

# Do Positive Illusions Foster Mental Health? An Examination of the Taylor and Brown Formulation

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The proposition recently offered by S. E. Taylor and J. D. Brown (1988) that positive illusions foster mental health has garnered considerable attention and acceptance. However, the significant theoretical and applied implications of their view for mental health require a critical evaluation of their argument. An examination of the logic and empirical evidence used to relate mental health to three key positive illusions—unrealistically positive views of the self, illusions of control, and unrealistic optimism—failed to substantiate Taylor and Brown's thesis. Further survey of more recent studies on positive illusions and mental health also failed to lend support to the Taylor and Brown generalization. Close consideration of several assumptions underlying the formulation raises further questions regarding their thesis. The present article concludes that it remains unproven that positive illusions foster mental health.

According to Western philosophical tradition spanning more than 20 centuries, the unique quality of humankind is the ability to engage in rational, adaptive thought and to distinguish the real from the apparent (Copleston, 1957). Many philosophers view the attainment of truth to be the ultimate good and tantamount or conducive to individual happiness. Distortion of reality and the cultivation of illusion, on the other hand, are thought to betray the uniquely human potential to know truth. Thus, the sage's precept "Know thyself" and Socrates's observation that "the unexamined life is not worth living" both reflect the enduring philosophical supposition that accurate knowledge of oneself and of the external world is a goal for and a virtue of humankind.

The field of psychology, in its comparatively short history, has also placed great value on the discernment of reality. Accurate perception of stimulus events in the environment is thought to be necessary if individuals are to avoid harm and adapt successfully to the external world (Gibson, 1979). Within the social domain, studies have long sought to identify the circumstances under which individuals are able to accurately discern the personality characteristics of others (Funder & Colvin, 1991) and of themselves (e.g., Baumeister & Cairns, 1992; Block & Thomas, 1955; Weinberger, Schwartz, & Davidson, 1979). And, more recently, it has been argued that if an individual's person-

ality is to be validly known by others, there must be a congruence between the individual's inner, experiential self and the behavior he or she manifests (Colvin, 1993b). The implicit assumption underlying these several examples from psychology is similar to the supposition that underlies much of Western philosophy: There is indeed a reality out there, and accurate perception of the relation between oneself and this reality is necessary for physical and social adaptation.

Mental health practitioners have been even more emphatic in their views, representing "reality orientation" as of critical importance for mental health. Thus, a monograph prepared for the Joint Commission on Mental Illness and Health (Jahoda, 1958) described the mentally healthy person as someone "able to take in matters one wishes were different, without distorting them to fit these wishes—that is, without inventing cues not actually existing" (p. 51).

A considerable degree of conceptual and linguistic diversity separates philosophers, academicians, and practitioners. Perhaps because of this diversity, it is notable that so many view accurate contact with reality as a vital element of adaptation, well-being, and mental health. Recently, however, this consensual and traditional view has been challenged.

After reviewing the social psychological literature, Taylor and Brown (1988) concluded: "The overriding implication that we draw from our analysis . . . is that certain biases in perception that have previously been thought of as amusing peccadillos at best and serious flaws in information processing at worst may actually be highly adaptive under many circumstances" (p. 205). Three "pervasive, enduring, and systematic" (p. 194) illusions about the self—*unrealistically positive self-evaluations*, *exaggerated perceptions of control or mastery*, and *unrealistic optimism*—were said to be the key elements that help bring about and maintain psychological well-being despite the inaccuracy of these self-evaluations.

This set of positively biased illusions is associated with and fosters better life functioning as well as positive psychological adjustment. This is counter not only to traditional theories of mental health,

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but also to intuitive beliefs about adjustment. Even if one accepts the idea that overly optimistic beliefs foster psychological adjustment, it is compelling to believe that this would be a false happiness, that those living in a dream world would be unable to function as effectively in the long run as would more realistic persons. We will argue . . . that such is not the case. (Taylor, Collins, Skokan, & Aspinwall, 1989, pp. 115–116)

The effective individual in the face of threat seems to be one who permits the development of illusions, nurtures those illusions, and is ultimately restored by those illusions. (Taylor, 1983, p. 1168)

The notion that cognitive illusions are good and, by implication, their absence is bad has by now found its way to the lay public. In the book *Positive Illusions: Creative Self-Deception and the Healthy Mind*, Taylor (1989) told her lay audience:

The discovery of depressive realism and the fact that depressed people do not hold or are unable to use the positive illusions that are so advantageous to normal people suggests that positive illusions—more particularly, their absence—may figure into the onset and progression of at least some forms of depression. (p. 219)

The purported benefits of cognitive illusions have also reached the air waves. A local radio station featured the following item: “Feeling blue? Doctors now say you can lie yourself into happiness. By creating self-deceptions, no matter how negative [your problem], it can be turned into a positive and you’ll have greater [happiness]” (D. Cartwright, personal communication, December 2, 1991).

This contrarian theme—that cognitive illusions promote mental health—was persuasively presented by Taylor and Brown (1988), who reviewed a substantial body of social psychological literature to support their argument. The empirical evidence brought forward derived primarily from studies characterized as demonstrating that depressed individuals and those with low self-esteem generally exhibit more accurate perceptions and evaluations than, in contrast, “normal”<sup>1</sup> individuals not characterized by depression or low self-esteem who engage in self-serving, error-based, “positive illusions.” Subsequently, their article has proven influential. In the 4 years since its publication, it has garnered well over 250 citations.

Perhaps the seemingly widespread acceptance of Taylor and Brown’s formulation suggests that a mental health “paradigm shift” is under way or imminent. A paradigm shift will occur, according to Kuhn (1962), when a field is confronted with a recurring series of anomalous empirical results that cannot be subsumed by extant theory or by the invocation of auxiliary hypotheses.

Because a paradigm shift is such a watershed occurrence, the logic of their argument and its evidential basis requires close and careful scrutiny before warranting broad acceptance. For us, their article elicited many questions and concerns. Our own reading of the referenced literature suggested to us that the empirical basis offered for the Taylor and Brown conclusion was surprisingly meager. Because their conceptual rationale for positive illusions as fostering mental health depends on the relevance of the research they invoked as supportive of this relation, we believed it necessary to closely evaluate the specific evidence offered in its support so as to better evaluate the cogency of their formulation. The present article provides our evaluation.

Our critique first describes the way Taylor and Brown approached the literature so as to develop support for their cognitive adaptation model. The logic of their approach and the evidence they provided with respect to their three key illusions are then evaluated. For each illusion, we also go on to survey research subsequent to their 1988 article to ascertain the extent to which later studies sustain the mental health implications drawn by Taylor and Brown. Several underlying, and debatable, assumptions of Taylor and Brown are then “unpacked” and discussed. We conclude that the conjecture of positive illusions as fostering mental health is unproven at best and at worst may be seriously wrong in many circumstances.

### How Taylor and Brown Adduced Support for Their Argument

The heart of the evidence that Taylor and Brown (1988) brought to bear in support of their argument that positive illusions underlie mental health is to be found in the section of their article titled “Positive Illusions and Social Cognition” (pp. 194–197). Within these several pages, they documented the existence of three positive illusions labeled as unrealistic positive views of the self, illusions of control, and unrealistic optimism. Conjointly, they also claimed an appreciable association between these positive cognitive illusions and mental health.<sup>2</sup>

For each of these illusions, the underlying logic Taylor and Brown used in presenting their argument involved three steps.

Step A: they noted certain interesting behaviors or tendencies that generally characterize “normal” experimental subjects (typically, subjects drawn from university subject pools).

Step B: they presented a logical argument that the behaviors observed to typify the group must be based on the presence of “positive illusions” in “most” individuals.

Step C: they argued for a connection between positive illusions and mental health by citing research in which the normative (i.e., typical, commonplace, or prevalent) illusion does not occur or occurs to a lesser degree in individuals who are depressed or who have low self-esteem. This last step in the Taylor and Brown argument involved an indirect logic; for example, the relative absence of self-serving illusions in people who exhibit dysphoric tendencies was taken as affirmative evidence that such “positive” illusions are present in individuals who are psychologically healthy (i.e., the absence of depression implies mental health).

<sup>1</sup> The term *normal* was unelaborated by Taylor and Brown but, by implication, connotes mental health.

<sup>2</sup> It should be noted that Taylor and Brown’s formulation does not appear to be limited to the frequently cited and controversial topic of depressive realism wherein the cognitive processing of depressed individuals is purportedly more realistic and accurate than the cognitive processing of non-depressed individuals (e.g., Alloy & Abramson, 1979). Rather, their formulation implies a more general and broad relation between positive illusions and mental health in which the relative absence of mental health may be characterized by a variety of psychological maladies and syndromes other than, but also including, depression.

### *The Taylor and Brown Evidence for Unrealistic Positive Views of the Self*

In Step A, a number of studies were cited indicating that "the perception of self that most individuals hold is heavily weighted toward the positive end of the scale" (Taylor & Brown, 1988, p. 195); that is, most people tend to like themselves.

In Step B, this normative tendency was claimed to be generally illusory because, when the self-descriptions of individuals are compared with the descriptions these individuals make of a generalized average person, most self-descriptions are more favorable than the descriptions made of the average person (e.g., Alicke, 1985; Brown, 1986). Taylor and Brown (1988) then argued that, because it is logically impossible for most people to be better off than most others, "these highly skewed, positive views of the self can be regarded as evidence for their unrealistic and illusory nature" (p. 195). Another source of evidence brought forward by Taylor and Brown for the illusory nature of positive self-perceptions came from the study by Lewinsohn, Mischel, Chaplin, and Barton (1980) in which self-ratings of subjects were found to be generally more favorable than the ratings made by undergraduate observers of the subjects. The Lewinsohn et al. study led Taylor and Brown to claim that "most individuals see themselves as better than others see them" (pp. 195-196).

In Step C, Taylor and Brown (1988) pointed to "suggestive evidence" (p. 196) that individuals who are low in self-esteem or depressed, or both, are "more balanced in their self-perceptions" (p. 196); that is, unhappy people have a greater tendency to express negative self-relevant information and a lesser tendency to express positive self-relevant information than do happy individuals. This evidence derives from a number of studies wherein people with low self-esteem or who are moderately depressed made self-judgments that were more congruent both with those they made about generalized others and with ratings by observers of them (Brown, 1986; Campbell & Fairey, 1985; Kuiper, 1978; Kuiper & Derry, 1982; Kuiper & MacDonald, 1982; Lewinsohn et al., 1980; Rizley, 1978). Taylor and Brown concluded from these studies that "the individual who experiences subjective distress . . . is more likely to process self-relevant information in a relatively unbiased and balanced fashion," a finding that is "inconsistent with the notion that realistic and even-handed perceptions of self are characteristic of mental health" (p. 196).

### *The Taylor and Brown Evidence for Illusions of Control*

In Step A, it was noted that various psychological theories agree that a sense of personal control in one's world derives from and contributes toward one's self-esteem. Many studies were cited demonstrating that most individuals have a sense of personal control about environmental occurrences and the world they live in.

In Step B, Taylor and Brown noted, however, that a number of studies suggest that people often believe they have personal control in circumstances actually determined by chance. For example, people sometimes feel more control over a gambling outcome if they throw the dice rather than if someone throws

the dice for them (Langer, 1975; Langer & Roth, 1975). Furthermore, Taylor and Brown cited Miller and Ross (1975) as finding that people often overestimate the degree to which they affect desired outcomes. From these several findings indicating that individuals often overestimate the degree to which they were instrumental in bringing about a desired outcome, Taylor and Brown concluded that illusions of control frequently characterize normal individuals.

In Step C, Taylor and Brown cited several studies in which mildly and severely depressed individuals or individuals in whom a depressed mood has been induced manifest lesser belief that they have personal control over their task performance in the experimental situations in which they find themselves. The results of these studies, as interpreted by Taylor and Brown, suggest that dysphoric individuals provide more accurate estimates of their degree of personal control than nondysphoric individuals. Although they acknowledged two studies that do not support this relation (Abramson, Alloy, & Rosoff, 1981; Benassi & Mahler, 1985), Taylor and Brown (1988) concluded that "realistic perceptions of personal control thus appear to be more characteristic of individuals in a depressed affective state than individuals in a nondepressed affective state" (p. 196).

### *The Taylor and Brown Evidence for Unrealistic Optimism*

In Step A, a number of survey sample studies were mentioned in which most individuals reported that they expected their personal futures to be better than their present or past circumstances.

In Step B, this widespread optimism was said to be unrealistic by Taylor and Brown (1988) because various studies indicate that, although individuals may hold a positive expectation of the future for all people, their expectations regarding their personal futures are more optimistic than those they anticipate for people in general. "Because not everyone's future can be rosier than their peers', the extreme optimism that individuals display appears to be illusory" (p. 197).

In Step C, Taylor and Brown (1988) cited several studies (Alloy & Ahrens, 1987; Brown, 1985; Pietromonaco & Markus, 1985; Pyszczynski, Holt, & Greenberg, 1987) wherein, relative to normal individuals, dysphoric individuals

fail to exhibit the self-enhancing tendency to see positive events as more likely for self and negative events as less likely for self. . . . Thus, . . . it appears to be individuals who are high, not low, in subjective well-being who evince more biased perceptions of the future. (p. 197).

In summary, Taylor and Brown brought forward certain characteristics of everyday human information processing that appear to involve inaccurate appraisals of self, of personal control, and of the future. They termed these ways of perceiving *illusions*. Taylor and Brown then cited studies they interpreted as showing that dysphoric individuals do not exhibit these cognitive illusions to the same degree as better-adjusted individuals. "Together, these findings appear inconsistent with the notion that accurate self-knowledge is the hallmark of mental health" (Taylor & Brown, 1988, p. 197). In the section that follows, we

attempt to evaluate the empirical evidence on which Taylor and Brown based their formulation.

### Our Evaluation of the Evidence Advanced by Taylor and Brown

In the evaluation that follows, it is apparent that the preponderance of evidence presented by Taylor and Brown in their review refers only to Steps A and B (just discussed), relating to the existence of certain typical behaviors that, by certain criteria, may be called "illusional." Many of the studies cited provide evidence relevant to Step A. But such citations are only evidence for the typicality of these behaviors. A logical argument, often but not necessarily a compelling one, was then applied to the evidence for Step A to derive the Step B conclusion that these normative behaviors represent positive cognitive illusions and therefore that positive illusions characterize most normal people (i.e., psychologically healthy people). The crucial, counter-intuitive, attention-attracting step in their reasoning, however, is Step C, which asserts that the regular use of reality-distorting positive cognitive illusions is related to enhanced levels of mental health. It is essential that the reader understand that the typicality of a behavior and the further demonstration that such commonplace behavior represents a positive illusion carries no necessary implication, whatsoever, of a relation between the presence of positive illusions and the presence of mental health. This last relation is the critical one to substantiate, and we focus on the evidence in the Taylor and Brown article supportive of Step C.

It is possible to question the prevalence of some of the behaviors referenced by Taylor and Brown under Step A. It is also possible to contest some of their reasoning in Step B that certain typical behaviors represent positive illusions. We do so later when we discuss some presuppositions underlying these steps. First and foremost, however, the pivotal argument for Taylor and Brown rests on the empirical relation between positive illusions and mental health; therefore, for each key illusion, we focus our attention on the evidence they provided for Step C.

### *Unrealistically Positive Views of the Self*

Taylor and Brown referenced 37 books, review articles, and empirical reports pertaining to typical self-relevant behaviors (Step A). Thirty-five of these references are also relevant to Step B in that they explicitly or by implication discuss certain facets of the self as incommensurate with reality and, hence, illusory (we found no implications for reality distortion in the articles by Harackiewicz, Sansone, & Manderlink, 1985, and Kuiper, Olinger, MacDonald, & Shaw, 1985). With regard to the crucial Step C, however, only 10 supportive references were brought forward by Taylor and Brown. We examine these articles, one by one, for the extent of support they provide for the Taylor and Brown proposition.

Taylor and Brown listed three review articles as indicating that "individuals who are low in self-esteem, moderately depressed, or both are *more balanced* [italics added] in self-perceptions" (1988, p. 196). (The term *balance* implies an assumption we query shortly.) In limiting their focus to the "balance"

in self-perceptions, Taylor and Brown appear to have neglected conclusions reached in all three review articles that are unhelpful to their essential thesis, the association between illusory self-views and mental health. Thus, the review article by Coyne and Gotlib (1983) on the role of cognition in depression, characterized by Taylor and Brown as supportive of their argument, at best provides equivocal backing. Specifically, Coyne and Gotlib stated:

Depressed persons are often more negative in their self-evaluations, but relative to evaluations of them made by others, they may be no more discrepant than are nondepressed persons (e.g., Strack & Coyne, 1983), less discrepant (e.g., Lewinsohn, Mischel, Chaplin, & Barton, 1980), and *even self-enhancing* (e.g., Arkowitz, Holliday, & Hunter, 1982). (1983, p. 495)

Moreover, Coyne and Gotlib suggested that the laboratory experiments in which these cognitive differences were observed may reveal nothing more than fleeting differences between depressed and nondepressed subjects because "extralaboratory experiences and self-presentational strategies remain viable alternative explanations for [these] results" (1983, p. 495).

A second review article cited by Taylor and Brown, an article on negative affectivity (akin to dysphoria) by Watson and Clark (1984), also provides equivocal support for a relation between unrealistically positive views of self and mental health. Watson and Clark suggested that individuals high in negative affectivity "exaggerate failure experiences and accept negative information about themselves," whereas individuals low in negative affectivity seem to exhibit "a healthy defensiveness that helps them to maintain a pleasant mood" (p. 482). They noted, however, that "there are . . . very little data to indicate which group has the more realistic outlook, and those which do exist are inconsistent" (p. 482).

The third review article, one by Ruehlman, West, and Pashow (1985) on depression and evaluative schemata, perhaps provides some support for the Taylor and Brown argument in suggesting that nondepressed people exhibit schematic positivity and mildly depressed people exhibit unbiased evaluative responses. However, the authors also observed that severely depressed individuals exhibit schematic negativity. Like Coyne and Gotlib (1983), Ruehlman et al. alerted the reader to the possibility that these laboratory-based results may suffer from limited generalizability to real-life ecosystems.

We conclude that the three review articles invoked by Taylor and Brown provide little support for their strong claim that unrealistically positive views of self are associated with mental health. Do the seven empirical studies cited fare any better?

As evidence for illusory self-perceptions, five studies were cited in which depressed individuals, but not nondepressed individuals, (a) recalled with equal frequency both positive and negative self-descriptive trait terms (Kuiper & Derry, 1982; Kuiper & MacDonald, 1982) or (b) acknowledged responsibility for both success and failure outcomes (Campbell & Fairey, 1985; Kuiper, 1978; Rizley, 1978). In their reasoning from these results, Taylor and Brown made the strong assumption that a self-portrayal becomes more accurate to the extent that a person is "evenhanded" or "balanced." Although Taylor and Brown did not define these terms, operationally they appear to mean that

a subject ascribes to self a relatively equal number of positive and negative characteristics. This seems to us an odd criterion for accuracy of self-knowledge. To many, the terms *evenhanded* and *balanced* have appreciable connotative value; surely, it is better to be evenhanded and well balanced than otherwise. But the ratio of positive to negative characteristics might vary from person to person depending on individual levels of psychological adjustment and the nature of the measuring instrument. To determine the accuracy of a person's self-description requires much more than establishing the extent to which the person's ratio of positive and negative personal characteristics approaches one to one. Rather, it requires a comparison of self-descriptions with various kinds of valid external criteria of mental health (Colvin & Funder, 1991; Cronbach & Meehl, 1955). Thus, although the studies cited by Taylor and Brown reveal that depressed individuals, in comparison with nondepressed individuals, are more evenhanded or balanced in ascribing positive and negative qualities to themselves, these findings are silent about which group is more "realistic" in self-perceptions, the pivotal question for which Taylor and Brown sought an answer.

With regard to the ratio of positive to negative terms used by an individual, we suggest that this ratio will depend primarily on the individual's sense of self-esteem. There is a good bit of evidence indicating that well-adjusted individuals tend to have higher self-esteem than poorly adjusted, dysphoric individuals (e.g., Gjerde, Block, & Block, 1988; Rosenberg, 1985). Thus, it would seem that both well-adjusted and poorly adjusted individuals may well be portraying themselves appropriately by using proportions of positive and negative descriptors that approximately befit their current psychological state.

Another criterion for realistic self-perception used by Taylor and Brown was applied to a sixth article that investigated how descriptions of self and other are related to self-esteem (Brown, 1986). They concluded that individuals low in self-esteem "display greater congruence between self-evaluations and evaluations [they provide] of others" (Taylor & Brown, 1988, p. 196). Taylor and Brown reasoned that people who describe themselves in ways similar to how they describe an unknown, generalized other should be thought of as providing more veridical descriptions than people whose self-descriptions are relatively different from their descriptions of unknown, generalized others.

This assumption is troublesome for several reasons. First, it should be noted that, on average, subjects in the Brown experiment, regardless of level of self-esteem, offered appreciably positive evaluations of the unknown, generalized other. Second, the subjects Brown used were undergraduates from an elite university and could be expected, realistically, to themselves be higher—and to know they were higher—than a vaguely identifiable, generalized other on the traits on which they were asked to rate themselves and others (e.g., bright, responsible, interesting, friendly, loyal, and humorous). Consequently, the Brown findings may only be the result of the statistically appropriate reasoning these intelligent undergraduates used in characterizing (but not belittling!) an average, unknown other person. It can be expected that bright, responsible, interesting, friendly, loyal, humorous individuals will possess higher self-esteem than

individuals who are average with respect to these qualities. Therefore, a discrepancy between the self-ratings of above-average high-self-esteem individuals and their ratings of the average generalized other is to be expected.<sup>3</sup> Left entirely unanswered by this kind of inquiry is the question of the extent to which an individual's self-esteem is warranted, as indexed by external and objective evaluations of the considerations on which an individual bases his or her sense of self-worth.

The Lewinsohn et al. (1980) study, the seventh empirical article cited by Taylor and Brown, also warrants detailed consideration because it is frequently mentioned as support for the greater "realism" of depressives. Subjects described themselves with regard to 17 desirable attributes and four undesirable attributes. They were also rated on these attributes by undergraduate observers. Three subject groups were studied: (a) depressed subjects, recruited by publicizing the availability of a depression treatment program; (b) "psychiatric control" subjects, individuals identified as having psychiatric problems other than depression; and (c) normal controls, individuals identified as not having psychiatric problems. The psychiatric controls and normal controls were recruited by advertising the availability of payments for participation in a psychological research project. The emphasized finding was that, with respect to the "desirable" ratings averaged to index social competence, the arithmetic discrepancy between the self-averages of depressed subjects and the averaged ratings of them made by observers was less than the corresponding discrepancies for the psychiatric control subjects and for the normal subjects. Taylor and Brown (and Lewinsohn et al.) interpreted the smaller discrepancy between the self-ratings and observer ratings of the depressed group as indicating lesser bias, better balance, and more realism in the self-perceptions of depressives, whereas "the controls were engaged in self-enhancing distortions . . . characterized with a halo or glow" (Lewinsohn et al., 1980, pp. 210–211).

We suggest that the Lewinsohn et al. (1980) study, given its design and specific results, cannot support the interpretation offered. The emphasized, attention-attracting result was that the discrepancy between the self-ratings and observer ratings was smaller for the depressed group than for the other psychiatrically disturbed group and for the normal group. However, a discrepancy may exist for two reasons (or a conjunction of the two reasons): (a) A self-rating is too high or (b) an observer rating is too low. For Lewinsohn et al., "social reality has been defined . . . in terms of these observer ratings" (1980, p. 210). But were they justified in choosing to treat the observer ratings as providing an absolute and sufficient standard against which to evaluate the self-ratings of their subjects? We think not, and for several reasons.

<sup>3</sup> As an analogy, consider individuals who are asked to report their own height and to judge the height of "a generalized other." The generalized other would be ascribed an average height whereupon self-described "tall" individuals would be more discrepant from this average than individuals self-described as being of a height close to average. The magnitude of the discrepancy between self-described height and the estimate of average height of a population is of little interest. What is important is the relation between self-reported height and objectively measured height.

First, the observers were selected undergraduates who, unfortunately, had been informed they would be observing the interpersonal behavior of depressed individuals; furthermore, they were not told that about two thirds of the individuals whom they would observe were not depressed. This orientation, as Langer and Abelson have demonstrated (1974), can inadvertently sensitize observers to commit the frequent error of naive clinicians of tending to see individuals less positively than is warranted (see also Gotlib & Meltzer, 1987, Kowalik & Gotlib, 1987, and Campbell & Fehr, 1990, regarding the severity of evaluations made by observers). In accord with this conjecture, the undergraduate observers, on average, rated members of all three groups as below the midpoint on the dimension Lewinsohn et al. (1980) labeled as "social competence," perhaps demonstrating what may be a generalized harshness of evaluation toward the subjects. On average, members of all three groups rated themselves higher than did the undergraduate observers. However, because the dysphoric subjects viewed themselves less favorably than did the other two groups (it will be remembered that dysphoric individuals have lower self-esteem), the emphasized result—greater realism of the depressives—was obtained but can be alternatively interpreted.

Second, the observational basis for the ratings made by the undergraduate observers was a group interaction involving individuals from each of the three subject groups (i.e., depressed, psychiatric control, and normal control) wherein 5 or 6 subjects who had never before met successively gave 3-min monologues, after which the group continued conversing for another 20 min. We suggest that this observational context and its duration provide a small basis for the 21 ratings then made by the observers on each of the 5 or 6 subjects. Indeed, the interrater agreement of the undergraduate raters with respect to the four undesirable attributes (anxious, unhappy, sensitive to criticism, and pessimistic) was "unacceptably low" (Lewinsohn et al., 1980, p. 206), and, therefore, consideration of these undesirable attributes was omitted from the published report. For the 17 desirable attributes (e.g., reasonable, self-assured, has a positive outlook on life, open, and self-disclosing), the correlation between the undergraduate observers averaged about .49, not a fully reassuring figure. It is unclear why observers did not demonstrate acceptable agreement with respect to an undesirable attribute such as pessimism but did manifest acceptable agreement with respect to a desirable attribute such as has a positive outlook on life, seemingly a reflection of pessimism. Only the analyses of the desirable attributes were presented in the published report.

Third, the Lewinsohn et al. (1980) results are as much evidence against the Taylor and Brown thesis as evidence for that view. Anomalous, subjects with psychiatric disorders other than depression also exhibited "illusory" self-views. Conceptually, it is difficult to claim that positive illusions about the self are related to mental health if people with psychiatric disorders other than depression also display the same positive illusions. We know of no rationale for lumping psychiatrically disturbed people who are not depressed into the same category as normal, ostensibly well-functioning individuals. Such "lumping" would only be appropriate if the asserted association between positive illusions and mental health were to be importantly modified

and limited to refer to an association between positive illusions and, specifically, the absence of depression.

Fourth, the dramatic finding that depressed subjects were more realistic than nondepressed individuals was of small effect size (less than 4% of the variance was attributable to the group differences). Finally, two thirds of the depressed subjects were women, and only half of the normal subjects were women. Thus, this unevaluated difference in gender representation may well have influenced the findings observed because the basis and expression of depression in women differs from the basis and expression of depression in men (Block, Gjerde, & Block, 1991; Gjerde et al., 1988). For the several reasons just mentioned, we suggest that this landmark study does not provide compelling evidence for the Taylor and Brown formulation.<sup>4</sup> Coyne and Gotlib (1983) also have remarked that the Lewinsohn et al. (1980) findings have been difficult to replicate.

In summary, the three review articles and seven empirical studies impress us as not providing sufficient solid evidence to support Taylor and Brown's conclusion that unrealistically positive views about the self are related to mental health. At best, the review articles they cited provide equivocal support, whereas the empirical studies they counted on failed to show the necessary association between positive illusions and mental health.

It is relevant to consider whether, despite the uncertain evidence in 1988 for the Taylor and Brown conclusion, the later literature lends support to their argument of an association between exaggerated self-evaluations and mental health, what we call Step C.<sup>5</sup> Three additional reviews of the depressive realism hypothesis have appeared since, but we judge them as complicating of rather than helpful to the Taylor and Brown position. A review by Alloy and Abramson (1988), appearing at about the same time as the Taylor and Brown article, emphasized the findings issued by laboratory studies and concluded that "the perceptions and judgments of depressives are more accurate or less biased . . . much of the time [but] this is not always the case" (p. 243). A review by Dobson and Franche (1989) expressed concerns about the ecological validity of much laboratory research on depressive realism and the frequent absence of

<sup>4</sup> Another possible limitation of the Lewinsohn et al. (1980) study was pointed out by a reviewer of this article, who suggested that "having people give 3 minute monologues to strangers could cause anyone, depressed or not, to be anxious and to appear to be less well-adjusted than they would under ordinary circumstances. Thus, judgments based on viewing such behavior may have little to do with what these people are really like most of the time."

<sup>5</sup> In our survey of the subsequent relevant literature, we identified all of the references to the Taylor and Brown (1988) formulation mentioned in the Social Science Citation Index through March 1993. We collected well over 250 citations. Doubtless, we missed certain relevant references, but it seems likely that our scan of the research literature was reasonably inclusive. We note that all but a few of the later references have not been evidential—one way or the other—with respect to Step C, the issue of whether overly positive self-evaluations, exaggerated perceptions of control or mastery, and unrealistic optimism go along with psychological health. Rather, many references only mention the Taylor and Brown (1988) article. In our recounting of the subsequent literature, we focus on references pertinent to Step C.

objective criteria of reality. In their evaluation, they found some evidence for depressive realism, "although the strength of that finding diminishes as the ecological validity of studies increases" (p. 419). A literature review by Ackermann and DeRubeis (1991) concluded that "although many studies have generated evidence consistent with the depressive realism hypothesis, almost as many have provided evidence inconsistent with this view. . . . The results appear to vary as a function of the type of task used" (p. 565). These authors suggested that the Alloy and Abramson (1988) conclusion that depressive realism occurs much of the time arises because Alloy and Abramson did not use objective criteria for realism.

Beyond these reviews, a number of researchers have reported results challenging of Taylor and Brown's conclusions. The essential finding of the Lewinsohn et al. (1980) study has been contradicted by more recent studies finding that depressives tend to be overly negative in their self-evaluations (Bargh & Tota, 1988; Pietromonaco & Markus, 1985; Pyszczynski et al., 1987).

Campbell and Fehr (1990) compared individuals high in self-esteem and individuals low in self-esteem (self-esteem being strongly related, negatively, to dysphoria) and reported complicated results leading them to conclude that "there is no support for the notion of depressive realism in assessing conveyed impressions" (p. 122). The comparative realism of dysphoric versus relatively comfortable individuals depended on the specific conditions or context of the research situation, a conclusion also reached in empirical studies by Dunning and Story (1991); Dykman, Abramson, Alloy, and Hartlage (1989); and Pietromonaco, Rook, and Lewis (1992).

Colvin (1993a, 1993b) found that agreement between subjects and observers (e.g., friends) is positively related to psychological adjustment, suggesting that a tendency for self-regard is not simply illusional but, rather, goes along with external evaluations of coping competence in the real world. John and Robins (1994) found that an individual's inflated view of his or her contribution to a group discussion, measured by the discrepancy between the subject's self-evaluation and evaluations of the subject by multiple peers and trained psychological assessors, is related to various measures of narcissism rather than to psychological adjustment. Conversely, Compton (1992) identified a group of subjects manifesting, conjointly, high self-esteem and an absence of positive illusions and found such individuals to be not depressed, not maladjusted, not neurotic, not personality disordered, and not psychotic relative to individuals of low self-esteem. When compared with individuals manifesting high self-esteem and also positive illusions, the self-regarding, nonillusional individuals were higher on self-criticism and personality integration and lower on psychoticism (see also Block & Thomas, 1955). These latter two studies suggest that exaggerated self-esteem does not necessarily correlate with or foster psychological adjustment. Furthermore, they suggest that realistic positive self-esteem can exist and that such self-esteem might serve as an indicator of a multifaceted psychological adjustment.

Swann's work on self-verification and self-enhancement is also pertinent (e.g., Swann, Pelham, & Krull, 1989). His research indicates that individuals often may seek and develop

subjectively accurate (even if not positive) information and views about themselves. Such information seeking, his analyses indicate, is not due to a poorly developed global self-enhancement motive, as Taylor and Brown have suggested, but to the individual's specifically oriented concerns, values, and aspirations regarding self.

Epstein, in his research program (e.g., 1992), has found that poor "constructive thinkers" (who are maladaptive) are unrealistic and biased toward making overly negative inferences about themselves. Referring to Taylor and Brown, he remarked: "In many ambiguous real-life situations, . . . moderate self-overestimation is intrinsically self-rewarding and produces no unfortunate consequences. . . . However, this does not necessarily mean that reality orientation is an unimportant component of mental health" (Epstein, 1992, p. 832).

We also note that a number of analog studies viewed as supportive of the Taylor and Brown formulation have appeared. The experimental manipulations in these studies involved (a) a dot-estimation task wherein college students were alleged, arbitrarily, to have underestimated or overestimated the number of dots presented (Brown, Collins, & Schmidt, 1988); (b) a remote associates test wherein college students were provided false feedback indicating that they had succeeded or failed in a test of their intellectual ability (Brown & Gallagher, 1992; Brown & Smart, 1991); and (c) a mood-induction exercise in which college students contemplated, for 15 s, index cards containing phrases such as "I feel cheerful and lively" (Brown & Mankowski, 1993). After these manipulations, subjects provided self-ratings or group ratings on a number of evaluative dimensions. The general conclusion from these studies is that people high in self-esteem, to maintain their level of self-worth, describe themselves in an unrealistically positive manner when confronted with negative self-relevant information, whereas individuals low in self-esteem tend to be more realistic in their personal evaluations.

Overall, we suggest that the empirical capriciousness of the relations observed indicates that the implicative interpretation advanced by Taylor and Brown regarding enhanced self-evaluations and mental health is not now warranted. The evidence simply is not yet in.

### *Illusion of Control*

Taylor and Brown cited 20 books and articles referring to the common tendency of individuals to believe and perceive that they have control and influence over events in their immediate environment (Step A). Fourteen of these references are relevant to Step B in that they included discussions or presented empirical evidence of typical perceptions of control that are, in fact, unrealistic.<sup>6</sup>

Eight articles were presented as achieving Step C by demon-

<sup>6</sup> The six references excluded from Step B were general theoretical writings about adaptive behavior that included some discussion about the role of perceived control and well-being (i.e., Bandura, 1977; deCharms, 1968; Fenichel, 1945; Heider, 1958; Hendrick, 1942; White, 1959). Their focus was, for the most part, on normal, nonillusory perceptions of control.



strating an association between the extent to which individuals have illusions of control and their level of mental health. However, two of these eight articles provide evidence that does not support the Taylor and Brown argument (Abramson et al., 1981; Benassi & Mahler, 1985), and a third article is only tangentially related to the concept of illusion of control (i.e., Shrauger & Terbovic, 1976).<sup>7</sup> The remaining five articles provide the empirical foundation for Taylor and Brown's claim that the illusion of control is positively related to mental health and thus represent the core articles requiring evaluation.

The evidence relating the illusion of control to mental health primarily comes from laboratory research conducted by Abramson and Alloy (Abramson & Alloy, 1981; Alloy, Abramson, & Viscusi, 1981; Greenberg, Vazquez, & Alloy, 1988<sup>8</sup>) and by Golin and Terrell (Golin, Terrell, & Johnson, 1977; Golin, Terrell, Weitz, & Drost, 1979). Abramson, Alloy, and colleagues used a partial reinforcement task wherein subjects pushed or did not push a button after which, on a random basis, a light either turned on or did not turn on. After many trials, subjects were asked to estimate the degree of control their responses had over the outcome of the light coming on. Golin, Terrell, and colleagues used a dice-playing procedure and assigned subjects to either a "player throw" or "croupier throw" condition. Before the subjects were permitted to develop experience with the actual outcomes of dice throws, they were asked to rate, on an 11-point scale, their expectancy of success or luck in winning the dice game. The subject or the croupier (experimenter) then threw the dice, and the outcome was observed. Ten trials were administered, with the subject each time announcing an expectation of success for the next trial.

Taylor and Brown presented the results from these five studies as evidence that depressed individuals make accurate (i.e., low) estimates of their degree of personal control, whereas nondepressed individuals offer inflated (i.e., higher) estimates of their degree of personal control. But three findings from these studies suggest that the link between illusions of control and mental health is tenuous. First, the difference between the depressed and nondepressed groups in regard to the illusion of personal control existed only at the outset of the experiment, before subjects developed experience and context; when subjects had some, even minimal, experience in either experimental procedure, the difference vanished (Abramson & Alloy, 1981, p. 437; Golin et al., 1979, p. 456). Second, the estimates of control by nondepressed subjects appeared to become more accurate as the degree of contingency increased between response and outcome (Abramson et al., 1981; Alloy & Abramson, 1979). It seems plausible and perhaps even likely, reasoning from these two observations, that when the illusion of control is seemingly found for nondepressed subjects, the illusion stems from the application by these generally effective subjects of their typical expectations to an unfamiliar and novel situation. Then, when either the situation becomes familiar (i.e., the contingency between response and outcome is learned) or the relation between response and outcome is high, an inaccurate estimate of control will not be observed (Abramson & Alloy, 1981; Alloy & Tabachnik, 1984). Third, and perhaps most vitiating, these several laboratory findings may well lack robustness. Slight experimental variations can reverse the illusion of control effect such that

depressed people overestimate their control of the situation and nondepressed people provide accurate estimates of control (Benassi & Mahler, 1985).

In summary, Taylor and Brown (1988) stated that the illusion of control is "pervasive, enduring, and systematic" (p. 194). In contrast, our evaluation of the evidence they cited linking the illusion of control with mental health suggests that the relation is better characterized as limited, transient, and haphazard.

Although the evidence in 1988 for the Taylor and Brown conclusion was equivocal, it is pertinent in the present context to evaluate whether the later (or earlier uncited) literature strengthens their claim of an association between the illusion of control and mental health, what we call Step C.

A study by Affleck, Tennen, Pfeiffer, and Fifeld (1987), which appeared too late to be included in the Taylor and Brown review, suggests that it may be maladaptive for individuals to believe they have control over an indisputably serious chronic disease. Burish et al. (1984) also suggested that an external, objectifying orientation rather than an internal, personal orientation may be advantageous in dealing with a chronic disease to avoid the self-blame likely to ensue when personal control fails to prevent the subsequent adverse downward course of the illness. Jamieson, Wellisch, and Pasnau (1978) made a similar point. A thoughtful book chapter by Reid (1984) provides a general statement of the relation between a sense of control and the realities of the situation in which an individual is immersed: A sense of control when the situation is potentially controllable is adaptively positive, and a sense of control when control is seriously unrealistic is maladaptive. A study by Christensen, Turner, Smith, Holman, and Gregory (1991) further "underscore[s] the adaptive value of a congruence between control beliefs and objective circumstances in chronic illness" (p. 419). A study of rheumatoid arthritis patients (Schiaffino & Revenson, 1992) also found that psychological adjustment was related to beliefs about the personal controllability of future outcomes in interactive ways not expressible as a simple relation.

Taylor, Helgeson, Reed, and Skokan (1991) reported three studies of self-generated feelings of control and adjustment to physical illness. Their complicated

findings are consistent with the suggestions of several previous researchers, such as Affleck et al. (1987), Reid (1984), and Burish et al. (1984), that perceptions of control may be adaptive only when there is, in fact, something that can be controlled. When the situation gets beyond a point where control is likely to have an impact on the course or consequences of the aversive events, believing such control exists may be maladaptive. *These conclusions suggest some qualifications to the idea that an illusion of control may be adaptive [italics added]* (Taylor, 1983). Previously, the *experimental [italics added]* evidence suggested that, even when people falsely believe there is a controlling step that they can undertake to influence or terminate an aversive event, these perceptions of control reduce

<sup>7</sup> The Shrauger and Terbovic (1976) study investigated the role of self-esteem in perceptions of *performance*. Although it is likely that perceived ability is generally positively related to perceived control, there are occasions when the two will be independent.

<sup>8</sup> Taylor and Brown referred to an in press book chapter by M. S. Greenberg and L. B. Alloy. In the published version, M. S. Greenberg, C. V. Vazquez, and L. B. Alloy are the authors.



distress. Similarly, Taylor (1983) had suggested, in the context of adjustment to chronic and terminal illness, that perceptions of control appear to be adaptive even when in clear contradiction to the facts. (Taylor et al., 1991, p. 106)

These recent remarks suggest that Taylor has importantly modified her cognitive adaptation model. However, and surprisingly, the abstract of this article concluded that self-generated "beliefs in personal control generally appear to be adaptive . . . and . . . appear to reduce anxiety and depression" (Taylor et al., 1991, p. 91).

In a field study of cardiac patients, Helgeson (1992), a Taylor associate, also recently emphasized that "perceived control is not always more beneficial when the threat is severe—only in the instance when the threat is controllable" (p. 664). It appears, then, that perceptions of control are beneficial when they are indeed reality based. When threat is severe but not controllable, an individual who manifests an illusion of control may well be exhibiting maladaptive behavior.

Of special interest are two studies on illusions of control and maternal efficacy (Donovan & Leavitt, 1989; Donovan, Leavitt, & Walsh, 1990). In a variation on the Alloy and Abramson (1979) contingency task, mothers differing in their degree of illusion of control in a simulated child-care task were identified. Mothers who greatly overestimated their degree of control had a depression-prone attributional style, were relatively dysphoric, and reported that the father did not participate sufficiently in child care. They also responded physiologically in aversive ways to impending cries, and their infants tended to be insecurely attached when assessed 11 months later in the "strange situation" (Ainsworth & Wittig, 1969). Donovan et al. concluded: "Our data suggest that high illusion of control may be a maladaptive response to the performance demands of child care" (1990, p. 1638).

From a sociological perspective, Mirowsky and Ross (1990) sought to evaluate how depression is related to a sense of control over good and over bad outcomes and found that an illusion of control that protects self-esteem is not associated with decreased depression. They concluded that such illusions cannot substitute for a valid sense of control based on "real resources and opportunities. Real control apparently shapes perceived control, which is associated with decreased depression in part because it allows people to avoid and solve problems actively and effectively" (p. 84).

A laboratory study by Dykstra and Dollinger (1990) subjected college students to a gambling task wherein estimates of "skill" (i.e., illusion of control) versus "entirely luck" (i.e., the absence of illusion) in influencing the outcome were solicited. "Contrary to findings in past research, mildly depressed subjects showed an illusion of control and did so to a greater extent than did nondepressed subjects" (p. 235).

We found three studies reported as support for the link between illusion of control and mental health. A laboratory study by Tang and Critelli (1990) used the Alloy and Abramson (1979) contingency-learning task wherein the subjects' goal is to turn a light on and to estimate the degree of control that their responses have over light onset. In fact, they had no influence on the light. Nondepressed college students displayed a greater illusion of control than mildly depressed college students.

Alloy and Clements (1992) administered the Beck Depression Scale (BDI; Beck, 1967), a life events questionnaire (LEQ), and mood scales to college students. These subjects subsequently also experienced a contingency learning task. In this task, they rated themselves on whether their actions influenced the appearance or nonappearance of a stimulus that, in fact, was being randomly presented. These ratings operationalized the variable, illusion of control. A month later, the subjects were again administered the BDI and LEQ. The two BDI measures each correlated  $-.09$  with the illusion of control measure. The results involved complicated interactions whose details cannot be recounted here. It was acknowledged that the findings were interpretively limited, logically, because certain measures were concurrent rather than placed within a prospective research design (p. 243).

A study by Glass, McKnight, and Valdimarsdottir (1993) of burnout in nurses is difficult to evaluate. Non-burned-out nurses overestimated their degree of control of their job situations, whereas burned-out nurses were more accurate in assessing their degree of job control and were also more depressed. However, the authors concluded, after conducting a series of partial correlations, that "despite evidence for a 'depressive realism effect,' greater perceptual accuracy was not attributable to depression among the more burned-out nurses" (p. 147).

Overall, then, it appears that subsequent research on the relation between illusions of control and mental health has gone far beyond and appreciably complicated the Taylor and Brown formulation. Conceptual and clinical considerations also have been brought forward that further limit the possibility of claiming, as a generalization, that the illusion of control is positively associated with psychological adjustment. Langer and Brown (1975) called attention to life situations of apparent helplessness wherein, from the perspective of the immersed, acting individual rather than a removed and judgmental observer, a sense of perceived control is reality based and adaptationally effective rather than illusory. They expressed doubt that an illusion of control is beneficial. Doan and Gray (1992) offered a thoughtful, clinically based discussion of the experiential dilemma of the cancer patient. Acknowledging the positive motivational effects that illusions of control may have, they also pointed out the negative adaptational effects of such illusions—rigid suppression and denial of appropriate emotion, avoidance of practical reality-based thought and action, guilt consequent on the inevitable failure of efforts to "control," and sudden breakthroughs of massive and unmanageable personal distress—in desperate circumstances. They

deplore the recent trend in social psychology to over-simplify the dual problems of self-knowledge and knowledge of the world, as well as the relationship of such knowledge to human well-being and adjustment. By pitting illusion *against* reality, the tendency has been to reduce discussion of these complex and important problems to nonsequiter: "Does wiser mean sadder?" "Is ignorance bliss?" No discussion of the issues at this level can do justice to the plight of the person with cancer, nor, for that matter, to any other significant life circumstance. (Doan & Gray, 1992, p. 264)

### *Unrealistic Optimism*

Taylor and Brown referred to 25 review and empirical studies in this section, 24 of which pertained to the frequently studied

normative phenomenon of optimism (Step A). Twenty of these citations are relevant to Step B in that the optimism typically found in individuals can be demonstrated or argued to be unrealistic in nature.<sup>9</sup> Five of the cited studies were presented as establishing a link between unrealistic optimism and mental health and, therefore, pertain to Step C. Of these 5 studies, the Brown (1985) experiment remains unpublished and thus cannot be evaluated. The Ruehlman et al. (1985) review article, previously discussed, provides equivocal support for the Taylor and Brown thesis. Three empirical articles remain as providing support for the association between unrealistic optimism and mental health (Alloy & Ahrens, 1987; Pietromonaco & Markus, 1985; Pyszczynski et al., 1987).

All three of these studies compared judgments about future positive and negative events made by depressed and by nondepressed subjects regarding themselves and regarding generalized others (Alloy & Ahrens, 1987; Pyszczynski et al., 1987) or newly acquainted others (Pietromonaco & Markus, 1985). Two relevant findings emerged. First, nondepressed subjects, relative to depressed subjects, judged themselves more likely in the future to experience positive events and less likely than others to experience negative events. Second, when asked to judge the probability of future negative events themselves and for others, depressed subjects showed no consistency across the three studies as they judged negative events to be more probable for themselves (Pietromonaco & Markus, 1985), more probable for others (Pyszczynski et al., 1987), and equally probable for themselves and others (Alloy & Ahrens, 1987).

There are several problems with Taylor and Brown's (1988) claim, based on these findings, that "mildly depressed people and those with low self-esteem appear to entertain more balanced assessments of their likely future circumstances" (p. 197). First, the data are mixed on this point. When analyses focused on judgments about the self, depressed people were more likely than nondepressed people to rate future positive and future negative events as equally likely and hence provide balanced predictions for the future. But when analyses focused on differences between judgments of self and of the unknown, generalized other for future negative events, depressed individuals provided balanced predictions only in the Alloy and Ahrens (1987) study; in the other two studies, depressed persons exhibited the "imbalance" of either self-enhancement or self-deprecation. Perhaps as a consequence of these mixed results, researchers have attributed both illusory optimism and illusory pessimism to similar empirical results, thereby revealing the difficulty in determining who, if anyone, has committed a cognitive error (see Coyne & Gotlib, 1983, for a similar discussion). Thus, Alloy and Ahrens (1987) concluded that "nondepressed subjects did indeed display a self-enhancing bias" (p. 373) and that depressed subjects showed "predictive pessimism" (p. 374). Apparently, distortions are manifested by both nondepressives (self-enhancing bias) and depressives (predictive pessimism), suggesting that both groups (and all people) are distorting in one way or another.

Second, because they were without a valid external criterion for an individual's accuracy about the future, Taylor and Brown continued to invoke the idea of balance of anticipations as their criterion. As we have already argued, numerically balanced

judgments have no necessary connection with the accuracy of judgments. Some individuals quite realistically can look forward to positive futures; others can be uncertain (i.e., balanced) or even pessimistic about the lives they will experience. Subsequent longitudinal inquiry can evaluate the extent to which an individual's prognostications proved to be valid. But balance in one's positive and negative anticipations, here and now, of the future has no logical standing as an index of realism. The absence of an independent, external, subsequent life criterion against which an individual's current optimism may be judged as realistic or unrealistic renders suspect and perhaps erroneous all attributions of accuracy or error to depressed and nondepressed people.

These several criticisms, and the small and inconsistent evidential base offered by Taylor and Brown, lead us to conclude that there is insufficient evidence to claim that unrealistic optimism is positively related to mental health. Regardless of erratic support in 1988 for the Taylor and Brown conclusion, the following question must be raised: Has the later literature reinforced their view that an association exists between unrealistic optimism and mental health, what we call Step C?

We found relatively few references bearing specifically on this proposed connection (perhaps because the notion of exaggerated optimism is often conflated with the notion of illusions of control). Dunning and Story (1991) found that depressives displayed more unrealistic optimism than nondepressives. Although depressed individuals were more pessimistic than nondepressed individuals in their anticipations of what would befall them in their day-to-day lives, "the outcomes that depressed and nondepressed subjects actually experienced reveals that the depressed were not 'pessimistic enough,' leading to lower rates of accuracy" (p. 529). On the basis of a field study on sense of self-efficacy, Haaga and Stewart (1992) concluded that "optimistic biases are usually considered adaptive (Taylor & Brown, 1988), but they can be too extreme, leading to inappropriate complacency about the adequacy of one's skills for coping with difficult situations" (p. 27). A recent series of experiments has demonstrated that unrealistic optimism, when unfulfilled, has countervailing negative consequences in the form of intense negative affect (Diener, Colvin, Pavot, & Allman, 1991).

The primary study we located presented as support for the Taylor and Brown formulation was a large survey by Taylor et al. (1992) of two large groups of gay men: those positive and those negative for the human immunodeficiency virus (HIV). In the present context, this study warrants examination in some detail.

The subjects were administered a variety of assessment procedures. Analyses revealed that the HIV-positive gay men, relative to the HIV-negative gay men, "see themselves [on various self-report measures] to be at greater risk of developing AIDS [acquired immunodeficiency syndrome], have higher levels of AIDS-related worries and concerns, and see themselves as hav-

<sup>9</sup> Four references were excluded from Step B because they primarily pertain to people's normative attitudes and beliefs about the future without fully considering the likelihood or predictive validity of these beliefs (i.e., Brickman, Coates, & Janoff-Bulman, 1978; Free & Cantril, 1968; Markus & Nurius, 1986; Tiger, 1979).

ing *less control* [italics added] over AIDS" (Taylor et al., 1992, p. 472). These findings seem intuitively sensible, given that HIV-positive men have been presented with strong evidence of a drastically shortened life span, whereas HIV-negative men have not been forced to confront this ominous recognition and may yet escape the sad fate of AIDS victims. However, the abstract of the Taylor et al. (1992) study reported that

men who knew they were seropositive for human immunodeficiency virus (HIV) were significantly more optimistic about not developing AIDS than men who knew they were seronegative for HIV. This AIDS-specific optimism was related to *higher perceived control* [italics added] over AIDS and to active coping among seropositive men only. It is concluded that optimism is psychologically adaptive. (p. 460)

What is the basis for this conclusion, given that HIV-positive men, who realistically are at greater risk for AIDS, have characterized themselves as having more worries about AIDS and see themselves as having less control over AIDS? The basis for the summary conclusion that optimism is psychologically adaptive hinges on one particular finding in the study.

Among the self-report measures used in this study was a 28-item questionnaire to ascertain factual knowledge about AIDS and sense of personal vulnerability to the implacably dooming AIDS syndrome. Subjects responded to this questionnaire on a 5-point rating scale ranging from *strongly disagree* to *strongly agree* (5). On the basis of factor analysis of the 28 items, a 6-item scale labeled "AIDS-specific optimism" (ASO) was created. Three sample items are "I feel safe from AIDS because I have developed (or if exposed, would develop) an immunity," "A person can be exposed to AIDS and successfully eliminate the virus from his body," and "I think my immune system would be (is) more capable of fighting the AIDS virus than that of other gay men." According to Taylor et al. (1992), this scale "appears to reflect a belief in invulnerability to developing AIDS" (p. 463). We suggest the not inconsistent interpretation that strong agreement with these scale items may also be interpreted as a factual innocence about AIDS and an overwhelming faith regarding one's body that borders on the bizarre in the well-educated, middle-class sample studied. We also note, and emphasize, that the meaning of disagreement with the items in the ASO scale is psychologically unclear. It seems fair to say, however, that a tendency to disagree with the ASO items does not imply optimism.

Also created was a six-item scale, labeled "fatalistic vulnerability," that "appeared to represent the absence of optimism" (Taylor et al., 1992, p. 463). The ASO and fatalistic vulnerability scales correlated only about  $-.10$ ; their internal consistency reliabilities were, respectively,  $.60$  and  $.41$ , reflecting inferred interitem correlations of  $.20$  and  $.10$ .

The finding on which the Taylor et al. (1992) conclusion that AIDS-specific optimism is psychologically adaptive fundamentally depends is a difference between the means of the HIV-positive and HIV-negative groups on the ASO scale ( $1.94$  and  $1.72$ , respectively). The difference between these two means was statistically significant,  $t(537) = 4.22, p < .0001$ . Several aspects of this finding warrant consideration. On the 5-point rating scale that was used, both the HIV-positive subjects and the HIV-negative subjects tended to disagree with the ASO items claiming

an invulnerability to AIDS. It is psychologically questionable whether the somewhat lesser degree of rejection of invulnerability to AIDS by individuals already testing positively for subsequent AIDS may be represented as greater optimism. It should also be recognized that the effect size of the difference obtained, expressed as a point-biserial correlation, was only  $.18$  (less than 4% of the variance). It may also be relevant that the distribution of scores on the ASO scale was positively skewed. Such skewness detracts from the appropriateness of arithmetic means to represent the typical values of groups. Only a few very high cases can seriously influence the mean value of a group, thus possibly distorting generalizations about the group as a whole. A procedure such as the Mann-Whitney  $U$  test would have been a more reassuring way to evaluate whether the central tendencies of the HIV-positive and HIV-negative groups were different.

Taylor et al. (1992) recognized that their finding that HIV-positive gay men appear to reject the idea of AIDS invulnerability somewhat less than HIV-negative men was "seemingly paradoxical" (p. 472), given the larger and coherent pattern of results indicating that HIV-positive subjects see themselves as at greater risk for AIDS, are more worried about AIDS, and see themselves as having less control over AIDS. They suggested that

the conceptual analysis of positive illusions (Taylor, 1989) provides some hints as to how these beliefs may simultaneously exist in the same sample . . . patients with a poor prognosis . . . are aware of this fact without it eliminating their ability to experience feelings of control or optimism about their ability to, if not overcome, at least manage their responses to their disorders. (p. 472)

This interpretation is troubling to us on two counts. From an experiential standpoint, one can appreciate and even be awed by the courage and resourcefulness with which mature individuals, knowledgeable about their dire health situations, confront and "manage" their bleak realities. However, it does not follow that such individuals have a sense of control and are optimistic in any way about their circumstances; rather, it would seem that, liking life, they are attempting life extension and are being brave in graceful ways.

The second basis for disagreeing with the Taylor et al. (1992) interpretation of their study is a concern regarding the coherence and therefore replicability of their findings. Both the HIV-positive and HIV-negative samples scored well toward the disagreeing end of the AIDS-specific optimism continuum, and the difference between the two HIV groups on this scale was quite small. We do not believe that it is conceptually appropriate to interpret different degrees of disagreement regarding invulnerability as implying AIDS-specific "optimism." Furthermore, with respect to the fatalistic vulnerability scale, presented as measuring the absence of optimism, we note the seemingly inconsistent finding that the two groups were virtually identical.

Given the existence of uncertainties about the psychometric merits and the psychological meaning of the scales used, we suggest that this study cannot be offered as strong new support for the Taylor and Brown position until the paradoxical, counterintuitive finding on which the interpretation was based receives replication or other forms of empirical support. Overall, in regard to unrealistic optimism, we suggest that a sturdy connec-

tion of this illusion with mental health has not yet been established.

### Other Concerns Regarding the Taylor and Brown Formulation

So far, in evaluating the Taylor and Brown essay, we have focused primarily on the evidence they adduced for the claimed association between positive illusions and mental health, what we have termed Step C. However, in addition, it seems to us that their essay was guided by a number of unarticulated, controlling, and—we believe—debatable assumptions. We bring forward three of our concerns, regarding (a) the reasoning they used to decide that certain typical behaviors represent illusions; (b) their uncritical presumption that errors, biases, and illusions in cognitive processing typically characterize the functioning of normal, ostensibly psychologically healthy individuals; and (c) the way they specified and explained mental health.

### *Problems With Declaring That Certain Typical Behaviors Are Illusional*

In our earlier evaluation of the evidence in support of the Taylor and Brown formulation, we focused on the last step of their argument (Step C), the association between positive illusions and mental health. However, their Step B, wherein certain typical behaviors are said to be illusional, also warrants consideration and questioning. Specifically, we take issue with the reasoning Taylor and Brown often used to conclude that a "positive illusion" exists.

One experimental procedure invoked by Taylor and Brown (e.g., Abramson & Alloy, 1981; Abramson et al., 1981; Alloy & Abramson, 1979; see also Miller & Ross, 1975) involved comparison of a subject's assessment of his or her own performance with the experimentally manipulated feedback about the subject's performance provided by the experimenter. When a discrepancy occurs between a subject's personal performance estimate and the experimenter's theory-based presumption of how the subject should evaluate his or her performance, an error of perception is typically attributed to the subject by the experimenter (and also by Taylor and Brown). Moreover, when subjects rate their performance to be better than the (erroneous) experimental feedback warrants, a positive illusion is said by the experimenter (and also by Taylor and Brown) to have occurred.

This interpretation, we suggest, is problematic. The way an investigator interprets a situation is not necessarily the way a subject interprets the same situation. This is an old recognition; the psychological definition of situations has perhaps been the single most difficult task for social and personality psychologists. Many investigators presume but do not evaluate the psychological "press" of the situations they impose on their subjects. Too often, experimenters assume that their preferred conception of the situation registers on the subject; consequently, when a subject's behavior deviates from the experimenter-defined situational press, an "error" or "illusion" is said to have occurred. For example, a typical subject, an intelligent college student accustomed to personal academic success and general

effectiveness, who fails to solve a laboratory anagram task and attributes the failure to external causes may be labeled by the experimenter as exhibiting a self-serving causal attribution (Miller & Ross, 1975). However, from the personal perspective of a subject who has experienced a lifetime of intellectual effectiveness, it may not be unreasonable to project the immediate, unusual performance failures experienced in a brief, contrived, often implicitly coercive laboratory situation as externally, even devilishly, caused. When the subject's lifelong, life-based, experience-laden construal of self is pitted against a brief, artificially arranged, experience-deviant "reality," it is not particularly surprising from a Bayesian standpoint that the subject's perceptions of personal performance will be discrepant from the experimenter's design-defined communication regarding the subject's performance. Thus, we argue, as have others, that any operationalization of a cognitive illusion that pits an experimenter's imputations of reality or effectiveness against a subject's perception of reality or effectiveness is dubious unless it can be shown that the subject psychologically registers the situation in the way the experimenter wishes (Alloy & Abramson, 1988; Coyne & Gotlib, 1983; Dunning & Story, 1991; Funder, 1987).

Another Step B operationalization of cognitive illusion described by Taylor and Brown is also interpretively precarious. They argued that normative cognitive illusions can be said to exist "if most people believe that they are happier, better adjusted, and more skilled on a variety of tasks than most other people" (Taylor & Brown, 1988, p. 194). Logically, only in Garrison Keillor's Lake Wobegon, "where all children are above average," can this be true. But this logical argument can be used illogically or unthinkingly. Three problems with this operationalization of "unrealistically positive self-views" warrant mention.

First, some individuals are, in fact, as judged by a variety of life criteria, truly happier, better adjusted, and more skilled than most other people. The Taylor and Brown reasoning, however, places all people who rate themselves better off than most others into a group of "illusory" individuals. Thus, individuals who are indeed better off than most people are merged with individuals who invalidly report that they are better off than most. This approach to operationalization does not allow individuals to be differentiated with respect to their degree of "positive illusion." Again, an external and valid criterion is required before a judgment regarding illusion can be offered.

Second, there is another way most people can report they are better off than most others without engaging in error-laden cognitions. When asked so vague and encompassing a question as "How happy are you compared with other people?" individuals are free to choose the specific facets of their life on which to base their ratings. For example, a business executive might base her comparative happiness rating on the positive contribution she has made to her company's financial success, whereas an athlete might be happy about his accomplishments vis-à-vis the playing field. Thus, if people make social comparisons based on self-selected categories, it is readily possible for most people to find a category with regard to which they will be happier than most others. Earlier, Taylor herself made this same point: "Everyone is better off than someone else as long as one picks the right

dimensions" (1983, p. 1166). Of appreciable importance in this connection, the "better off than most" effect dissipates when subjects rate specific and clearly defined experimenter-provided categories (Dunning, Meyerowitz, & Holzberg, 1989). We conclude that the self-selection of dimensions of comparison can provide a reasonable explanation for much of the better off than most effect.

Third, when subjects rate their level of happiness, adjustment, or skills relative to a hypothetical group of people, it is often not clear what comparison group was being invoked by the subjects offering the social comparisons. It may also be unclear as to the domain in which subjects are making their comparisons: intelligence, attractiveness, warmth, sense of humor, athletic ability, and so forth. College students are often the subjects providing the comparative ratings. However, college students, by most objective standards, are appreciably better off than most other people: They are younger, smarter, more affluent, healthier, more informed, and so on. It is also the case in social comparisons that people may draw on a comparison group they know to be worse off, thereby guaranteeing a favorable self-rating. Thus, the better off than most effect could be accurate in general or accurate in the limited sense that an assuredly deficient comparison group was chosen to guarantee a favorable self-rating. In any case, the unknown (and unsought) characteristics of the hypothetical comparison group render questionable this operational definition of unrealistically positive self-views.

In summary, the logic by which Taylor and Brown inferred the presence of illusions is uncertain because they did not establish the external, objective, pertinent frames of reference (i.e., "the reality") against which the subjective evaluations of individuals can be compared so that accuracy or distortion may indeed be evaluated. The problem of establishing a valid criterion for reality afflicts almost all of the work in this field.

### *Human Errors in Cognitive Processing*

Cognitive psychology over the past 20 years has revealed (and revealed in) a human inference system predicated on the use of heuristics that, in a fuzzy, sometimes unlikely world, often lead to biased and erroneous decisions (e.g., Kahneman, Slovic, & Tversky, 1982; Nisbett & Ross, 1980). The received view of the mind has been that human cognitive processing is significantly flawed and that these flaws are normative (i.e., they are widely and typically manifested). Interestingly, the laboratory demonstrations of these cognitive flaws have generally not gone further to evaluate the implications of such errors for adaptation or maladaptation in the daily world. The Taylor and Brown formulation derives from this view of human cognition.

This prominent and generally accepted characterization of human cognitive processing as error prone and flawed is, however, increasingly being questioned. One of the first counteranalyses suggested that many of the errors so frequently found in laboratory research reflect processes that actually are adaptive for humans in real-life contexts (Funder, 1987). For example, an error of perception is often ascribed to subjects who succumb to the Ponzo illusion (also known as the railroad track illusion). However, the cognitive process that underlies

this perceptual error in the laboratory need not create a mistake when it functions in the real world; indeed, this process allows airplane pilots to safely land their planes as they approach a runway. Funder's analysis closely aligns with our preceding remarks that cognitive illusions are often, and unjustifiably, attributed to subjects when their perception and consequent behavior in an experimental situation diverges from the experimenter's construction of what is appropriate behavior in the experimenter-defined situation.

Gigerenzer and his colleagues have also criticized the characterization of human cognition as being error prone. They have argued powerfully and persuasively, with an interplay between theory and empiricism, that the human cognitive system is indeed quite adept at processing information and that previous characterizations of the human information processor have been unjust and short sighted, being predicated on experimental situations, problem definitions, and data-gathering procedures that misled subjects and in effect entailed the results obtained (Gigerenzer, 1991a, 1991b; Gigerenzer, Hoffrage, & Kleinbolting, 1991). For example, Gigerenzer noted that the errors in probabilistic reasoning often exhibited by subjects would not be considered probabilistic errors by most probability theorists. Whereas cognitive researchers in the heuristics and biases tradition ask their subjects about the probabilities of single or solitary events, it should be noted that the prevailing conceptual view of probability held by mathematical statisticians is a "frequentist" orientation that considers probability as applying only to events that occur over the long run. As an example, readers will recall from statistics courses that a level of significance of  $p < .05$  indicates that if the null hypothesis is true and an equivalent experiment is conducted 100 times, a significant result would be expected by chance five times;  $p < .05$  does not indicate the probability of a single experimental result. Gigerenzer's research on the cognitive illusions labeled *overconfidence bias*, *conjunction fallacy*, and *base-rate fallacy* suggests that the human mind functions more in a "frequentist" than an "eventist manner." His experiments show that if the word problems previously used to demonstrate these biases and fallacies are altered to reflect long-run probabilities rather than the probability of single events, the seeming biases, fallacies, and illusions disappear altogether (Gigerenzer, 1991b).

In calling attention to these recent reconceptualizations and redefining empirical demonstrations, we do not suggest that the human cognitive system is flawless. But we do propose that the mind is more accurate and adaptively resourceful than the last 20 years of cognitive research would have one believe. When researchers look for cognitive errors, they will be found, and when cognitive effectiveness is sought, it also will be found. Taylor and Brown (1988) asked, "How can the normal, healthy individual perceive reality accurately if his or her perceptions are so evidently biased and self-serving?" (p. 194). We acknowledge that normal, healthy individuals often distort reality, because of contextually influenced perceptual errors or for immediate, self-serving reasons. However, we suggest, furthermore, that normal, mentally healthy people—because reality orientation and adaptiveness are intrinsic to the notion of mental health—will exhibit self-corrective tendencies over time. If a new, psychologically resilient employee, for example, initially misesti-

mated the quality of his work performance, one would expect him to recognize the feedback provided by superiors and peers and to derive an estimate of work performance that more closely reflects his true performance. One would also expect less psychologically adaptive individuals (i.e., those who are less mentally healthy) not to engage in this accommodative process and to persevere with their illusory self-perceptions. Thus, whereas Taylor and Brown suggested that people use cognitive illusions to prolongedly maintain and enhance their level of mental health, we suggest that although people may often distort reality—especially in instances in which there is no feedback—they also will often use a corrective strategy whereby later, convergent, more valid information is assimilated that overrides and rectifies the initial distortion. We do not accept the pervasive dismal view of the human mind as being untuned to reality detection.

### *On the Construct and Operationalization of Mental Health*

We suggest that, throughout the presentation of evidence for their argument that positive illusions are related to mental health, Taylor and Brown did not use conceptually acceptable and empirically substantial operationalizations of the construct of mental health as this construct is generally understood. For example, in some of the laboratory studies cited, positive illusions were related to quick and convenient criterion measures of current mood in undergraduate samples. These criteria may reflect transient psychological states, but it is an open and still unstudied question whether such momentary indexes (and positive illusions) do indeed relate closely to indexes of mental health based more broadly and more reliably on the functioning in everyday life of more representative, and clinical, samples.<sup>10</sup>

As another example of the use of criteria for mental health that are questionable and yield conceptually confusing and irrelevant results, consider the adoption by Taylor and Brown of the absence of depression as a surrogate index for the positive presence of mental health. A difficulty with this reasoning uncritically applied can be seen when they asserted that mildly and severely depressed individuals appear to be less vulnerable to the illusion of control than nondepressed individuals (Taylor & Brown, 1988, p. 196). A study by Golin et al. (1979) was referenced to support this claim. In this study, the “nondepressed” comparison group more vulnerable to the illusion of control consisted of hospitalized psychotics, schizophrenic patients with no secondary diagnosis of depression. The Lewinsohn et al. (1980) study, otherwise questionable as we have already noted, also compared nondepressed and depressed psychiatric patients, finding that depressives were more realistic than the psychiatric controls. On conceptual grounds, we would argue that psychiatric patients, unquestionably maladapted but not dysphoric in their orientation toward life, cannot fairly be held to represent a construct of mental health that is affirmatively defined rather than defined simply as the absence of depression.

In their article, Taylor and Brown (1988) did discuss the relation between positive illusions and mental health more broadly conceived in life-relevant terms but only after having concluded to their own satisfaction that “positive illusions about the self,

personal control, and the future exist and are true for normal people” (p. 197) more than for people less psychologically normal. After this conclusion, they took on the explanatory task (pp. 197–200) of “identify[ing] how these illusions contribute to mental health” (p. 197). To do so, they considered traditional definitions and associated criteria for mental health (Jahoda, 1958; Jourard & Landsman, 1980) and extracted four established criteria for mental health: (a) the ability to accurately perceive oneself, (b) the ability to be happy or contented, (c) the ability to care for others, and (d) the capacity for creative, productive work.

Given the conclusion they had reached on the relation between unrealistic views of the self and mental health, Taylor and Brown dismissed the first criterion regarding accurate self-knowledge. However, they acknowledged and accepted the latter three criteria as central features of the broad construct of mental health. It should be noted that each of these three remaining criteria refer to enduring abilities, capacities that deeply characterize individuals in the course of their lives.

In their attempt to explain how positive illusions contribute to or foster the three accepted mental health criteria, Taylor and Brown proceeded in a way we suggest is presumptive. Confident that they had already proven their case that positive illusions foster mental health, they used this conclusion to reinterpret a wider literature. Thus, with respect to the mental health criterion of happiness or contentment, they documented that

people who have high self-esteem and self-confidence, who report that they have a lot of control in their lives, and who believe the future will bring them happiness are more likely than people who lack these perceptions to indicate they are happy at the present. (Taylor & Brown, 1988, p. 198)

Because, typically, most individuals (60%) report that they are happier than average and this normative tendency was taken by Taylor and Brown as evidence of a positive illusion, it followed for them that positive illusions are tied to happiness and may even promote happiness. We observe that, if the Taylor and Brown conclusion is regarded as not yet proven, it is not surprising (and perhaps is even tautological or definitional) that individuals high on self-esteem, with a sense of control of their lives, and with optimism about the future are happier than individuals lacking these self-evaluations.

With respect to the mental health criterion of “ability to care for and about others,” Taylor and Brown cited some analog experiments indicating that subjects in whom positive moods are induced are more likely to help others, to be sociable, to be less contentious, and to offer more positive evaluations of people in general. We must observe that these transient laboratory effects cannot be accepted as evidence for long-term, characterologi-

<sup>10</sup> Interestingly, Taylor (1983) has expressed similar concerns: “Laboratory-based efforts often portray specific cognitions as if they were highly robust rather than fluid and ephemeral” (p. 1167). She called for “expanding the study of cognitions to include field situations of high involvement” (p. 1167). Although Taylor was commenting with regard to laboratory studies that found that the illusion of control has adverse effects, this observation, of course, applies as well to laboratory studies seemingly finding that positive illusions have beneficial effects.

cally based caring tendencies. In any event, if the Taylor and Brown conclusion that positive self-regard represents "exaggeratedly positive self-perceptions" is regarded as not yet proven, it is not surprising that individuals who value themselves and do not feel threatened are enabled to be constructively responsive to and positively evaluative of their social surroundings.

With respect to the mental health criterion of "capacity for creative, productive work," Taylor and Brown (1988), after reviewing some of the literature on motivation, persistence, and performance, concluded that

self-enhancement, exaggerated beliefs in control, and unrealistic optimism can be associated with higher motivation, more effective performance, and ultimately, greater success. A chief value of these illusions may be that they can create self-fulfilling prophecies. They may help people try harder in situations with objectively poor probabilities of success. (p. 199)

We observe that, if the Taylor and Brown proposition is rejected as not yet proven, it is not surprising that individuals with valid self-regard, with a sense of personal efficacy, and with realistic optimism manifest higher motivation, greater persistence, more effective performance, and, ultimately, greater success.

Thus, we suggest that the Taylor and Brown explanation of how illusions contribute to mental health depends entirely on their prior conclusion that positive illusions are associated with mental health. To the extent that this conclusion can be seriously questioned, it follows that their explanation loses cogency.

### Conclusion

Our appraisal of the Taylor and Brown (1988) thesis that three key positive illusions maintain and bring about mental health has led us to conclude that their formulation has a meager empirical foundation and a shaky conceptual structure. Although they cited numerous books and articles, only a few of these references proved to be germane to their essential argument. Close and critical inspection of these pertinent citations provided little support for the Taylor and Brown contention because of their many conceptual vagaries, methodological limitations, and empirical anomalies. Although our delineated analysis of this 1988 essay stands in its own right and, in principle, can be evaluated on its own merits, our reading of the subsequent psychological literature has not lessened our concerns about the tenability of the Taylor and Brown cognitive adaptation model. Consideration of several assumptions underlying their argument brought forward additional recognitions that cast further doubt on their formulation and its basis.

Conceptually, we acknowledge that positive illusions may assist in the regulation of mood and may sometimes provide temporary and even prolonged relief for individuals experiencing negative affect. Thus, we are not uncomfortable with the notion that a positive illusion may function in an individual as a short-term and even long-term fix to avoid confronting personally threatening self-recognitions. We do feel considerable uneasiness, however, with Taylor and Brown's (1988) view that positive illusions are "pervasive, enduring, and systematic" (p. 194) in mentally healthy individuals and their corollary assertion, that mentally unhealthy individuals are more accurate and reality

attuned than mentally healthy individuals. We do not believe that cognitive distortions about oneself and one's social surroundings can result in adaptive behavior over long periods of time in a world that provides feedback or reacts back on the individual. Adaptive functioning requires cognizance of antecedent-consequent relations. If individuals distort reality and thereby misjudge consequential, law-reflecting relations, we believe that such individuals must necessarily emit suboptimal, if not maladaptive, behavioral patterns over the long run of a life.

Developmental psychologist Robert McCall (1977) has observed that excessive reliance on experimental data poses a "can" versus "does" question for psychological sciences seeking generalizability and cumulativeness. Although there may be demonstrations of the various ways that  $X$  can influence  $Y$  in the laboratory, McCall noted that even if an  $X$  and  $Y$  relation in the laboratory is found to replicate, the finding may be unrelated to the larger question of whether  $X$  relates to  $Y$  in the real world. Thus, although it may be shown that a laboratory index of illusions can influence a transitory, analog index of mental health, it is a separate question whether in the real world positive illusions do positively influence mental health. We know of no robust studies supporting this wider, and necessary, generalization. Thus, a leap of faith is required from laboratory findings that cognitive illusions affect transient mood or that dysphoric individuals provide more evenhanded self-descriptions to the arresting, people- and policy-influencing declaration that cognitive illusions positively influence mental health in daily life. Readers will individually have to decide whether, on the basis of the present evidence, they wish to make that leap.

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### P&C Board Appoints Editor for New Journal: *Journal of Experimental Psychology: Applied*

In 1995, APA will begin publishing a new journal, the *Journal of Experimental Psychology: Applied*. Raymond S. Nickerson, PhD, has been appointed as editor. Starting immediately, manuscripts should be submitted to

Raymond S. Nickerson, PhD  
Editor, *JEP: Applied*  
Department of Psychology  
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The *Journal of Experimental Psychology: Applied* will publish original empirical investigations in experimental psychology that bridge practically oriented problems and psychological theory. The journal also will publish research aimed at developing and testing of models of cognitive processing or behavior in applied situations, including laboratory and field settings. Review articles will be considered for publication if they contribute significantly to important topics within applied experimental psychology.

Areas of interest include applications of perception, attention, decision making, reasoning, information processing, learning, and performance. Settings may be industrial (such as human-computer interface design), academic (such as intelligent computer-aided instruction), or consumer oriented (such as applications of text comprehension theory to the development or evaluation of product instructions).