct or incorrect depending on the subject's views (i.e., his or her criterion) on those matters.

The foregoing examples suggest the possibility of phenomenal accuracy research in which context differences between criterial and target judgments are systematically varied. For instance, one may speculate that ambiguous statements imputed to a target person would be considered more accurate if uttered in a context that is similar (rather than dissimilar) to that of the criterial judgment, because similar contexts are likely to evoke the same encoding categories for the two judgments.

Effects of (similar vs. dissimilar) encoding categories may be qualified by motivational considerations. For instance, the motivation for cognitive closure (Kruglanski, in press) has been shown to enhance the effects of early impressions (Kruglanski & Freund, 1983). Accordingly, if the contexts of judgment and criterion primed similar categories, a high need for closure should increase the likelihood that these would be used in judgment. This should strengthen the perception of (target judgment) accuracy. For the same reason, a high (rather than low) need for closure should weaken the perception of accuracy where formation contexts of target and criterial judgments primed different categories.

Motivations to form judgments of particular contents, or needs for specific closure (Kruglanski, in press), may affect both target and criterial judgments. Possibly illustrative of such a process are recent findings by Vallone, Ross, and Lepper (1985), in which pro-Arab viewers judged the content of major networks' coverage of the Beirut Massacre (of 1982) very differently from pro-Israeli viewers. Vallone et al. suggested that a divergent perception of the media position (the target judgment) could be one mechanism responsible for the perception of opposite media biases by the two types of viewer. Another mechanism could be perceptions of what actually took place (the criterion). Both target and criterion judgments of the Vallone et al. (1985) subjects could have been strongly affected by their divergent motivations vis à vis the highly involving topic at issue. If so, motivations for specific closure may have affected the perceptions of bias in the Vallone et al. research.

Determinants of comparison between judgment and criterion: Role of joint accessibility. To the extent that target and criterion judgments are similar in content, the perception that the former is accurate should be strengthened if it was actually compared with the latter. On the other hand, if the two judgments were dissimilar, perception of accuracy should be weakened (or perception of inaccuracy strengthened) if a comparison was carried out. It is, therefore, of interest to ask what factors may facilitate or inhibit a comparison between the target and criterion judgments.

One important such factor may be the individual's concommittant awareness of target and criterion, or their joint momentary accessibility. In turn, a possible determinant of joint accessibility may be the degree to which the judgmental topic is involving or self-relevant: If it is, the person might possess highly accessible opinions readily recalled by mere consideration of the issue. Any attempt to determine another person's (or one's own previous) judgment on such a topic is likely to prime one's own current opinion (the criterial judgment), thus increasing

the likelihood that the two will be compared. It seems less probable that the reverse process will occur. Thus, thinking about one's own opinion on an issue (the criterion) is less likely to bring to mind alternative target judgments on this problem (e.g., other people's opinions): Such judgments may not be strongly connected in the individual's mind to the topic as such; hence they are less likely to be primed by its mere consideration.

Motivational bases of comparison. Occurrence of a comparison between judgment and criterion may be facilitated or inhibited by the same epistemic motivations that affect the formation of target or criterion judgments. Thus, an individual may have a high need for closure regarding a judgment's accuracy, and this may increase the likelihood of the comparison. In contrast, a person motivated to avoid closure on the accuracy issue would be less likely to carry out the comparison. Finally, persons may have needs for specific closure pertaining to accuracy assessment, and those may appropriately affect the comparison tendency: An individual may wish for a specific comparison outcome, for example, proving oneself correct; expectation of such an outcome may enhance the likelihood of a comparison, whereas expectation of the opposite outcome may reduce this likelihood.

Perception of correspondence or discrepancy. The comparison outcome as such, that is, the perception of correspondence or the discrepancy between target and criterion, may also be influenced by various cognitive and motivational determinants of judgments. For instance, an individual may strongly expect to agree with another person, for example, a longtime friend known to generally share his or her attitudes and opinions. Similarly, a person's self-concept may suggest that his or her judgments would be consistent over time. Both expectations may raise the individual's perceptual threshold for discrepancies and hence lower his or her tendency to judge that an error has occurred. Opposite expectancies, notably of a disagreement with another person or with one's own prior judgment, may lower the threshold for perceived discrepancies and increase the tendency to recognize errors.

The perceptual threshold for discrepancies may also be influenced by motivational factors. In some situations, one's wishes might dispose a perception of discrepancy between one's own views and those of another person. Possibly, perceptions of media bias by subjects in the Vallone et al. (1985) research were motivated by a desire to sway the media to their own side on future occasions. Similarly, the perception of one's own past errors could be motivated by the desire to view oneself as having grown wiser or as having "seen the light" (Ross & McFarland, 1988). The various cognitive and motivational determinants of perceived discrepancies could be profitably explored in future research on phenomenal accuracy.

Interpreting the comparison outcome: Determination of accuracy or error. Although inconsistency between target and criterion judgments is compatible with the notion that the former is erroneous, alternative interpretations are possible and may be adopted under the appropriate conditions. One such alternative interpretation is that the criterial (rather than the target) judgment is mistaken; another is that both judgments are accurate, albeit in different situations. I examine these two alternatives in turn.

Various cognitive and motivational factors may dispose an individual to revoke his or her criterion when the individual notes its incompatibility with the target judgment. For instance, the target judgment may belong to someone whom the individual reveres as a credible authority. In addition, new evidence may be revealed that supports the target judgment. In such a case, change may take place, and the target judgment may be adopted as the new criterion.

Furthermore, the person might fear that denial of the target judgment would elicit the judge's anger and rejection. If the person is outcome dependent on the judge, he or she may be motivated to modify his or her own criterion and admit to having committed an error. By contrast, a high need for cognitive closure may induce a resistance to changing one's current criterion (Bechtold et al., 1985; Kruglanski & Freund, 1983); this may increase the tendency to regard the target judgment as erroneous.

Rather than making a cut-and-dried decision on whether the target or the criterion judgment is accurate, an individual may differentiate between domains in which each applies (Abelson, 1959). Such differentiation may require the accessibility of notions about the relevant boundary conditions. For instance, differentiating between helpful and harmful effects of alcohol may require that the distinction between "moderate" and "excessive" quantities of the substance be accessible to the person.

Various motivational conditions may affect the tendency to adopt domain differentiation as a mode of inconsistency resolution. For instance, under a high need for cognitive closure (Kruglanski, in press), the person may avoid differentiation because of the substantial processing efforts this may require. In other circumstances, however, unequivocal conferral of error status on one of the inconsistent judgments may carry unpleasant implications for one's own or another's esteem. In those situations, the individual may opt for the "face-saving" solution of differentiation in which each judgment has partial truth.

Consequences of phenomenal accuracy for interpersonal attitudes and actions. Phenomenal accuracy could be highly relevant to social attitudes and behavior. Common experience suggests that the conviction of being right (self-righteousness) may often foster a feeling of superiority over others who happen to disagree with one's judgments. Occasionally, this may encourage a derogation of those persons and may legitimize punitive acts designed to correct their distorted views. For instance, in Milgram's (1974) obedience research, subjects' compliance with the request to administer painful shocks to learners could at least partially be due to the cover story that the punishment is meant to improve the accuracy of learners' performance.

Of interest is what factors may mediate persons' interpersonal reactions to perceived accuracy of self and others. Two general classes of such factors are possibly involved: (a) subjects' confidence in their accuracy assessments and (b) the degree to which they regard accuracy as an important value. Both factors may interactively determine persons' interpersonal reactions to accurate or inaccurate others. Presumably, persons who both attach high value to accuracy and have high confidence in their accuracy assessments would react more extremely as a function of other persons' perceived accuracy than would persons who either place low value on accuracy or have low confidence in

their accuracy assessment. In other words, highly confident persons who value accuracy might be less tolerant of persons whose views differ from their own and more respectful of persons whose views they accept.

Research on the authoritarian personality (Adorno, Frenkel-Brunswick, Levinson, & Sanford, 1950) is generally consistent with those predictions. Specifically, high authoritarians have been distinguished by their strong views and convictions (indicative of high confidence), negative attitudes toward minorities (suggesting intolerance of divergent perspectives), adulation of high-status persons (presumably considered right), and disrespect of low-status persons (suspect of being wrong). Further research could study reactions to putatively correct or incorrect others as a function of subjects' situationally induced confidence and the situational value of accuracy.

Summary: Accuracy research in phenomenal paradigm. The phenomenal paradigm focuses on factors affecting the perception of accuracy. Perceived accuracy is conceptualized as a metajudgment involving (a) the target judgment, (b) the criterial judgment, and (c) the judgment of correspondence between target and criterion judgments. Beyond its unique tripartite structure, the accuracy metajudgment is assumed to be governed by cognitive and motivational determinants of judgments at large. Specifically, for accuracy to be assessed, target and criterion judgments need to be available in the individual's memory and be jointly accessible. Furthermore, target and criterion judgments need to be compared with each other, and the comparison outcome needs to be appropriately perceived and interpreted. All of those events depend on the accessibility of appropriate cognitive categories and on the appropriate motivational conditions. In general, then, cognitive and motivational determinants of the judgmental process at large seem highly relevant to the study of accuracy in the phenomenal paradigm.

Recapitulation and Conclusion

This article considers recent conceptions of accuracy in social perception and cognition. From a review of several theoretical treatments of the topic, I have concluded that several major questions typically posed about human accuracy have not been satisfactorily resolved, nor do they seem likely to be resolvable in the foreseeable future. It has not been possible to meaningfully answer whether people are generally accurate or inaccurate or to reliably estimate the proportion of times at which they may be. Furthermore, it has not been possible to delineate general classes of boundary conditions for accurate and inaccurate judgments or to elucidate the process (or method) for reaching accuracy.

Instead of coping with general questions about human accuracy, a situationally specific approach to the issue has been outlined. Such an approach adopts the correspondence definition of accuracy and assumes that the criterion for accuracy represents the standard setter's judgment as to the true state of affairs. It follows that the criterion is relative to the situation and to the standard setter's perceptions rather than being absolute in any strong sense of the term.

The present interpretation suggests that, despite historical separation, a study of the judgmental process is highly relevant

to the study of accuracy. According to this analysis, determination of accuracy constitutes a metajudgment comprising three components: the target judgment, the criterion, and the correspondence between them. Each of those components is itself a judgment governed by the cognitive and motivational factors that affect judgments in general.

This conception suggests two general paradigms for accuracy-related research: In the realist approach the situational criterion (the reality) is assumed to be known, and the research addresses the conditions under which subjects' judgments approximate the criterion. In the phenomenal approach, the focus is on subjects' compound perception comprising the judgment, the criterion, and their correspondence. Both research paradigms contain numerous possibilities for further accuracy research. By systematically outlining their judgmental underpinnings, this analysis may help extend the study of accuracy in previously unexplored directions.

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Call for Nominations

The Publications and Communications Board has opened nominations for the editorships of *Psychology and Aging,* the *Journal of Experimental Psychology: Animal Behavior Processes, Contemporary Psychology,* the Personality Processes and Individual Differences section of the *Journal of Personality and Social Psychology,* and *Psychological Assessment: A Journal of Consulting and Clinical Psychology* for the years 1992–1997. M. Powell Lawton, Michael Domjan, Ellen Berscheid, Irwin Sarason, and Alan Kazdin, respectively, are the incumbent editors. Candidates must be members of APA and should be available to start receiving manuscripts in early 1991 to prepare for issues published in 1992. Please note that the P&C Board encourages more participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. To nominate candidates, prepare a statement of one page or less in support of each candidate.

- For *Psychology and Aging,* submit nominations to Martha Storandt, Department of Psychology, Washington University, St. Louis, Missouri 63130. Other members of the search committee are David Arenberg and Ilene C. Siegler.

- For *JEP: Animal,* submit nominations to Bruce Overmier, Department of Psychology-Elliott Hall, University of Minnesota, 75 East River Road, Minneapolis, Minnesota 55455. Other members of the search committee are Donald A. Riley, Sara J. Shettleworth, Allan R. Wagner, and John L. Williams.

- For *Contemporary Psychology,* submit nominations to Don Foss, Department of Psychology, University of Texas, Austin, Texas 78712. Other members of the search committee are Edward E. Jones, Gardner Lindzey, Anne Pick, and Hans Strupp.

- For *JPSP: Personality,* submit nominations to Arthur Bodin, Mental Research Institute, 555 Middlefield Road, Palo Alto, California 94301. Other members of the search committee are Charles S. Carver, Ravenna S. Helson, Walter Mischel, Lawrence A. Pervin, and Jerry S. Wiggins.

- For *Psychological Assessment,* submit nominations to Richard Mayer, Department of Psychology, University of California-Santa Barbara, Santa Barbara, California 93106. Other members of the search commitee are David H. Barlow and Ruth G. Matarazzo.

First review of nominations will begin January 15, 1990.