4 The Self ·

Anthony G. Greenwald
Ohio State University

Anthony R. Pratkanis
Carnegie-Mellon University

Contents

1. INTRODUCTION

> One of the oddest events in the history of modern psychology is the manner in which the ego (or self) became sidetracked and lost to view. (Allport, 1943, p. 451)

This chapter is written in the spirit of two prior reviews—William James's (1890) chapter on "The Consciousness of Self" in his *Principles of Psychology*,

and Gordon W. Allport's 1943 article, "The ego in contemporary psychology." Like James and Allport, we have set out to shape a usable, psychological concept of the self by mixing conceptual analysis and empirical review. Also, like them, we find it convenient to subdivide our treatment into several aspects, or functions of the self. For each of these subdivisions of the topic, we start by summarizing the relevant positions of James and Allport. We then review subsequent developments in theory and research—most of these achieved within the last decade—with the aim of extending and revising James's and Allport's conclusions.

To anticipate the end of this review, we hope to convince the reader that some issues that have long been considered mysterious—even beyond the realm of scientific psychology—are theoretically and empirically tractable. We shall conclude by defining the self as a complex, person-specific, central, attitudinal schema. But, before proceeding, we start by summarizing the two prior reviews that have defined the major issues with which our review is concerned.

William James (1890)

James's chapter on the self occupies 111 pages in Volume 1 of his *Principles* (pp. 291–401). The chapter divides treatment of the normal self into major sections on "The Empirical Self or Me" (291–329) and "The Pure Ego" (329–373). A third section, which we do not review here, concerns "The Mutations of the Self" (373–400), including phenomena of multiple personality, fugue, amnesia, hypnosis, and trance.

The empirical self is the self as an object of perception and knowledge—what today is called the *self-concept*. James divides the empirical self into the *material* self, the *social* self, and the *spiritual* self. The material self includes not only one's body, but also clothes, family, home, and property. The social self is the impression that one gives to significant others. (James said that "a man has as many social selves as there are distinct groups of persons about whose opinion he cares" [p. 294].) The spiritual self is one's "inner or subjective being, . . . psychic faculties or dispositions [such as] moral sensibility and conscience, . . . indomitable will," and "ourselves as thinkers" (p. 296).

After thus describing the material, social and spiritual "constituents" of the empirical self, James proceeds to treat self-feeling, self-seeking, conflict of the different selves, and self-love. Distributed through these four subsections are James's treatment of individual differences in self-related affect ("self-estimation") and conation ("self-seeking"). Table 4.1 is adapted from James's own summary table of the affective and conative aspects of self (p. 329). We have added a row to his table, to include the cognitive or perceptual-object aspect of self.

The long section on the "pure ego" gives James's analyses of personal identity and unity of the stream of thought (330–342), and his detailed critiques of alternative philosophical formulations (342–370). James considers that personal identity and unity are properties of the empirical self. He identifies three

TABLE 4.1
James's Analysis of the Empirical Self[a]

	Subdivisions of the Empirical Self		
	Material Self	*Social Self*	*Spiritual Self*
CONSTITUENTS (COGNITIVE COMPONENT)	Body, clothes, family, home, possessions	Recognition from persons one loves; liking by peers; fame, honor	Inner or subjective being; psychic faculties, dispositions, will; a portion of the stream of thought
SELF-ESTIMATION (AFFECTIVE COMPONENT)	Personal vanity, modesty, pride of wealth, fear of poverty	Social and family pride, vainglory, snobbery, humiliation, shame	Sense of moral or mental superiority, purity, sense of inferiority or guilt
SELF-SEEKING (CONATIVE COMPONENT)	Bodily appetites and instincts; love of adornment, foppery, acquisitiveness, constructiveness, love of home	Desire to please, be noticed, admired; sociability, emulation, envy, love, pursuit of honor, ambition	Intellectual, moral and religious aspiration, conscientiousness

[a] Based on James (1890), p. 329.

varieties of a contrasting, "pure ego," theory—that is, theories that consider identity and unity *not* as functions of the empirical self. These are (i) theories of the soul, defined as immaterial substance (for example, the unextended mental substance postulated by Descartes); (ii) the associationist theory, which treats identity and unity as unexplained, emergent properties of associated collections of ideas; and (iii) the transcendental ego (especially Kant's) theory, in which identity and unity are innate properties of mind. James shows little patience with these nonempirical theories—for example, characterizing the transcendental ego as "simply nothing; as ineffectual and windy an abortion as Philosophy can show" (p. 365). We return later to the question of the possibility of empirical interpretations of the self as knower.

Gordon Allport (1943)

Allport introduces his review by lamenting the disappearance of the self from psychology, noting that it was perhaps legitimately banished by a behaviorist positivism that would not tolerate a concept dwelling "on the unenlightening plane of dialectics" (p. 452). He credited psychoanalysis with preserving "the study of certain functions of the self that postivistic psychology had consigned to oblivion" (p. 453). The aim of Allport's review was to regain the "admittance" of the ego to good standing in psychology" (p. 476).

The first of two major sections, "Main Conceptions of the Ego" (453–459), reviews eight senses of ego (or self—Allport used the two terms interchangeably). The following summary of Allport's eight senses of ego includes some of our observations on relationships with James's analysis:

1. *Ego as knower* designates the experiencing agent, corresponding to the philosophers' "pure ego," and to the functions that James attributed to the spiritual portion of the empirical self.
2. *Ego as object of knowledge* is the bodily self, which was a part of James's material self.
3. *Ego as primitive selfishness* corresponds to James's *material* self-seeking (see Table 4.1, above).
4. *Ego as dominance drive* refers to "that portion of the personality that demands status and recognition" (p. 455), corresponding to James's *social* self-seeking.
5. *Ego as a passive organization of mental processes* was Allport's acknowledgement of Freud's concept of ego, a neutral arbitrator among the conflicting forces of id, superego, and environment.
6. *Ego as a fighter for ends* corresponds to James's *spiritual* self-seeking, and to the dynamic view of ego in psychoanalytic thinking since Hartmann (1939/1958).
7. *Ego as a behavioral system* designated the Gestalt-psychological concep-

tion of a central region of personality, found in the work of Koffka (1935) and Lewin (1936).

8. *Ego as the subjective organization of culture* refers to the self as a residue of socialization experience, a system of social values.

The second major section of Allport's paper, "Experimental Evidence" (pp. 460–472), contains his presentation of evidence in support of the point that

ego-involvement, or its absence, makes a critical difference in human behavior. When a person reacts in a neutral, impersonal routine atmosphere, his behavior is one thing. But when he is behaving personally, perhaps excitedly, seriously committed to a task, he behaves quite differently. In the first condition his ego is not engaged; in the second condition . . . one finds that the ego is acting in several, if not all, of the eight capacities I have listed. In other words, *ego-involvement* is, as the phrase implies, a condition of total participation of the self—as knower, as organizer, as observer, as status seeker, and as socialized being. (p. 459)

This justification for the concept of ego-involvement was the core of Allport's argument for the acceptability of the self in psychology. Allport's eight senses of ego didn't provide as neat a classification as did James's earlier (Table 4.1) analysis. Indeed, Allport later attempted to improve his classification (Allport, 1955, 1961). By 1961, Allport had concluded that the self as knower did not belong in psychology, and was better left to philsophy.

In 1943 Allport was confident that the time was ripe for psychology to take up the self. Despite the presence of other advocates (Hilgard, 1949; Rogers, 1942; Sherif & Cantril, 1947), no sustained programs of research developed. One can attribute this, retrospectively, to a lack of successful research procedures. Now, 40 years later, it appears that a variety of research procedures for studying the self have at last established their usefulness. Accordingly, and with the clarity of vision afforded by at least 5 years of hindsight, it seems time to conclude that the self *has* attained good standing in psychology.

2. THE SELF AS KNOWER

William James (1890) devoted over 40 pages to his own and others' attempts to explain the self's subjectivity, its function as the agent of experience, its role as knower. His own explanation treated these as properties of the stream of thoughts. "Each later Thought," he said, "knowing and including . . . the Thoughts which went before, is the final receptacle . . . of all that they contain" (p. 339). To amplify this unusual idea, he used a variety of analogies, among them "a long succession of herdsmen coming rapidly into possession of the same cattle" (p. 339). Just as each passing herdsman is successively the owner of the cattle, so

"the passing Thought then seems to be the Thinker" (p. 342). James's hypothesis that the current thought bears the properties of the self as knower was intended to keep the self's subjectivity within the empirical self (part of its spiritual constituent—see Table 4.1, above). However, his hypothesis does not appear to have gained adherents, nor does it have apparent testable implications. In short, it may not be distinguishable from the "pure ego" theories that James so vigorously criticized.

In the context of James's review and Allport's (1961) abandonment of the self as knower, perhaps the most remarkable advances that are reported in this chapter are recent empirical treatments of the self as knower. We consider this progress in two areas, self as a memory system and biases in self-relevant judgment, and then summarize implications for a conception of the self as knower.

Self as a Memory System[1]

> The phenomenon of Self and that of Memory are merely two sides of the same fact. We may, as psychologists, set out from either of them, and refer the other to it.
> (James Mill, *Analysis of the Human Mind*, 1829)

As the quote from James Mill indicates, the idea of a connection between self and memory is not a novel development. In the nineteenth century and through most of the twentieth century, the best empirical evidence for this connection was in pathologies, such as amnesia and multiple personality, that showed simultaneous disorders of memory and in the sense of personal unity—specifically, amnesia, fugue, and multiple personality. Edouard Claparède (1911/1951) identified the amnesia of Korsakoff syndrome as another self/memory disorder, presaging much modern attention to memory in Korsakoff patients (e.g., Butters & Cermak, 1980; Jacoby & Witherspoon, 1982).

> If one examines the behavior of such a patient, one finds that everything happens as though the various events of life, however well associated with each *other* in the mind, were incapable of integration with the *me* [ego] itself. (Claparède, 1911/1951, p. 71)

Kurt Koffka (1935) devoted more than 60 pages of his major work, *Principles of Gestalt Psychology*, to making a case for the function of ego as a memory system. However, the evidence he reviewed was not difficult to accommodate equally within theories of memory organization that did not appeal to a self (especially Bartlett's, 1932). After Koffka, the self-memory relation lay dormant

_____

[1]This section summarizes and updates a recent review by the first author (Greenwald, 1981).

until a burst of research was initiated by Rogers, Kuiper, and Kirker's (1977) report of the *self-reference effect*. Greenwald (1981) summarized the results of this recent research activity, drawing it together with previous more isolated findings, to identify three "self/memory" effects.

1. *The self-generation effect.* Material that is actively generated by the learner is retrieved more easily than is material passively encountered (Bobrow & Bower, 1969; Erdelyi, Buschke, & Finkelstein, 1977; Greenwald & Albert, 1968; Jacoby, 1978; Slamecka & Graf, 1978).

2. *The self-reference effect.* Material that is encoded with reference to self is more easily retrieved than is material otherwise encoded (Bower & Gilligan, 1979; Brenner, 1973; Hull & Levy, 1979; Keenan & Baillet, 1980; Kuiper & Rogers, 1979; Lord, 1980; Markus, 1980; Owens, Dafoe, & Bower, 1977; Rogers, 1981; Rogers et al., 1977; Ross & Sicoly, 1979).

3. *The ego-involvement effect.* Material that is associated with a persisting task is more easily retrieved than is material associated with a completed task (Aall, 1913; Bjork, 1972; d'Ydewalle, Degryse, & DeCorte, 1981; Epstein, 1972; Jacoby, Bartz, & Evans, 1978; Nuttin, 1953; Nuttin & Greenwald, 1968; Zeigarnik, 1927, 1938).

In the few years since Greenwald's review, a fourth self/memory finding—the second-generation effect—has appeared, and several researchers have actively investigated the self-reference effect.

The Second-generation Effect.   Greenwald, Banaji, Pratkanis, and Breckler (1981) gave subjects a generation task for each of 20 nouns ("targets")—to produce a sentence that contained both the target noun and a specific person's name. After an involving filler task, subjects received an unexpected test for recall of the 20 nouns. In a condition that produced a very high level of incidental recall, the names used in sentences (along with the target nouns) had themselves been produced by a generation task—specifically, the task of producing a list of names of friends. (In a comparison condition that produced significantly lower recall, these names were ones of unfamiliar people.) The beneficial effect of the additional, or second, generation task explains the description of the result as a "second-generation effect." This effect has been replicated by Banaji (1982) and by Greenwald and Banaji (1983).

Recent Studies of the Self-reference Effect

In the original procedure of Rogers et al. (1977), subjects judged whether each of a series of trait adjectives (for example: friendly, shy) was self-descriptive or not. On a later unexpected recall test, subjects recalled more trait words that had been incidentally encountered in this task than of ones encountered in other tasks.

Variant Self-reference Effects.   Several researchers have modified the procedures of the self-reference experiment in a search for the conditions that control the effect. Bower and Gilligan (1979) obtained equivalently strong recall with a different self-reference task in which subjects were asked to retrieve personal experiences (episodes) relevant to the trait words. Friedman and Pullyblank (1982), Bellezza (1983), and Banaji, Devine, and Greenwald (1983) have similarly found strong memory benefits of tasks involving the retrieval of personal experiences. Banaji, Devine, and Greenwald (1983) reported another self-reference-like effect—imaging objects in personal settings (such as the location of their home telephone) produced better recall of the objects than imaging them in impersonal settings (such as a pay telephone booth). Bellezza (1983) reported two variant self-reference effects—recall was enhanced when nouns were associated with parts of one's body, and also when nouns were integrated into a fabricated story about the self.

Self-reference Versus Other-reference.   Several studies have compared the effect on subsequent recall of making judgments relevant to the self versus making judgments relevant to others. Findings have varied between superior recall for self-reference (Keenan & Baillet, 1980; Kuiper & Rogers, 1979) and comparably strong recall for self- and other-reference (Bower & Gilligan, 1979; Friedman & Pullyblank, 1982). In a study that varied familiarity of the other persons on whom judgment tasks focused, Keenan and Baillet (1980) reported that incidental recognition improved in an orderly fashion with increases in the familiarity of the other. Chew (1983) and Claeys (1983) have since replicated this orderly relationship between familiarity of the other and memory, using incidental recall measures.

Modifications that Eliminate the Self-reference Effect.   In their second experiment, Keenan and Baillet (1980) found that the task of judging whether anatomical features were possessed by self and others did *not* yield a superiority for features judged in terms of self. They suggested that the self-reference effect might occur only for evaluative judgments. Relevant to this, Ferguson, Rule, and Carlson (1983), and also Friedman and Pullyblank (1982), found that judgments of the evaluative character of trait words facilitated memory as much or nearly as much as did judging their self-descriptiveness. Lord (1980; replicated by Karylowski, 1983) found that recall of object names was worse for the task of imaging oneself together with each of the objects than for the task of imaging another person in interaction with them. He suggested that imagery of the self was not part of the self as a memory structure. Maki and McCaul (1982) noticed that both Keenan and Baillet's and Lord's conditions that did not produce self-reference effects involved nouns (rather than trait adjectives) as the target stimuli. In their own studies, Maki and McCaul found a self-reference effect with the usual self-descriptiveness judgment task for trait adjectives, but not with either of

two judgment tasks in which the target items were nouns, nor with the task of judging whether trait adjectives were used in speech on a daily basis.

Part-of-speech, Evaluation, and Imagery are not Critical.   Three empirical hypotheses can be derived from the empirical variations that have eliminated the self-reference effect: (i) that the self-reference effect occurs only with trait adjectives (and not with nouns), (ii) that it occurs only when an evaluative judgment task is used, or (iii) that it does not occur in tasks using imagery. These three hypotheses, however, can be discounted on the basis of other findings in which variant self-reference effects (see above) have been obtained in tasks using nouns, using nonevaluative encoding tasks, and using imagery (Banaji, Devine, & Greenwald, 1983; Bellezza, 1983).

Theoretical Interpretation of Self-reference Effects

The most successful theoretical accounts of the self-reference effect have interpreted it in terms of either effective *encoding processes* or effective use of *existing cognitive structures.*

Encoding processes.   This type of interpretation has been advocated by Bower and Gilligan, Keenan and Baillet, and Friedman and Pullyblank. They note that judgment tasks vary in the degree of elaboration (or richness or complexity) of associative processes that occur during initial encounter with to-be-recalled items (Anderson & Reder, 1979; Craik & Tulving, 1975). Self-reference tasks, they assume, produce more elaborate associative encodings than do the tasks with which they are compared (for example, other-reference or semantic judgment tasks). More elaborate associations, in turn, provide a larger set of associative paths that can be used later to retrieve the encoded items. A minor difficulty for the elaboration hypothesis stems from the fact that self-relevance judgments are often made more rapidly than other-reference or semantic judgments (Keenan & Baillet, 1980; Rogers et al., 1977). In order to preserve the elaboration hypothesis, one has to sacrifice (as did Craik & Tulving, 1975) the intuitively attractive notion that degree of cognitive elaboration in a judgment task is proportional to the time taken to do the task.

Existing Cognitive Structure—Prototype.   One cognitive structure explanation for the self-reference effect treats self as a prototype (Rogers, 1981). In this interpretation, the task of judging trait adjectives for self-relevance makes salient their relation to the self-prototype. Later, the (assumed) pre-existing prototype structure can be used to guide recall of the set of judged items. Prior research on cognitive prototypes has shown that (i) items are judged rapidly as being members of a category to the extent that they resemble a prototype, or model instance, from which category members have been generated (e.g., Posner & Keele, 1968), and (ii) false recognition responses occur for not-previously-presented items that correspond closely to such a prototype (e.g., Bransford & Franks,

1971). Accordingly, the prototype interpretation is supported by findings of (i) relatively rapid judgments for the self-reference task and (ii) high false alarm rates in recognition tests for unpresented self-descriptive adjectives (Breckler & Greenwald, 1981; Chew, 1983; Kuiper & Rogers, 1979; Lord, Gilbert, & Stanley, 1982; Rogers, Rogers, & Kuiper, 1979). The prototype interpretation is further supported by the finding of superior recall of items judged as self-relevant compared to ones judged not self-relevant (Kuiper & Rogers, 1979; replicated by Breckler & Greenwald, 1981). At the same time, the prototype hypothesis is not well-suited to account for some of the variant self-reference effects that have been reported—especially ones that have used an episode-retrieval task (Banaji et al., 1933; Bellezza, 1983; Bower & Gilligan, 1979; Friedman & Pullyblank, 1982).

Existing Cognitive Structure—Internal Cues. A second cognitive structure hypothesis treats the self as an organized system that is capable of providing mnemonically useful cues, as in Greenwald's (1981) self/memory system and Bellezza's (1983) internal cuing hypothesis. In these hypotheses, material that is experienced in a self-relevant setting becomes associated with (ordinarily) covert or internal cues produced by the hypothesized cuing structure. Later recall is facilitated by using the cuing structure again, at the time of retrieval, to re-produce the cues earlier used in encoding. Both Bellezza and Greenwald have observed that this interpretation can be related to the operation of familiar mnemonic strategies (see Bellezza, 1981). The internal cuing hypothesis is supported by the (variant) self-reference effect findings of Bellezza (1983) and by the second-generation effect studies of Greenwald and Banaji (1983) and Greenwald et al. (1981).

Overview

Three interpretations—encoding elaboration, self-as-cognitive-prototype, and internal cuing—have been used successfully in explaining results of various self-reference experiments. The viability of three interpretations suggests that we should refer, not to *the* self-reference effect but, rather, to self-reference effects. The original self-reference finding of Rogers et al. (1977), using judgments of trait words, seems to be best explained by the self-as-cognitive-prototype hypothesis. Findings based on the encoding task of retrieving personal episodes (e.g., Bower & Gilligan, 1979), however, are better explained in terms of encoding elaboration. The third interpretation for self-reference effects — use of an internal cuing structure—fits well with the results of studies that have made self-produced cues overt (e.g., Bellezza, 1983). Far from being distressing, the viability of three explanations for self-reference effects helps to justify the concluding that relating information to self is a highly effective strategy for remembering.

Biases in Self-Relevant Judgment

And nothing, not God, is greater to one than one's self is.
(Walt Whitman, *Song of Myself*)

We can all benefit from seeing ourselves as we appear to others.
(Poor modern rendition of Robert Burns, *To a Louse*)

The Totalitarian Ego

In a recent review, Greenwald (1980) summarized evidence concerning the pervasiveness of three biases in self knowledge of the average normal adult of (at least) North American culture. These cognitive biases are (i) *egocentricity,* the tendency for judgment and memory to be focused on self, (ii) *beneffectance,* the tendency for self to be perceived as effective in achieving desired ends while avoding undesired ones, and (iii) *cognitive conservatism,* the tendency to resist cognitive change. The constellation of these three biases was labeled the "total-itarian ego," acknowledging that the biases match ones that are considered to be characteristic of the information control apparatus of a totalitarian dictatorship. The unattractive epithet, totalitarian, was intended to be provocative—a chal-lenge to understand why biases that are disparaged in a political system may be just the ones that are used to manage the personal flow of information. A brief overview of the evidence for each of the three biases follows.

Egocentricity. The egocentric character of knowledge is indicated, in part, by the self/memory effects just reviewed. Information that is related to self apparently has a privileged position in memory. A second type of evidence for cognitive egocentricity is the tendency to insert self into perceived causal se-quences, either as influencing agent (cf. Langer's, 1975, illusion of control) or as influenced object (Jervis, 1976, Chapter 9; Fenigstein, 1983; Zuckerman, Ker-nis, Guarnera, Murphy, & Rappoport, 1983).

Beneffectance. This term, which designates the bias of seeing the self as effective and competent, was compounded from beneficence (doing good) and effectance (competence). It was coined as an umbrella term to cover phenomena previously labeled as self-serving, egocentric, egotistic, and ego-defensive at-tributions by other writers. Four lines of research have demonstrated the per-vasiveness of this bias in the normal personality. These are (i) the tendency to recall successes more readily than failures (Glixman, 1949; Rosenzweig, 1943); (ii) the acceptance of responsibility for successes but not for failures on indi-vidual or group tasks (Johnston, 1967; Miller & Ross, 1975; Schlenker & Miller, 1977; Snyder, Stucky, & Higgins, in press; Wortman, 1976; Weary [Bradley, 1978]); (iii) denial of responsibility for harming others (Harvey, Harris, &

Barnes, 1975); and (iv) the tendency to identify with victors and to disaffiliate with losers ("basking in reflected glory"—Cialdini et al., 1976; Tesser & Campbell, 1983). Interestingly, the beneffectance bias is absent in depressives, who have been shown to perceive themselves more objectively or realistically (Alloy & Abramson, 1979; Lewinsohn, Mischel, Chaplin, & Barton, 1980). Evidently—and contrary to Robert Burns's famous poem that is paraphrased above—seeing ourselves as others see us is not necessarily a welcome gift.

Cognitive Conservatism.   Conservatism, in general, is the disposition to preserve what is already established. In perception, basic skills such as *object conservation* (perceptual constancy) and *assimilation* (reuse of existing categories) illustrate cognitive conservatism. Such conservative processes are widely regarded as functioning in the service of veridical knowledge. Two other conservative (change-resisting) processes, *confirmation bias* and *rewriting of memory*, appear to serve the interests of accuracy less well. Confirmation bias is apparent in (i) information-seeking strategies that selectively confirm initial hypotheses (Snyder & Swann, 1978; see also Darley & Gross, 1983; Swann, 1983); (ii) selective recall of information that confirms previously established beliefs (Mischel, Ebbesen, & Zeiss, 1976; Pratkanis, 1983; Snyder & Uranowitz, 1978; Swann & Read, 1981); (iii) selective generation of arguments that support opinions under attack (Greenwald, 1968; Petty, Ostrom, & Brock, 1981); and (iv) researchers' selective evaluation of their own data as a function of the data's agreement with their hypotheses (Greenwald, 1975). Rewriting of memory is evident in (i) systematic misrecall of prior opinions so as to obscure the occurrence of opinion change (Bem & McConnell, 1970; Goethals & Reckman, 1973); (ii) believing that newly acquired facts have had lengthy residence in memory (Fischhoff, 1977; Loftus, Miller, & Burns, 1978); and (iii) overestimating the validity of inaccurate memories (Trope, 1978). Rewriting of memory has the interesting characteristic of allowing the content of memory actually to change (for example, opinions may change or new facts may be learned), even while the larger system maintains an illusion of no change.

Functions of the Totalitarian Ego Biases

Greenwald (1980) observed that the egocentricity, beneffectance, and conservatism biases are found not only in totalitarian information control and in normal human cognition, but also in the development of effective theoretical paradigms in "normal" science (Kuhn, 1970). The association of these biases with the human self is made plausible by findings indicating that the biases are typically increased in strength by procedures that have been identified as "ego-involving" (Greenwald, 1980, pp. 610–611), and by the success with which Epstein (1973) and Loevinger (1976) used the metaphor of scientific theory in their discussions of the self. These arguments led to the following conclusion about the function of the egocentricity and conservatism biases.

The cognitive biases of a successful scientific paradigm or of an established totalitarian system presumably function to preserve organization. It follows that the corresponding biases in ego may similarly function to protect the integrity of ego's organization of knowledge. In particular, by coding much information in relation to self, the egocentricity bias ensures that the self-system maintains wide scope; this information-assimilating activity preserves organization in the same way that a library's maintenance depends on a continuing program of acquisitions. By retaining previously used cognitive categories, the conservatism bias ensures that similar information encountered at different points in time is encoded into the same categories; as with the library, such consistency of encoding over time preserves access to already stored information in a growing organization of knowledge. (Greenwald, 1980, p. 613)

Greenwald was unable to link beneffectance directly to the function of preserving organization, noting rather that this bias appeared to be "associated with effective performance in situations in which ~~preservance~~ *perseverance* might be the critical determinant of effectiveness" (p. 614; cf. Bandura's, 1977, concept of self-efficacy). It remains possible, however, that further research on the relationship between affect and cognition (Isen, this volume) will indicate that affectively positive self-regard serves a critical role in maintaining or expanding an organization of knowledge. (What we have in mind here is a possible intrapsychic analog of political phenomena such as the relation between nationalism and imperialism, or between nationalism and governmental stability.)

Implications for a Conception of the Self as Knower

Our decision to discuss memory strategies and cognitive biases under the heading of the *self as knower* was made without initially drawing attention to it. However, it would have been possible to consider these topics as manifestations of the *self as an object of knowledge*. That is, both the memory and cognitive bias results could have been treated as manifestations of the self as a data structure. One cannot, of course, avoid assuming that this data structure is used by some processes or activities, but it is not necessary to identify those activities with the self. The self could be identified just with the "passivities" of the data structure.

The question therefore arises: On what basis should one choose between attributing some cognitive function (such as the egocentricity of memory or the beneffectance bias) to structure rather than process? (The reader should be warned that the remainder of this section concerns issues that some will regard as more philosophical than psychological. It will become clear, however, that we find no basis for drawing a sharp line between the [philosophical?] self as knower and the [empirical/psychological?] self as object of knowledge.)

A Computer Metaphor

Our view on the allocation of function between self as knower and self as object of knowledge reflects two strong influences: (i) the distinction, made by

students of cognitive science and artificial intelligence, between procedural and declarative knowledge (e.g., Anderson, 1976, pp. 116–119), and (ii) the evolutionary epistemology analysis of knowledge (Campbell, 1974, 1979; Popper, 1935/1959).[2] From the perspective we adopt, the distinction of process versus structure interpretations is related to the interesting question of introspective access to mental functioning—a question that has been debated recently by Nisbett and Wilson (1977) and Ericsson and Simon (1980). A frequently stated position on the question of introspective access is that we have access to the products of cognitive process, but not to the workings of cognitive process (e.g., Mandler, 1975; Neisser, 1967; Nisbett & Wilson, 1977, p. 232). The view just stated is plausibly extended to say that we have access to the input and output of cognitive processing, in other words, to mental *data*. The cognitive processes to which we lack access, in the computer metaphor that we are falling into, correspond to the computer's *program*.

We propose to identify the self as knower with the program aspect of the computer metaphor, and the self as object of knowledge with data stored in the computer's memory. However, it remains to justify the metaphor. Let us start by appearing to undermine it. A problem with the metaphor is that the program/data distinction is not a sharp one. Because both program and data are represented by elements in the same medium (for example, bits in random access memory), program elements can be read as data. However, far from being a problem with the metaphor to self, the fuzziness of the program versus data distinction captures, as will be seen, an essential aspect of the distinction between self as knower and self as object of knowledge.

The computer metaphor is developed further in Table 4.2. By means of this metaphor, we identify the *subjective* aspects of the self with the self as cognitive *process* and hence with the *program* component of the computer. We identify the self as *object of knowledge* with the *content* of cognitive processes and hence with the (input, output, and stored) *data* aspect of the computer metaphor. Further, we shall use the customary assumption of lack of access to cognitive process to *define* cognitive process. Cognitive process (or the subjective aspect of the self, self as knower) is thus defined as those aspects of cognitive function to which we do not have introspective access. It remains for us to clarify the notion of introspective access.

If we could sort the cognitive domain sharply into introspectively accessible and inaccessible portions, our process/content distinction would also be sharp. However, we cannot, because the accuracy of introspection cannot be well-defined. That is, the accuracy of introspection can be defined only in terms of the extent to which introspective reports agree with psychological theory about the

---

[2]The procedural-declarative distinction and evolutionary epistemology are, themselves, products of many earlier influences that we shall not attempt to review. However, see the sources cited for references to earlier literature.

TABLE 4.2
Division between Self as Subject and Self as Object

	Self as Subject	Self as Object
COGNITIVE SCIENCE CATEGORIES	Procedural Knowledge	Declarative Knowledge
TERMS IN THE COMPUTER METAPHOR	Program	Input, Output, and Stored Data
COGNITIVE FUNCTIONS OF SELF	Egocentric Memory and Judgment	Self-Concept, Self-Image
INFORMAL TERMS	Mental Process Unconscious Skills	Mental Content Conscious Experience
PHILOSOPHICAL CATEGORIES	Self as Knower, I	Empirical Self, Me

corresponding functions. The accuracy assessment involves, in other words, a comparison between theories contained in self-report (the "naive" psychology of the subject) and those considered valid on the basis of psychological research. Neither of these theoretical endeavors—neither the naive nor the scientific—can be capable of certain knowledge. Accordingly, the boundary between mental process and content—like the boundary between computer program and data—is inherently fuzzy.

If, as psychologists, we had complete theories of memory and cognition, we should be able to regard the self fully as an object or structure—in other words, as legible, accessible mental content. We would not then be inclined to sort out some aspects of the self and declare them to be manifestations of a special entity, the self as knower. However, our understanding of the mental skills that produce (say) the egocentricity of memory and the totalitarian ego biases is decidedly imperfect. Accordingly, we (psychologists and nonpsychologists alike) experience a dichotomy or duality within the self. On the one hand are those aspects of the self that appear to be understood, that we can describe verbally to others—these we identify as the empirical self, the self-concept, or the self as an object of knowledge. On the other hand are those aspects of the self that we don't understand—for these the phrases, self as subject and self as knower, indicate our lack of comprehension. Table 4.2 summarizes the groupings of terms that we assimilate, respectively, to the subjective and objective aspects of the self.

Sensible Metaphors for the Self

The subject/object duality of self has long been an enigma to philosophers and psychologists. This enigma has sometimes found expression in a mirror metaphor. Interestingly, although mirrors have had productive use in recent empirical

investigations of the self (e.g., Gallup, 1977; Lewis & Brooks-Gunn, 1979; Wicklund, 1975), the metaphorical use of a mirror to represent subject/object duality has only been confusing, a point that was well expressed by Hilgard (1949):

> [The] self-evident character of self-awareness is in fact most illusive. You presently find yourself as between the two mirrors of a barber-shop, with each image viewing each other one, so that as the self takes a look at itself taking a look at itself, it soon gets all confused as to the self that is doing the looking and the self which is being looked at. (p. 377)

Recently, cognitive scientists have taken an interest in the self's paradoxical duality. Hofstadter (1979), in particular, has provided several new metaphors for the self, each more substantial and more stimulating than the mirror. Hofstadter's metaphors are characterized by complex self-reference, such as the DNA molecule that contains instructions for its own replication and Godel's theorem that asserts its own unprovability. Hofstadter's metaphors share the mirror metaphor's property of not clearly representing a separation between subjective and objective aspects of the self. A consequence is that they leave the experienced duality of the self a mystery, and thereby encourage the suspicion that the self as subject/knower is beyond the domain of scientific treatment. Our use of the program/data metaphor, interpreting these conceptually in terms of mental process versus content and procedural versus declarative knowledge, serves (we hope) to bring the self as knower within the domain of empirical psychology.

3. COGNITIVE ASPECTS OF SELF

In his 1943 review Allport wrote that "the existence of one's own self is the one fact of which every mortal—every psychologist included—is perfectly convinced" (p. 451). What is the nature of this self-concept that we all so certainly possess? James had divided the known self into three parts—material, social, and spiritual selves. Allport presented somewhat varying descriptions of the self in 1943, 1955, and 1961. Nevertheless, he was convinced of the uniqueness and the special importance of the self-concept. In this section we update James's and Allport's descriptions of the self as known, and we address two questions about the self-concept. First, what are its contents? Second, how are data about the self organized in memory? The attention we give to these questions reflects the emphasis in much recent research on cognitive models of the self. At the end of this section on cognitive aspects of self, we comment on the relation of the recent work on which our review focuses to the extensive body of earlier work.

Contents of the Self-Concept

McGuire and his associates (McGuire & McGuire, 1980, 1981, 1982; McGuire, McGuire, Child, & Fujioka, 1978; McGuire, McGuire, & Winston, 1979; McGuire & Padawer-Singer, 1976) have investigated the contents of the spontaneous self-concept, by categorizing responses to the query, "Tell us about yourself." This open-ended probe does not constrain the subject's response. Accordingly, the specific items of self-description elicited should represent the range and relative prominence of different categories of content in the self-concept. Among the responses to "Tell us about yourself," McGuire and Padawer-Singer (1976) found that children most frequently mentioned activities, significant others, and attitudes; to a lesser extent they included demographic characteristics, self-evaluations, and physical features. The obtained self-descriptions provided support for a distinctiveness principle—attributes that distinguish the self from others, either in the general population or in the specific testing environment, were especially likely to be mentioned.

Others have used more reactive techniques to assess individual differences in cognitive content of the self-concept. Markus has investigated individual differences in speed of judgments and accessibility of information on dimensions such as independence, gender role, and body weight, finding that efficiency of processing varies with the importance of the dimension to the subject (Markus, 1977; Markus, Crane, Berstein, & Siladi, 1982; Markus, Hamill, & Sentis, 1980). Kuiper and Rogers (1979) have similarly shown that information consistent with one's self-concept is judged and retrieved efficiently. Kuiper and his associates (reviewed in Kuiper & Derry, 1981) have applied these principles to demonstrate that the content of depressed persons' self-concepts, in contrast with that of normals, consists of data supporting a negative self-image. Linville (1982) reported that persons with complex self-concepts (that is, self-concepts having many distinct aspects) are more resistant to negative feedback and exhibit less variability of mood than do persons with cognitively simple self-concepts.

This recent research establishes that the cognitive content of the self varies across persons. However, that point hardly needed to be made. The major import of the recent research of McGuire, Markus, Kuiper and others is, rather, its development of techniques for assessing both the content of individual differences in self-concept and the cognitive function of those differences.

Models of the Cognitive Organization of Self

Self as a Central Structure

The psychic centrality of the self has been a frequent theme in theoretical discussions. Cooley (1902/1964) gives this description of the self's centrality:
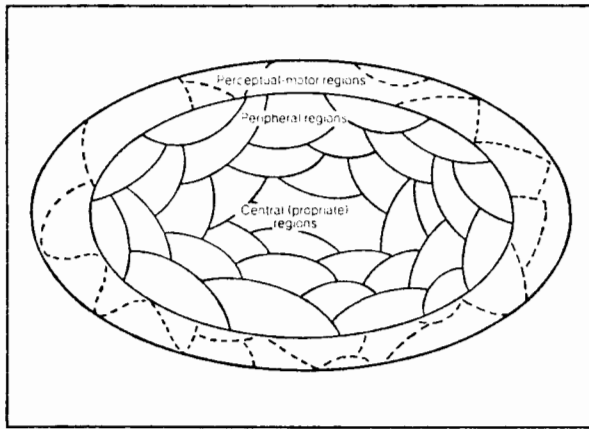
FIG. 4.1.   Allport's conception of the self-concept as the central region of per-sonality (from Allport, 1961).

"I", then, is not all of the mind, but a peculiarly central, vigorous, and well-knit portion of it, not separated from the rest but gradually merging into it, and yet having a certain practical distinctiveness, so that a man generally shows clearly enough by his language and behavior what his "I" is as distinguished from thoughts he does not appropriate. It may be thought of . . . under the analogy of a central colored area on a lighted wall. It might also, and perhaps more justly, be compared to the nucleus of a living cell, not altogether separate from the surround-ing matter, out of which indeed it is formed, but more active and definitely organized. (p. 182)

Claparède (1911/1951) similarly placed the self ("le moi") in the center of the psyche, as did Koffka (1935), both crediting the self with achieving the co-herence of experience and the persistence of personal identity through time. Combs and Snygg (1949/1959) state: "It [the self] provides the central core around which all other perceptions are organized" (p. 122). Figure 4.1 presents Allport's (1961) diagram of personality (developed from Lewin, e.g., 1936) as a series of regions with the central region being the proprium (Allport's term for the self or ego).

Recent Models—Schemata, Hierarchies, Prototypes, Networks, Spaces

Self as Schema.   Markus (1977; Markus & Sentis, 1982; Markus & Smith, 1981) views the self as a system of schemata. In this conceptualization, the self is a memory structure that consists of a collection of schemata, such as those suggested by the ellipses in Figure 4.2. Note that some of the schemata in Figure 4.2 (such as Ladders and Pentagrams) are not connected to the self. In other words, the person is aschematic for these concepts. Other schemata (such as
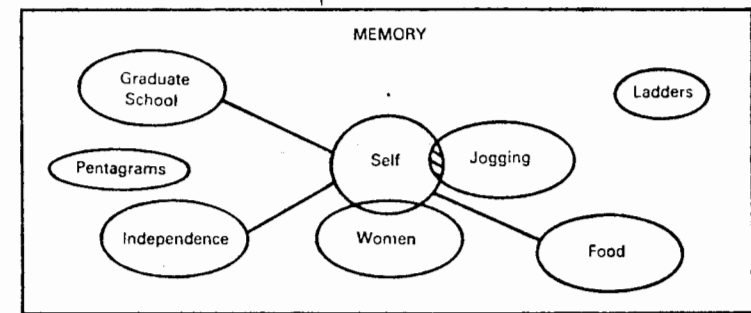

FIG. 4.2.   A hypothetical system of self-schemata (from Markus & Sentis, 1982).

Jogging and Independence) are related to the self in varying degrees (as indicated by their closeness to the self), meaning that the person is schematic on these characteristics.

In Markus's analysis, each schema is a generalization about the self and contains person-specific information about past experiences and personal charac-teristics. The specific organization of knowledge within a self-schema is not specified by Markus, although her definition of schema is based on Neisser (1976), who wrote:

a schema is like a *format* in a computer-programing language. Formats specify that information must be of a certain sort if it is to be interpreted coherently. Other information will be ignored or will lead to meaningless results. . . . A schema is not merely like a format; it also functions as a *plan*. . . . Perceptual schemata are plans for finding out about objects and events, for obtaining more information to fill in the format. . . . The schema is not only the plan but also the executor of the plan. It is a pattern *of* action as well as a pattern *for* action. (pp. 55–56)

The conception of the self as a system of schemata provides a welcome means of accommodating the self as knower alongside the self as object of knowledge. (See discussion of the subject/object distinction in Section 2.)

Self as Hierarchical Category Structure.   Rogers (1981), using a concep-tualization based on Rosch (1978) and Cantor and Mischel (1979), views the self as a cognitive category with internal hierarchical organization.

the elements . . . are self-descriptive terms such as traits, values, and possibly even memories of specific behaviors and events. These terms are ordered hier-archically, becoming more concrete, distinctive, specific, and less inclusive, with increasing depth into the hierarchy. Making a self-referent decision involves com-paring the stimulus item with [this structure] to determine if it "fits" into the structure. (p. 196)
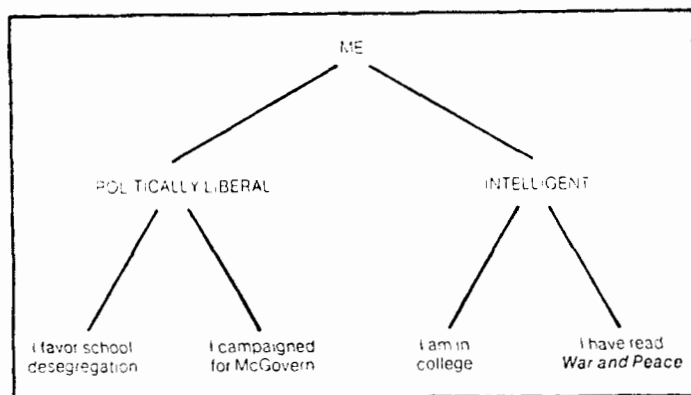
FIG. 4.3.   Illustration of a hypothetical fragment of a hierarchical model of the self.

Figure 4.3 presents a hypothetical instance of a fragment of the model suggested by Rogers. As an aside, we should note that Rogers uses the term "prototype" to describe this model. We have avoided using that term here, in keeping with a more generally accepted definition of a prototype as a model example for a cognitive category. Such a model example is sometimes considered as a unit, or as an unordered collection of features, and is not necessarily hierarchical in structure (Smith & Medin, 1981). Other hierarchical conceptions of the self have been offered by Epstein (1973) and by Carver and Scheier (1981).

Self as Prototype.   Various researchers have sought to demonstrate that latency and memory effects associated with judgments concerning cognitive prototypes occur also with judgments concerning one's self. Kuiper (1981), Breckler (1981), and Lord, Gilbert, and Stanley (1983) have found that self-referent judgments are made more rapidly for words extremely high or low in self-descriptiveness. This inverted-U effect resembles results found for judgments of similarity to best exemplars of a variety of cognitive categories (Rosch, 1973, 1975; Schnur, 1977; Smith, 1976). Rogers, Rogers, and Kuiper (1979) and Breckler (1981) have found that subjects give false alarm recognition responses to highly self-descriptive adjectives, again resembling an effect found in other domains for novel stimuli that resemble a prototype from which previously presented stimuli have been generated (Cantor & Mischel, 1977; Posner & Keele, 1970). These findings support the conclusion that the self-concept functions as a cognitive prototype—a category central tendency with which novel stimuli can be compared.

Self as Associative Network.   Bower and Gilligan (1979) have presented a model of the self-concept based on associative network models such as HAM
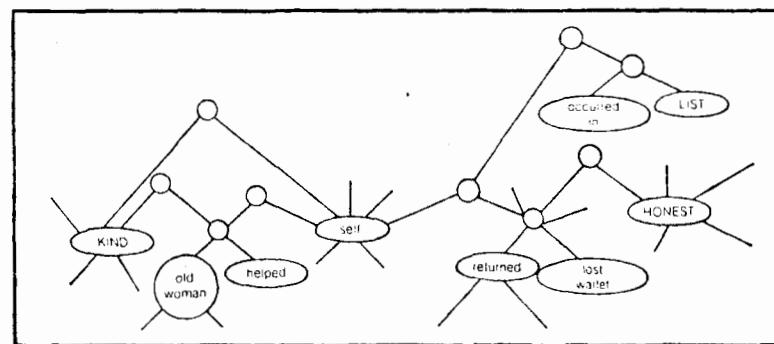

FIG. 4.4.   Hypothetical portion of an associative network model of the self-concept (from Bower & Gilligan, 1979).

(Anderson & Bower, 1973) and ACT (Anderson, 1976). Figure 4.4 shows a portion of such an associative memory network that can be identified with the self-concept. Information is stored in the form of propositions (represented by small circles in Fig. 4.4) that relate subject (in this case the self) and predicate (specific episodes and generic information about the self). Links (lines) represent logical relations among concepts and propositions (nodes). For example, a self-schematic trait of kindness is represented by a link between the self and the node for the concept, kind. A self-nonschematic trait is represented by the absence of a direct link between the self and the trait concept (for example, honest in Fig. 4.4).

Self as Multidimensional Space.   Breckler and Greenwald (1982) have developed a technique for representing the self in a multidimensional cognitive space. In their method a multidimensional trait space is first constructed, using trait similarity ratings for a group of subjects. Next, subjects are individually located in the trait space by placing them near traits that they rate as self-descriptive and distant from nondescriptive traits. Figure 4.5 presents a two-dimensional trait space that has a general evaluative dimension (horizontal) and an intellectual good/bad dimension (vertical). Persons are represented by open circles and are scattered through the space, representing individual differences in self-concepts relative to these dimensions. The location of self in this space has been related both to personality measures, such as self-esteem, and to differences in cognitive processing (see Breckler, Pratkanis, & McCann, 1983).

The Current Picture of the Self-Concept

The several models that we have reviewed provide structural descriptions with little, and sometimes no, specification of how the structure is used by judgment and memory processes. Such partially specified models readily survive empirical
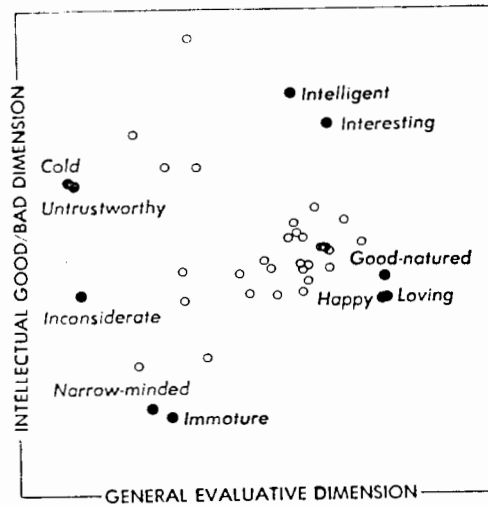
FIG. 4.5.   The self in multidimensional cognitive (trait) space, with open circles indicating person locations (from Breckler, Pratkanis, & McCann, 1983).

tests because of the ease with which processing assumptions can be added to accommodate diverse findings. As a consequence, the various attempts at describing the microstructure of the self-concept are for the present equally viable. This situation should not be regarded as distressing. The enterprise of testing theories of mental representation is in its infancy. The situation of a diversity of viable model representations of the self is similar to that for conceptual representations in other knowledge domains (Smith & Medin, 1981).

As a specific example of the current indeterminacy of microstructural models of the self, consider the attempt to use the "fan" effect as a basis for thinning the ranks of such models. A familiar prediction of associative network models, using a spreading activation concept, is that the more items of knowledge attached to a given point (node) in memory, the slower should be judgments or memory retrievals for which that node is an intermediary. (Judgment time is positively related to the spread, or fan, of links from a node used in the judgment—Anderson & Bower, 1973.) In associative network models, the self is considered to be a very richly connected node (Bower & Gilligan, 1979; Keenan & Baillet, 1980). Accordingly, Rogers (1981) suggested that associative network models of the self should be rejected, because the rapidity with which self-referent judgments are made is in direct opposition to this expected "fan effect." Despite this observation, it is not the case that network models of the self have failed. Anderson (1981) has provided a patch for the network model to handle a related point concerning the speed of expert judgments, raised by Smith, Adams, and Schorr (1978). The debate awaits further research (see Kihlstrom & Cantor, in press).

Despite the present indeterminacy of cognitive models of the self, recent modeling efforts have the virtue of having inspired research in several laborato-

ries, providing several new techniques for empirically investigating the self-concept. The accumulating results are producing a collection of specifications that a viable model of the self will have to meet.

As noted earlier, this review has ignored the voluminous research and theory on the self-concept that preceded very recent interest in cognitive models. Excellent reviews of earlier work can be found in Gergen (1971), Wylie (1974, 1979), Rosenberg (1979), Smith (1980), and Gecas (1982). Perhaps the most significant novel feature of the recent cognitive approach is the tendency to replace the notion of self-concept with that of self-schema. Whereas the self-concept is typically regarded as a passive data structure, consisting of the characteristics of the self, the self-schema is an active information processing structure. Compare, for example, Rosenberg's (1979) description of the self-concept—"the totality of the individual's thoughts and feelings having reference to himself as an object" (p. 7)—with Rogers et al.'s (1977) description of the self-schema as "deeply involved in the processing, interpretation, and memory of personal information" (p. 677). Epstein's (1973) interpretation of the self-concept as an active, information-gathering *theory* of the person's involvement in the world can be seen, in retrospect, as an early indication of the transition from self-concept to self-schema language.

4. AFFECTIVE ASPECTS OF THE SELF

Our remoter spiritual, material, and social selves, so far as they are realized, come also with a glow and a warmth.
    (William James, 1890, p. 333)

Since 'I' is known to our experience primarily as a feeling, or as a feeling-ingredient in our ideas, it cannot be described or defined without suggesting this feeling. There can be no final test of the self except the way we feel; it is that toward which we have the 'my' attitude.
    (C. H. Cooley, 1902/1964, p. 172)

Nothing, it is said, is ultimately sacred except the beloved ego.
    (Gordon Allport, 1937, p. 169)

The observation that the self engenders strong feelings—ones often characterized by passionate warmth—has been made not only by the writers quoted above, but also by contemporary students of the self (Epstein, 1973; Markus & Sentis, 1982; C. Rogers, 1951; T. B. Rogers, 1981). This self-feeling is, apparently, of great significance in guiding social interaction. As a small sample of the accumulated research that indicates relationships between self-esteem and social behavior: Aronson (1980, Chapter 7) and Tesser and Campbell (1983) have

shown that social attraction choices are very frequently made in a manner that maintains or enhances one's self-esteem; Costanzo (1970) has shown that persons high in self-esteem tend to resist conformity pressure; and Shrauger and Sorman (1977) and McFarlin and Blascovich (1982) have demonstrated that high self-esteem is associated with persistence at difficult tasks.

In this section we develop the view (advocated previously by Sherif & Cantril, 1947, and Rosenberg, 1967) that the prominent feeling component of self-regard justifies conceiving the self as an attitude object. We support this view by considering the important functions of the (usually positive) self-attitude and by pointing out the substantial parallels between self-relevant and attitude-relevant cognition. We conclude by noting that a conception of the self as an attitude object can be applied in the measurement of self-esteem.

The Self-Regarding Attitude

A Thought Experiment

Imagine that you are paralyzed from the neck down, but that, fortunately, you own a marvelous robot that responds to your spoken commands. It carries you from place to place, reaches for and picks up objects on your command, types in messages as you speak them, dials the telephone, feeds you, and (thank heavens) even disposes of the resulting digestive wastes. Would you do whatever you could to make sure that your robot stayed in good working order? (More properly, and interestingly, would you have *it* do what is needed to keep it in good working order?) Would you be upset to learn that others have robots that work better than yours? Would you develop a liking for the robot?

Perhaps you wouldn't expect yourself to take care of the robot, wouldn't be upset at attacks on its virtuosity, and wouldn't feel warmly toward it—*if* newer and better replacement models were available just for the asking. But, let's suppose that these robots are issued for life—if you lose or damage yours, you'll have to do (rather, not do) without it. The answers are now clear. You'd be a fool not to have the robot spend a substantial fraction of its time in self-maintenance. Also, because it is most unwelcome to hear that your robot is inferior, you might develop strategies for avoiding such reports, or for convincing yourself that any such reports must be in error. (For example, you might believe that the reports were originated by others jealous of your robot.) And you might well feel fondly toward your robot, although it's not yet clear what difference that might make.

Of course, this is only a thought experiment. You don't have such a robot—but you do have a much better device! Your body does everything that the robot does (and more) and is equally irreplaceable. Among the extra features of your body is its ability to "read your mind," and to upgrade itself by acquiring capabilities that weren't built in. Some of these skills are so remarkable that they

are given the special name, "mental" abilities. The whole package, physical and mental, is called your "self."

This thought experiment is intended to make it reasonable that people take care of their selves and have reason to think better of their selves than others may. But we wish to make the further point that self-regard has the properties of an attitude. Understanding this attitudinal function will help to explain the affective aspect of self-regard, the warmth of self-feeling that was remarked by James, Cooley, and Allport.

Attitudinal Properties of Self-Regard

The attitudinal nature of self-regard can be established by identifying parallel findings in attitude research and research on the self. The search for such parallels is hampered by the fact that different problems have been studied and different research designs have been used in the two areas. Nevertheless, the evidence that does exist establishes several parallels, and provides a basis for expecting that additional research will reveal more.

Parallels Between Attitudinal and Self-Relevant Judgment Latencies. As noted in Section 3, several studies have shown that, in judging traits for self-descriptiveness, the most rapid judgments occur at the rating extremes—an inverted-U effect for judgment times as a function of degree of self-descriptiveness (Breckler, 1981; Kuiper, 1981; Kuiper & Derry, 1981; Lord et al., 1983). Judd and Kulik (1980) have reported the same pattern of results with attitude statements—more rapid responses for judgments of high or low agreement than for moderate agreement.

Parallels Between Attitudinal and Self-Relevant Memory. In some of the above studies of judgment latencies, unexpected tests for recall or recognition of the previously judged items have been administered. For attitudinal judgments, Judd and Kulik (1980) found that this incidental recall was better for items at the extremes of agreement and disagreement. Similarly, Dutta and Kanungo (1967) have reported that both affectively positive and affectively negative items are remembered better than neutral items. These bipolar results are paralleled by Breckler and Greenwald's (1981) finding of more false alarm recognition responses for traits that were at the self-descriptiveness extremes (as determined by judgments made after the recognition test). However, bipolar facilitation effects are not the rule. A unipolar false alarms effect, focused on highly self-descriptive traits, was found by Rogers, Rogers, and Kuiper (1979). Breckler and Greenwald (1981) also found that false alarms were greater for highly self-descriptive than for highly nonself-descriptive traits. In the attitude literature, the unipolar effect has also been found (e.g., Jones & Kohler, 1958; Levine & Murphy, 1943; Pratkanis, 1983; Read & Rosson, 1982). Another parallel occurs in the discovery

that the tasks of judging traits for their evaluative (i.e., attitudinal) qualities or for their descriptiveness of well-liked others (themselves objects of a positive attitude) produce incidental memory effects comparable in strength to those obtained with self-descriptiveness judgments (Ferguson, Rule, & Carlson, 1983; Friedman & Pullyblank, 1982). In a related finding, Pratkanis (1983) found that an attitude-reference judgment task produces results parallel to the self-reference task. That is, judging whether a word is relevant to an attitude topic yields better subsequent incidental recall in subjects who have an attitude on the topic than among subjects who have no attitude. As a final parallel, the technique of spontaneous retrieval from memory has been successful in producing assessments of both the self-concept (e.g., Markus, 1977; McGuire & McGuire, 1982) and attitudes (Cullen, 1968; Greenwald, 1968).[3]

Parallels Between Cognitive Defense of Attitudes and of Self-Concept. In attitude research a listed-thought technique has been used to examine subjects' cognitive reactions to persuasive communications. A very reliable finding is that the evaluative content of these reactions can be well predicted from knowledge of the subject's existing attitude on the communication's topic (Greenwald, 1968). Cognitive reactions to a communication, in other words, defend the existing attitude. A parallel exists in research that examines subjects' explanations (attributions) for a successful or unsuccessful performance. Normal subjects, who have favorable self-regard, attribute the failure to bad luck or to external factors such as the actions of others or the poor quality of a test, deftly avoiding the implication that the failure reveals a defect of the self (see Snyder et al., in press, for a recent review of this excuse-making process). This cognitive defense of the self is remarkable for its absence in depressives, who apparently do not have a positive self-concept to defend (Alloy & Abramson, 1983).

Summary. Perhaps, in citing the parallels between attitude and self-concept research, we have strained to establish a point that is self-evident. After all, social psychologists have long treated persons other than the self as attitude objects and have considered ego-involved attitudes as a particularly important topic of investigation (Ostrom & Brock, 1968; Sherif & Hovland, 1961). Why not treat the most ego-involved object/person, one's self, also as an attitude object? Perhaps the only remaining problem in declaring that the self is an attitude object is to define that object. Consider that, in discussing attitudes, one ordinarily treats the attitude object as a consensually shared category that is not in

need of definition—whether it be a person, an ethnic group, a commercial product, or a policy issue. Such implicit definition of the attitude object, however, will not do for the self. As established in Sections 1 and 3 (and also in Section 5, below) the self-concept is complex in content and varies from person to person. Thus, although we can identify the self as an attitude object, it is a decidedly uncommon one that is different for each person.

Why is Self-Regard (Or Any Other Attitude) Affective?—Affective Heuristics

Three Components of the Self-Attitude. The purpose of the thought experiment that opened this section was to establish that maintenance and protection of one's body is sensible from a biological perspective; traits that achieve these effects should be selected in evolution because they increase the likelihood of survival to reproductive age. This reasoning suggests a plausible basis for behavioral self-care such as grooming, exercising, and feeding. It also provides a justification for behavioral and cognitive strategies that permit anticipation and avoidance of stress. These "self" defenses may reasonably be interpreted as behavioral and cognitive components of an attitude toward the self. But, in the familiar three-component definition of attitude, the central component of an attitude is the remaining one, affect or feeling. In the case of the self-attitude, also, affect is obviously present (see quotes at the beginning of this section).

Why Affect? What is the function of self-feeling? It is hard to credit affect directly with any maintenance or protection function and, therefore, difficult to understand why affect is so prominent in self-regard (or, for that matter, in other attitudes). That is, if we properly care for and protect ourselves and the other important persons and objects in our environment, why should it matter whether or not we have warm feelings toward them? In order to answer this question we appeal to, and extend, the controversial arguments of Zajonc (1980). (See Lazarus, 1982 and Mandler, 1982, for some of this controversy.) Zajonc reviewed a variety of evidence indicating that affective reactions to stimuli occur very rapidly and appear not to be mediated by knowledge retrieval or judgment. As he put it—and this was the controversial point—"preferences need no inferences."

Adaptive Significance of Affect. When an affect-arousing stimulus is encountered, this stimulus controls attention (Deutsch & Deutsch, 1963) and therefore leaves little capacity available for judgment. In this situation, immediately elicited affect may help to guide an adaptive response. Affect, that is, may serve as an efficient, or heuristic, guide to behavior. In suggesting this hypothesis, we are guided by the influential work of Tversky and Kahneman (1974) and Nisbett and Ross (1980) on cognitive heuristics. Affective reactions to persons or objects, we propose, guide behavior by assigning the object either to a positive class, for which a favoring heuristic (approaching, helping, protecting) is applicable, or to a negative class, for which a disfavoring heuristic (avoiding,

---

[3]Despite these parallels, other tests of selective recall hypotheses in the self-concept and attitude domains have produced complex findings that have yet to be encompassed within a well-organized explanatory framework. In the area of self-relevant memory, problems have long been apparent in the confusing data on recall of successes and failures for ego-involved performances (see, e.g., Greenwald, 1982a). The attitude literature contains reports of both bipolar and unipolar facilitation effects, along with findings of no attitude facilitation of recall (e.g., Greenwald & Sakumura, 1967; Waly & Cook, 1966).

neglecting, harming) is used. Affective heuristics very likely extend to thought, such that object-relevant knowledge seeking, interpretation, retrieval and imagination fall into distinct patterns as a function of the positive or negative affective reaction to the object (or person). However, such affective guidance of cognition, even though a topic of long interest to psychologists (see Isen, this volume; Rapaport, 1942/1971), is not yet understood well enough to permit confident delineation of such heuristics.

Implications for Measuring Self-Esteem

The enterprise of measuring affective self-regard, or self-esteem, has been broadly criticized for inattention to conceptual underpinnings, psychometric technique, and empirical validation (Wylie, 1974, 1979). At the same time, several self-esteem measures have been used successfully in research—that is, they have yielded interpretable correlations (for example, Coopersmith, 1967; Helmreich, Stapp, & Ervin, 1979; Janis & Field, 1959; Rosenberg, 1965; see also the capsule review of measures in Robinson & Shaver, 1973). Our analysis suggests the wisdom of applying the well-established technology of attitude measurement (e.g., Edwards, 1957; Fishbein, 1967) to self-esteem assessment. Of the many existing self-esteem measures, however, only one (Rosenberg, 1965) has made use of the conception of self-esteem as an attitude.

The application of attitude-scaling techniques to self-esteem is, regrettably, not an entirely straightforward matter. Two problems must be dealt with. One is the possibility that subjects may report a more positive self-image than they privately experience, in the hope of producing a favorable impression on the tester. This problem is a routine one in personality measurement. However, it takes a special twist in the case of self-esteem measurement because the wish to present a desirable image to others is, itself, an aspect of self-esteem. The second problem, briefly alluded to earlier in this section, is more troublesome. It is the problem of defining the unique self-concept that serves as the attitude object for each respondent. The problem of identifying the uniqueness of each subject's self in the reactive format of psychometrically based tests is formidable. Thus, it may be a long time before it is possible to improve on test items that simply refer, in a nonspecific way, to "yourself" (or, if in the first person, "myself"), allowing the respondent to provide the necessary person-specific interpretation.

5. CONATIVE ASPECTS OF SELF—SELF AS TASK ORIENTATION

The social self . . . ranks higher than the material self. . . . We must care more for our honor, our friends, our human ties, than for a sound skin or wealth. And the spiritual self is so supremely precious that, rather than lose it, a man ought to be willing to give up friends and good fame, and property, and life itself.

(James, 1890, pp. 314–315)

The employer thinks that wages and security are the dominant desires, whereas in reality the ego-satisfactions are primary. What a different outlook there would be on our economic life if we took firm hold on the issues of status and self-respect in industry, and re-planned our industrial society in a manner that would rescue the worker's ego from oblivion.

(Allport, 1943, p. 472)

James and Allport, as these quotations illustrate, view the self as the focus of motivations that ordinarly outweigh bodily needs and material desires. In this section we take as points of general consensus among theorists of human motivation that (i) the most important endeavors of a normal adult human cannot be explained by reduction to organic or tissue needs, and (ii) these important concerns vary from person to person. The question we then address is whether the concept of self is indeed useful (as James and Allport suggest) in accounting for these "higher" human motives and their variation across persons.

Ego-Involvement

Allport, in 1943, used the concept of ego-involvement to describe the role of self in behavior directed toward important goals. In 1955, he replaced ego-involvement with the term, "propriate striving," to express the conative aspect of self. (Allport had coined "proprium" as a pointed counter to the apparent backward-facing world view of behaviorism's *reactive* concepts, such as reflex response, recognition, and the like. He wanted a *proactive* term to convey the idea that the person is typically forward-looking and future-oriented.) At present it is ego-involvement, not propriate striving, that survives—but with an uncertain status. As observed by Greenwald (1982a), by the early 1960s the concept of ego-involvement had become difficult to use in the main area of research in which it had been applied—memory for experiences of success and failure. Part of the difficulty was that ego-involvement had, apparently, developed three meanings:

Ego-involvement$_1$. Concern about public impression, or evaluation by others; similar to evaluation apprehension, need for approval.

Ego-involvement$_2$. Concern about private self-evaluation; similar to need for achievement.

Ego-involvement$_3$. Personal importance, linkage to central values.

One might imagine that it would be conceptually fatal for a term to vary so in meaning. However, the different senses of ego-involvement may successfully correspond to individual differences in important motivational concerns. Greenwald related the first two senses of ego-involvement to the recently developed concepts of public and private self-awareness/self-consciousness (Buss, 1980; Fenigstein, Scheier, & Buss, 1975; Scheier & Carver, 1981), and set them in a framework for analyzing person-situation interactions, *ego task analysis*. Greenwald and Breckler (in press) extended ego task analysis to include the third type

of ego-involvement. We use their scheme to organize a review of recent research on conative aspects of the self.

Ego Task Analysis—Facets of the Self

An ego task is an important, persisting task that provides a basis for self-evaluation. Ego tasks take precedence over other tasks, and are not terminated by successes—they continue to be important because self-evaluation is a lifelong enterprise. Greenwald and Breckler (in press) used ego task analysis to identify four *facets of the self* that may be said to be engaged in ego tasks. These four facets (or subselves) are presented in Table 4.3.

The *diffuse self* is, in some senses, a pre-self, a condition of not distinguishing sharply between self and others, with behavior hedonically guided toward positive affective states. The *public self* is sensitive to the evaluations of others and seeks to win the approval of significant audiences of parents, peers, and authorities. Developmentally, the public self depends upon achievement of a cognitive discrimination between self and others, and an ability to attend to those aspects of one's behavior that are also noticed by others. The ego task of the public self can be described, in part, as social accreditation—that is, earning credit in exchange relationships with others. However, another important aspect of the public self's task is to internalize the evaluative standards of significant others. This self-definition aspect of the public self's task can lead to development of the *private self*. By providing an inner audience for behavior, the private self permits self-evaluation to proceed in the absence of others. We designate the private self's ego task as individual achievement, with "achievement" being used, in the sense of McClelland, Atkinson, Clark and Lowell (1953), to indicate guidance by internal standards. As a further developmental step, the goals of groups with which the person is identified (reference groups) become internalized, yielding the *collective self*. The collective self's task is also an achievement task, contributing toward a reference group's attainment of its goals.[4]

Strategies in the Service of Ego Tasks

Winning a Nobel Prize or an Olympic gold medal are, we would guess, strongly satisfying experiences. Perhaps they are so satisfying because they simultaneously serve the interests of a public self, a private self, and a collective self. That is, they simultaneously earn the approval of others, achieve success by personal standards, and signify fulfillment of a reference group's goal. (Perhaps we should have said "co-winning a Nobel Prize.") Many everyday achieve-

---

[4]Our speculation that the four facets of self develop in the left-to-right order of Table 4.3 is, we should note, partly at odds with others' suggestions that the private self developmentally precedes the public self (Buss, 1980; Cheek & Hogan, 1983; see Loevinger, 1976, for a broad review of theories of ego development).

TABLE 4.3
Interrelation of Facets of the Self, Ego Tasks, Personality Measures, Experimental Procedures, and Performance Strategies

| | Facets of the Self | | | |
	Diffuse Self	Public Self	Private Self	Collective Self
EGO TASK DESIGNATION	hedonic satisfaction	social accreditation: self-definition	individual achievement	collective achievement
BASIS FOR SELF-EVALUATION	attainment of positive affect	approval of others (outer audience)	internal standards (inner audience)	internalized goals of reference group
INDIVIDUAL DIFFERENCE MEASURES OF TASK ORIENTATION		Public Self-consciousness; Need for Approval; high Self-monitoring	Private Self-consciousness; Need for Achievement; low Self-monitoring	
SITUATION INDUCERS OF TASK ORIENTATION	anonymity in group; drug intoxication	minority status in group; solo before audience; camera; public failure	privacy; exposure to performance replay; mirror; private failure	reference group salience; cohesive group; superordinate goals
STRATEGIES IN SERVICE OF TASK	norm violation	conformity; obedience; opinion moderation; basking in reflected glory	independence; defiance; opinion resistance	

ments, similarly, simultaneously serve two or more ego tasks. Examples are being promoted in one's job, earning a college degree, winning in competitive sports, and raising children. If all human endeavors simultaneously pleased inner and outer audiences and achieved group goals, we could be sure that the ego task analysis of Table 4.3 would be useless. But that is not the case. And, interestingly, some of the everyday activities that focus on single ego tasks correspond well to tasks that have been cultivated for use in the social psychological laboratory.

The procedures of experiments on conformity, obedience, and persuasion characteristically put the subject in a dilemma that pits the public self against the private self. That is, concern about approval by an audience pulls behavior in one direction at the same time that the attempt to adhere to personal standards pulls in the opposite direction. In these experiments, the audience pressure often leads the subject to give in to a source of influence that would be resisted with less pressure.

The Diffuse and Collective Selves.   The pattern of entries in Table 4.3 indicates that the facets identified as diffuse and collective selves have been relatively neglected in social psychological research. Nevertheless, there is sufficient evidence to justify their inclusion in Table 4.3, and to encourage further research efforts. The diffuse self has been investigated in research on deindividuation. Previous reviewers' observations about paradoxical aspects of deindividuation (Diener, 1977, 1980; Dipboye, 1977; see also Zimbardo, 1969) were summarized by Greenwald (1982a):

> Deindividuation is sometimes associated with loss of identity but other times with acquisition of identity via a distinctive group (of which one is an indistinguishable member); it is sometimes sought but other times avoided; and it is sometimes associated with chaotic, norm-violating behavior but other times with conforming, uniform behavior. (p. 172)

This paradox can be resolved with the aid of the distinction between the diffuse and the collective selves. All deindividuation procedures, including anonymity, alcohol intoxication, and strong stimulation, reduce the salience of internal standards. However, some deindividuation procedures can make the subject's participation in a reference group salient—for example, being among a crowd of cheering fans at a football contest. These group-salience procedures can engage the collective self, leading to coordinated or norm-adhering behavior. Greenwald suggested that the term ''deindividuation'' be restricted to procedures that elicit norm-violating behavior—ones that, in Table 4.3's terms, invoke the diffuse self.

The collective self has received relatively little attention from social psychologists, apart from the contributions of Muzafer Sherif and his coworkers. Sherif and Cantril's (1947) description of ego-involvement stressed participation in

causes that give the individual ''some relative role with respect to other individuals, groups, or institutions'' (p. 96). And the famous Robbers' Cave experiment of Sherif, Harvey, White, Hood, and Sherif (1961) stands as a relatively isolated, but nevertheless convincing, plea for the usefulness of collective (superordinate) goals in overcoming intergroup hostility. The concepts of impulsive and institutional aspects of self in the work of the sociologist, Turner (1976), correspond in part to the present analysis's diffuse and collective aspects of self.

Personality and Situation as Determinants of Ego Tasks

Consider an experimental subject who is confronted with the conflicting pressures of outer and inner audiences—perhaps a subject in Milgram's (1963) obedience experiment who has been asked to inflict severe shocks on a participant in a learning experiment. What determines whether this subject will obey or defy the experimenter's authoritative request? One determinant is the relative strength of the subject's *personality* dispositions to engage in the ego tasks of the public and private selves. If the subject is guided more strongly by the standards of others than by internalized standards, then we should expect him to obey. The more the subject is guided by internal standards (which are assumed to include restraints against harming innocent others) the more likely it is that he will defy the experimenter's request.

A second determinant of obedience versus defiance in the obedience experiment is the extent to which the *situation* evokes the ego tasks of the public versus the private self. For example, if the subject is alone, in a room separate from the obedience-requesting authority, the approval of the authoritative experimenter is less salient. This should reduce the tendency for concerns of the subject's public self to be engaged. The expected result is greater defiance, which is in fact observed (Milgram, 1974).

Lastly, we can expect an interaction of features of the situation and characteristics of persons. For example, a subject who is strongly guided by internalized principles may be relatively little affected, in the obedience experiment, by the difference between the authority being immediately present and distant. In contrast, a subject for whom the public self is strong should be very sensitive to this same variation.

Individual Differences in Orientation Toward the Public and Private Selves

Public and Private Self-consciousness.   Fenigstein, Scheier, and Buss (1975) developed a scale that provides separate measures of consciousness of the public and private facets of self.[5] Fenigstein et al. define the public self as

---

[5]The analyses of public and private aspects of self by Fenigstein, Scheier, and Buss (1975), Buss (1980), and Scheier and Carver (1981) based on the earlier self-awareness theory of Duval and

consisting of observable self-produced stimuli, such as physique, clothing, grooming, facial expression and speech; the private self consists of self-produced stimuli that are not publicly observable, such as internal bodily sensations, emotional feelings, thoughts, and self-evaluations (see also Buss, 1980). Fenigstein et al. interpret public and private self-consciousness as predispositions to *attend* to public and private aspects of the self, respectively. In contrast, ego task analysis makes *evaluative orientation* toward outer versus inner audiences central to the public versus private contrast. Perhaps Fenigstein et al.'s Self-consciousness Scales, even though designed to assess attention to public and private aspects of the self, also measure the evaluative orientations toward the ego tasks of the public and private selves—that is, orientation toward the standards of others versus internalized standards. This is plausible, because persons concerned about evaluations of others may attend selectively to the aspects of themselves that are noticed by others, and those guided by internalized standards may be attentive to private stimuli and thoughts.

The usefulness of the Public and Private Self-consciousness Scales as measures of ego task orientations is indicated by the findings of a few studies in which subjects have been put in situations of social pressure. Scheier (1980) found that opinion moderation in anticipation of a discussion was greater for subjects high in Public Self-consciousness than for ones low in Public Self-consciousness. Scheier and Carver (1980) found that resistance to the opinion change effects of a counterattitudinal role playing procedure was associated with high scores on Private Self-consciousness; in contrast, expression of opinion change in this situation (interpreted as an impression management strategy of maintaining consistency) was associated with high scores on Public Self-consciousness. Froming and Carver (1981) found that subjects high in Private Self-consciousness were more likely to resist group pressure than were those low in Private Self-consciousness (see also Santee & Maslach, 1982). In an experiment in which women subjects were deliberately ignored by two peers holding a conversation, Fenigstein (1979) found that those high in Public Self-consciousness were most sensitive to this rejection.

Self-monitoring. Snyder's (1974) Self-monitoring Scale may also be relevant to the motivational orientations of the public and private facets of the self. Snyder conceives the high self-monitoring person as one who is attentive to interpersonal cues. The high self-monitor therefore shares the outward orientation of the public self. In support of this interpretation of the high self-monitor is Leary, Silver, Schlenker, and Darby's (1982) identification of a substantial

portion of the Self-monitoring Scale's items with a factor of public impression management. On the other hand, the low self-monitor is conceived as a "principled self" (Snyder & Campbell, 1982) who is relatively inattentive to interpersonal cues, a characteristic shared with our hypothesized private facet of the self. These interpretations of the Self-monitoring Scale place the public and private facets of the self at opposite ends of the scale. Thus, if the Self-monitoring Scale does assess the public and private ego task orientations, it may do so by assessing the relative strengths of these two orientations, rather than by measuring either separately.

Need for Achievement. McClelland et al. (1953) formulated the construct of need for achievement as a measure of motivation to excel in relation to internal standards. If need for achievement is indicative of orientation toward an inner audience, then subjects high in need for achievement should, like ones high in Private Self-consciousness, be resistant to group pressure. McClelland et al. reported such a finding (1953, p. 287).

Need for Approval. Crowne and Marlowe (1964) formulated their Social Desirability Scale as a measure of need for approval, defined as concern about evaluation by others. Strickland and Crowne (1962) reported that high scores on the Social Desirability Scale were associated with responsiveness to a social influence attempt. This is consistent with an interpretation of the Social Desirability Scale as a measure of the motivational orientation of the public self.

Situational Influences on the Public and Private Selves

Being in the presence of an audience, a camera, or a mirror tends to make one self-aware. However, according to both recent self-awareness theory (Buss, 1980; Carver & Scheier, 1981; Scheier & Carver, 1981) and ego task analysis, these states of self-awareness are not all equivalent. An audience or a camera should selectively engage the public facet of the self, whereas a mirror (providing a private reflection of performance) engages the private facet.[6] Therefore, a camera and a mirror should produce opposite effects in social pressure situations. The camera should make subjects more sensitive to the influence of others, whereas the mirror should enhance the guidance of behavior by internalized standards, yielding resistance to influence. Confirmation of these expectations has been obtained by Froming, Walker, and Lopyan (1982), and Scheier and Carver (1980). (See Scheier & Carver, 1983, for a more thorough review of relevant studies.)

---

[6]Buss (1980) suggests that only small mirrors engage the private self, and that large mirrors should, instead, make the public facet salient.

Relative Strength of the Public and Private Facets of the Self

Self-presentation theorists (Baumeister, 1982; Goffman, 1959; Jones & Pittman, 1982; Schlenker, 1980) have stressed the importance of the public facet of the self. Much of what is done in public, they urge, is in the interest of the social accreditation (or impression management) task of the public self. The implication, perhaps clearest in Goffman's treatment, is that the person typically presents to others only a superficial mask, a prettied image that is not believed by the presenter, but (the presenter hopes) will nevertheless be accepted at "face" value. Ego task analysis prompts some hesitation in fully accepting this view. Consider that when people act in interpersonal settings, they remain in the presence of the inner audience (which is quite portable). Therefore, they should be under a continuing constraint to adhere to internal standards, even while trying to win the approval of others. Further, if people believe that *they* typically misrepresent *themselves* to others, they should be unlikely to accept the self-presentations of others at face value, and self-presentations should tend to be ignored. Of course, in some situations self-presentations are indeed received skeptically—for example, in employment interviews (cf. Nisbett & Ross, 1980, p. 290). However, other than in such instances of exceptional pressure to make an impression, self-presentations do seem often to be trusted and trustworthy.

Researchers interested in impression management (e.g., Schlenker, 1980, in press) have been especially concerned that the typically favorable self-descriptions that research subjects provide reflect only a public self, and misrepresent the private facet. Reassuringly, however, three types of evidence indicate that the self-presentations offered by subjects in experiments—self-enhancing though they may be—do often reflect the private self. First, self-presentations obtained in privacy, with assurances of anonymity, tend to be just as self-enhancing as those obtained under public reporting conditions (Arkin, Appleman, & Burger, 1980; Frey, 1978; Greenberg, Pyszczynski, & Solomon, 1982; Schlenker, 1975; Schlenker, Hallam, & McCown, 1983). Second, the strong honesty constraint introduced by Jones and Sigall's (1971) bogus pipeline procedure (see also Quigley-Fernandez & Tedeschi, 1978) does not diminish the self-enhancing quality of self-presentations (Riess, Rosenfeld, Melburg, & Tedeschi, 1981). And, third, the fact that self-favorable judgments tend to be delivered more rapidly than self-unfavorable ones (Breckler & Greenwald, 1981) suggests that subjects are not engaging in deliberate (and presumably time-consuming) efforts at fabrication. (See Greenwald & Breckler, in press, for a more detailed discussion of these findings.)

Implications for the Role of Self in Human Motivation

The case for an important role of the self in human motivation has gained considerably since 1943, when Allport believed that the evidence was already compelling. The argument that the self should figure prominently in accounts of

human motivation now has the added support of a recent, massive accumulation of evidence for the conclusion that favorable self-evaluation is an important and enduring goal of human action. Recent research on self-presentation, self-consciousness, ego-involvement, and self-esteem maintenance has established, further, that favorable self-evaluation has multiple roots.

We have attempted to characterize the complexity of the bases of self-evaluation by recognizing four types of ego tasks, and associating each with a distinct facet of the self—the diffuse self, the public self, the private self, and the collective self. Orientations toward the ego tasks of these four subselves vary from person to person, presumably as a function of developmental experiences that have yet to be analyzed fully. Additionally, the temporary strength of each facet of the self varies under the control of situational elements. These person and situation variations have been the focus of recent study, particularly for public and private facets of the self.

6. CONCLUSIONS

In 1890, William James sought to bring the self firmly within psychology by arguing that unity and continuity of experience are aspects of the empirical self—properties of the stream of thought. However, James's argument—more properly, his assertion—was not generally accepted. In 1943, Gordon Allport argued for the self's good standing in psychology by documenting a wide variety of dramatic effects resulting from procedures that made experimental tasks important to subjects. Allport credited these effects to ego-involvement, which he defined as "a condition of total participation of the self." The evidence of history is that academic psychology did not accept Allport's argument. Much as Allport, in 1943, could credit psychoanalytic theory with "having preserved and advanced the study of certain functions of the self that postivistic psychology had consigned to oblivion" (p. 453), so can we now credit a variety of factions within the field of personality theory with having performed a similar function for much of the 40 years since Allport's review.

Perhaps the self would have achieved greater acceptance if its adherents had provided coordinated conceptual definitions and research procedures. However, there has never been much coordination between theory concerning the self and data collection. For example, the research procedure most commonly connected to the idea of self prior to about 1975—the use of skill-test instructions to produce ego-involvement—was never well tied to a theory of the self. The description of the skill-test procedure as ego-involvement had been generally abandoned by the early 1960s, a victim of theoretically irreconcilable conflicts among findings (Greenwald, 1982a; Iverson & Reuder, 1956; Van Bergen, 1968).

Has the situation changed? The best indication of a genuine new direction is the wide variety of recent findings that have been described in terms of newly

introduced self-related concepts. Among these new procedures are ones that have been described as self-reference in memory, self-serving attributional bias, self-awareness, self-consciousness, self-verification, self-presentation, spontaneous self-concept, self-schema, and self-monitoring. But the lesson of history is that such research activity is not enough. Without an integrative conceptual scheme, critics will suggest that the "self-" with which these concepts start is merely a distracting speech defect, endemic to social and personality psychologists.

Accordingly, the argument that the self is, at last, ready for good standing in psychology requires an accompanying conceptual integration. Our review has been organized toward this end. The major points of this integration have been distributed among the preceding four sections. We now bring them together, and then conclude by summarizing the answers that this conception provides for several major questions that have traditionally surrounded the idea of a self.

The Self is a Complex, Person-Specific, Central, Attitudinal Schema

The major conclusions of our review has been:

1. The self as a knower is accessible to psychological investigation.
2. The self is a central cognitive structure, a self-concept with content that varies from person to person.
3. The self is a focus of affective regard—in other words, an attitude object.
4. The self is complex, consisting of diffuse, public, private, and collective facets, each providing a distinct basis for self-evaluation. The relative strengths of these facets, or subselves, vary as a function of person and situation.

Perhaps the most prominent feature of the self is the positive affect that is normally attached to one's own actions, attitudes, attributes, and memories. The self is thus the object of an *attitude*. But it is also an active, functioning organization that both acquires and retrieves knowledge. To include these (self-as-knower) properties we conceive the self not simply as an attitude object, but as an attitudinal *schema*.

We describe the self as a *central* attitudinal schema to indicate its importance relative to other schemata, and to acknowledge the many theoretical statements that, although differing in details, have credited the self with a central position in a larger cognitive structure. The self's mixture of cognitive, affective, and conative properties, and its multifacetedness—its mixture of the diffuse, public, private, and collective orientations—warrant its characterization as *complex*. And, lastly, the variable content of the self—individual differences in self-concept, in self-esteem, in motivational orientation, and in cognitive biases— oblige us to characterize the self as *person-specific*.

Our conception of the self as a complex, person-specific, central, attitudinal schema is, itself, complex. But it need not be unmanageably so. The first observation in our final section, just below, is that the self is constructed from *ordinary* materials. Its complexity and variability therefore present obstacles, but not ones so potent as to deter study.

Approaches to Traditional Enigmas of the Self

Is the Self Ordinary or Unique? The main ingredients of our definition of the self are attitude and schema, familiar psychological constructs that are well tied to research operations. We thus view the self as ordinary, but it is also undeniably special. It is unique due to the quantity of knowledge it synthesizes and to its complexity. Among the unique properties that may be credited to the scope and complexity of the self are the abilities to retrieve knowledge of events of the distant past, and to maintain the coherence of personal experience.

How Shall the Subject/Object Duality of the Self be Explained? We have faulted others' tendency to metaphorize the self's subject/object duality in terms of the reflectivity of a mirror. The mirror metaphor is debilitating in its failure to differentiate subject-of-knowledge (self as knower) and object-of-knowledge (self as known) properties. Instead, we suggest treating the subjective aspects of self as knowledge *process* and distinguish this from knowledge *content*. The process-content distinction has become increasingly manageable in recent cognitive psychology, and can be conceived with the aid of metaphors such as an evolving scientific theory or the program/data duality of a computer. The psychological concept of schema has been used recently to merge the duality of process and content into a single concept. Accordingly, we make use of the concept of schema in our definition of the self.

Is the Self Genuine and Stable, or Artificial and Malleable? Commentators on the process of self-presentation have often regarded the self as plastic, situation-dependent, and chameleon-like (Gergen, 1982; Goffman, 1959). Such observations obviously tend to undermine the view of the self as a central cognitive structure. In conceiving the self as a federation of diffuse, public, private, and collective factions, we hope to accommodate the broad evidence of situational influences on self-presentation, while preserving the conception of a stable, central organization. The usefulness of this view of person-situation interaction has already been supported by studies using recently developed individual-difference measures of orientation toward public and private aspects of the self.

Is the Self Unitary or Multiple? We agree with Epstein (1973, 1980) in regarding the self as a primary organizer, responsible for achieving a typically large degree of unity in one's personal knowledge structure. The ordinary unity or coherence of the self is particularly compelling when contrasted with pa-

thologies, such as Korsakoff syndrome and multiple personality, in which coherence and unity appear to be lacking. At the same time, we endorse Allport's (1961) observation that "unity of personality is only a matter of degree, and we should avoid exaggerating it" (p. 386). The distinction among diffuse, public, private, and collective facets of the self provides one way of describing multiplicity without abandoning unity. This view of the self's unity should not be mistaken as an advocacy of the idea of total unity within the person. Rather, we see the self's unity as no more than an island of coherence within a larger psychic sea (Greenwald, 1982b).

Are the Self's Cognitive Biases due to External, Informational Influences or to Internal, Motivational Processes?   This question has been the focus of much published debate in recent years (summarized in Tetlock & Levi, 1982). As observed by Greenwald (1980),

> The motivation-information debate is representative of a pervasive and long-standing paradigm clash between internal-cause and external-cause explanations in psychology, other instances being instinct versus learning, heredity versus environment, nativism versus empiricism, drive theory versus radical behaviorsm, and dissonance versus self-perception. (p. 612)

It may be observed that none of the debates on these issues of organism-internal versus organism-external locus of causation has ever been resolved. Psychologists have tended to treat these debates as theoretical disagreements that are to be resolved by suitable data collection. In fact, these are conflicts between heavily defended paradigms that are no more likely to be destroyed by new data than is the ordinary self likely to dissolve in the face of a series of personal failures. At the same time, paradigms do vary in their usefulness, and they gain or lose adherents accordingly. In making the concept of schema central to the self, we have deliberately sidestepped the internal-external paradigm clash. The concept of schema as an active knowledge structure is rooted in evolutionary reasoning in biology, a systems paradigm that appeals to mutuality of influence between organism and environment.

A Final Comment: The Self as Historically Bound.   The self evolves historically during the lifetime. This evolution is due in part to culturally assisted growth in the self's cognitive content. Because the contribution of culture is free also to evolve, it is certain that the self has evolved greatly in history. Perhaps, indeed, the attainment of diffuse, public, private, and collective orientations within the human lifespan recapitulates a similar evolution that has been spread over thousands of years, as the contribution of culture has become more organized. In the last half-millenium, scientific understanding has become an increasingly potent contributor to culture. In just the present century, understand-

ing based on the works of Freud and Piaget has brought once-mysterious mental processes into the range of ordinary understanding. These contributions, to use the terms of Section 2 of this chapter, have transferred some of the self's process into content. The present wave of interest in the self is certain, also, to produce understanding that will diffuse gradually into culture. (Perhaps knowledge of the self's role in ordinary memory will be the most significant such contribution.) This chapter, then, inevitably takes a step toward altering the picture that it describes.

ACKNOWLEDGMENT

REFERENCES

Aall, A. Ein neues Gedachtnisgesetz? Experimentelle Untersuchung uber die Bedeutung der Reproduktionsperspektive. *Zeitschrift fur Psychologie,* 1913, 66, 1–50.

Alloy, L. B., & Abramson, L. Y. Judgment of contingency in depressed and nondepressed students: Sadder but wiser? *Journal of Experimental Psychology: General,* 1979, *108,* 441–485.

Alloy, L. B., & Abramson, L. Y. Learned helplessness, depression, and the illusion of control. *Journal of Personality and Social Psychology,* 1982, *42,* 1114–1126.

Allport, G. W. *Personality: A psychological interpretation.* New York: Holt, Rinehart & Winston, 1937.

Allport, G. W. The ego in contemporary psychology. *Psychological Review,* 1943, *50,* 451–478.

Allport, G. W. *Becoming.* New Haven, CT: Yale University Press, 1955.

Allport, G. W. *Pattern and growth in personality.* New York: Holt, Rinehart & Winston, 1961.

Anderson, J. R. *Language, memory and thought.* Hillsdale, N J : Lawrence Erlbaum Associates, 1976.

Anderson, J. R. Effects of prior knowledge on memory for new information. *Memory and Cognition,* 1981, *9,* 237–246.

Anderson, J. R., & Bower, G. H. *Human Associative Memory.* Washington, D C : Winston, 1973.

Anderson, J. R., & Reder, L. M. An elaborate processing explanation of depth of processing. In L. S. Cermak & F. I. M. Craik (Eds.), *Levels of processing in human memory.* Hillsdale, N J : Lawrence Erlbaum Associates, 1979.

Arkin, R. M., Appleman, A. J., & Burger, J. M. Social anxiety, self-presentation, and the self-serving bias in causal attribution. *Journal of Personality and Social Psychology,* 1980, *38,* 23–36.

Aronson, E. *The social animal.* (3rd ed.) San Francisco: W. H. Freeman, 1980.

Banaji, M. R. *Cognitive models of the self: Evidence for an encoding centrality principle.* Unpublished M. A. thesis, Ohio State University, 1982.

Banaji, M. R., Devine, P. G., & Greenwald, A. G. *By what means does self-reference facilitate memory?* Unpublished manuscript, Ohio State University, 1983.

Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 1977, *84*, 191–215.

Bartlett, F. C. *Remembering: A study in experimental and social psychology*. Cambridge: Cambridge University, 1932.

Baumeister, R. F. A self-presentational view of social phenemena. *Psychological Bulletin*, 1982, *91*, 3–26.

Bellezza, F. S. Mnemonic devices: Classification, characteristics, and criteria. *Review of Educational Research*, 1981, *51*, 247–275.

Belleza, F. *The self as a mnemonic device: The role of internal cues*. Unpublished manuscript, Ohio University, 1983.

Bem, D. J., & McConnell, H. K. Testing the self-perception explanation of dissonance phenomena: On the salience of premanipulated attitudes. *Journal of Personality and Social Psychology*, 1970, *14*, 23–31.

Bjork, R. A. Theoretical implications of directed forgetting. In A. W. Melton & E. Martin (Eds.), *Coding processes in human memory*. Washington, D C : Winston, 1972.

Bobrow, S. A., & Bower, G. H. Comprehension and recall of sentences. *Journal of Experimental Psychology*, 1969, *80*, 455–461.

Bower, G. H., & Gilligan, S. G. Remembering information related to one's self. *Journal of Research in Personality*, 1979, *13*, 420–432.

Bradley, G. W. Self-serving bias in the attribution process: A reexamination of the fact or fiction question. *Journal of Personality and Social Psychology*, 1978, *36*, 56–71.

Bransford, J. D., & Franks, J. J. The abstraction of linguistic ideas. *Cognitive Psychology*, 1971, *2*, 331–350.

Breckler, S. J. *Self-referent cognition and personality*. Unpublished M. A. thesis, Ohio State University, 1981.

Breckler, S. J., & Greenwald, A. G. *Favorable self-referent judgments are made faster than nonfavorable ones*. Paper presented at Midwestern Psychological Association, Detroit, MI, 1981.

Breckler, S. J., & Greenwald, A. G. *Charting coordinates for the self-concept in multidimensional trait space*. In symposium, "Functioning and Measurement of Self-Esteem," American Psychological Association, Washington, D C, 1982.

Breckler, S. J., Pratkanis, A. R., McCann, D. *The representation of self in multidimensional cognitive space*. Unpublished manuscript, Ohio State University, 1983.

Brenner, M. The next-in-line effect. *Journal of Verbal Learning and Verbal Behavior*, 1973, *12*, 320–323.

Buss, A. H. *Self-consciousness and social anxiety*. San Francisco: Freeman, 1980.

Butters, N., & Cermak, L. S. *Alcoholic Korsakoff's syndrome: An information processing approach to amnesia*. New York: Academic Press, 1980.

Campbell, D. T. Evolutionary epistemology. In P. A. Schilpp (Ed.), *The philosophy of Karl Popper*, LaSalle, IL: Open Court Publishing Co., 1974.

Campbell, D. T. *Descriptive epistemology: Psychological, sociological and evolutionary*. Unpublished manuscript. Northwestern University, 1979.

Cantor, N., & Mischel, W. Traits as prototypes: Effects on recognition memory. *Journal of Personality and Social Psychology*, 1977, *35*, 38–48.

Cantor, N., & Mischel, W. Prototypes in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 12). New York: Academic Press, 1979.

Carver, C. S., & Scheier, M. F. *Attention and self-regulation: A control-theory approach to human behavior*. New York: Springer-Verlag, 1981.

Check, J. M., & Hogan, R. Self-concepts, self-presentations, and moral judgments. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2). Hillsdale, N J : Lawrence Erlbaum Associates, 1983.

Chew, B. R. *Selective recall of self and other referenced information*. Unpublished doctoral dissertation, Harvard University, 1983.

Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 1976, *34*, 366–375.

Claeys, W. *Private self-consciousness and incidental recall of self- and other-referent information*. Unpublished manuscript, University of Leuven, 1983.

Claparède, E. Recognition and "me-ness." In D. Rapaport (Ed.), *Organization and pathology of thought*. New York: Columbia University Press, 1951. (Original French publication, 1911).

Combs, A. W., & Snygg, D. *Individual behavior: A perceptual approach to behavior*. New York: Harper & Brothers, 1949. (Revised edition 1959).

Cooley, C. H. *Human nature and the social order*. New York: Schocken Books, 1964. (Original publication 1902).

Coopersmith, S. *The antecedents of self-esteem*. San Francisco: W. H. Freeman, 1967.

Costanzo, P. R. Conformity development as a function of self-blame. *Journal of Personality and Social Psychology*, 1970, *14*, 366–374.

Craik, F. I. M., & Tulving, E. Depth of processing and the retention of words in episodic memory. *Journal of Experimental Psychology: General*, 1975, *104*, 268–294.

Crowne, D. P., & Marlowe, D. *The approval motive*. New York: Wiley, 1964.

Cullen, D. M. *Attitude measurement by cognitive sampling*. Unpublished doctoral dissertation, Ohio State University, 1968.

Darley, J. M., & Gross, P. H. A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, 1983, *44*, 20–33.

Deutsch, J. A., & Deutsch, D. Attention: Some theoretical considerations. *Psychological Review*, 1963, *70*, 80–90.

Diener, E. Deindividuation: Causes and consequences. *Social Behavior and Personality*, 1977, *5*, 143–155.

Diener, E. Deindividuation: The absence of self-awareness and self-regulation in group members. In P. Paulus (Ed.), *The psychology of group influence*. Hillsdale, N J : Lawrence Erlbaum Associates, 1980.

Dipboye, R. L. Alternative approaches to deindividuation. *Psychological Bulletin*, 1977, *84*, 1057–1075.

Dutta, S., & Kanungo, R. N. *Affect and memory: A reformulation*. Oxford: Pergamon Press, 1967.

d'Ydewalle, G., Degryse, M. & DeCorte, E. Expected time of test and the acquisition of knowledge. *British Journal of Educational Psychology*, 1981, *51*, 23–31.

Edwards, A. L. *Techniques of attitude scale construction*. New York: Appleton-Century-Crofts, 1957.

Epstein, S. The self-concept revisited: Or a theory of a theory. *American Psychologist*, 1973, *28*, 404–416.

Epstein, S. The self-concept: A review and the proposal of an integrated theory of personality. In E. Staub (Ed.), *Personality: Basic issues and current research*. Englewood Cliffs, NJ: Prentice-Hall, 1980.

Epstein, W. Mechanisms of directed forgetting. In G. Bower (Ed.), *The psychology of learning and motivation* (Vol. 6). New York: Academic Press, 1972.

Erdelyi, M., Buschke, H., & Finkelstein, S. Hypermnesia for Socratic stimuli: The growth of recall for an internally generated memory list abstracted from a series of riddles. *Memory and Cognition*, 1977, *5*, 283–286.

Ericsson, K. A., & Simon H. A. Verbal reports as data. *Psychological Review*, 1980, *87*, 215–251.

Fenigstein, A. Self-consciousness, self-attention, and social interaction. *Journal of Personality and Social Psychology*, 1979, *37*, 75–86.

Fenigstein, A. *Self-consciousness and the overperception of self as a target*. Unpublished manuscript, Kenyon College, 1983.

Fenigstein, A., Scheier, M. F., & Buss, A. H. Public and private self-consciousness: Assessment and theory. *Journal of Consulting and Clinical Psychology*, 1975, *43*, 522–527.

Ferguson, T. J., Rule, B. G., & Carlson, D. Memory for personally relevant information. *Journal of Personality and Social Psychology*, 1983, *44*, 251–261.

Fischhoff, B. Perceived informativeness of facts. *Journal of Experimental Psychology: Human Perception and Performance*, 1977, *3*, 349–358.

Fishbein, M. (Ed.). *Readings in attitude theory and measurement*. New York: Wiley, 1967.

Frey, D. Reactions to success and failure in public and private conditions. *Journal of Experimental Social Psychology*, 1978, *14*, 172–179.

Friedman, A.,& Pullyblank, J. *Remembering information about oneself and others: The role of distinctiveness*. Paper presented at Psychonomic Society, Minneapolis, MN, 1982.

Froming, W. J., & Carver, C. S. Divergent influences of private and public self-consciousness in a compliance paradigm. *Journal of Research in Personality*, 1981, *15*, 159–171.

Froming, W. J., Walker, G. R., & Lopyan, K. J. Public and private self-awareness: When personal attitudes conflict with societal expectations. *Journal of Experimental Social Psychology*, 1982, *18*, 476–487.

Gallup, G. G. Self-recognition in primates: A comparative approach to the bidirectional properties of consciousness, *American Psychologist*, 1977, *32*, 329–338.

Gecas, V. The self-concept. *Annual Review of Sociology*, 1982, *8*, 1–33.

Gergen, K. J. *The concept of self*. New York: Holt, Rinehart & Winston, 1971.

Gergen, K. J. From self to science: What is there to know? In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, N J : Lawrence Erlbaum Associates, 1982.

Glixman, A. F. Recall of completed and uncompleted activities under varying degrees of stress. *Journal of Experimental Psychology*, 1949, *39*, 291–296.

Goethals, G. R., & Reckman, R. F. The perception of consistency in attitudes. *Journal of Experimental Social Psychology*, 1973, *9*, 491–501.

Goffman, E. *The presentation of self in everyday life*. New York: Doubleday, 1959.

Greenberg, G., Pyszczynski, T., & Solomon, S. The self-serving attributional bias: Beyond self-presentation. *Journal of Experimental Social Psychology*, 1982, *18*, 56–67.

Greenwald, A. G. Cognitive learning, cognitive response to persuasion and attitude change. In A. G. Greenwald. T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes*. New York: Academic Press, 1968.

Greenwald, A. G. Consequences of prejudice against the null hypothesis. *Psychological Bulletin*, 1975, *82*, 1–20.

Greenwald, A. G. The totalitarian ego: Fabrication and revision of personal history. *American Psychologist*, 1980, *35*, 603–618.

Greenwald, A. G. Self and memory. In G. H. Bower (Ed.), *The psychology of learning and motivation* (Vol. 15). New York: Academic Press, 1981.

Greenwald, A. G. Ego task analysis: An integration of research on ego-involvement and self-awareness. In A. Hastorf & A. M. Isen (Eds.), *Cognitive Social Psychology*. New York: Elsevier North Holland, 1982. (a)

Greenwald, A. G. Is anyone in charge? Personalysis versus the principle of personal unity. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, N J : Lawrence Erlbaum Associates, 1982. (b)

Greenwald, A. G., & Albert, R. D. Acceptance and recall of improvised arguments. *Journal of Personality and Social Psychology*, 1968, *8*, 31–34.

Greenwald, A. G., & Banaji, M. R. *The second generation effect*. Unpublished manuscript. Ohio State University, 1983.

Greenwald, A. G., Banaji, M. R., Pratkanis, A. R., & Breckler, S. J. *A centrality effect in recall*. Paper presented at Psychonomic Society, Philadelphia, 1981.

Greenwald, A. G., & Breckler, S. J. To whom is the self presented? In B. R. Schlenker (Ed.), *The self and social life*. New York: McGraw-Hill, in press.

Greenwald, A. G., & Sakumara, J. S. Attitude and selective learning: Where are the phenomena of yesteryear? *Journal of Personality and Social Psychology*, 1967, *7*, 387–397.

Hartmann, H. *Ego psychology and the problem of adaptation*. New York: International Universities Press, 1958. (Original German publication, 1939).

Harvey, J. H., Harris, B., & Barnes, R. D. Actor-observer differences in the perceptions of responsibility and freedom. *Journal of Personality and Social Psychology*, 1975, *32*, 22–28.

Helmreich, R., Stapp, J., & Ervin, C. The Texas Social Behavior Inventory (TSBI): An objective measure of self-esteem or social competence. *Journal Supplement Abstract Service. Catalog of Selected Documents in Psychology*, 1974, *4*, 79.

Hilgard, E. Human motives and the concept of the self. *American Psychologist*, 1949, *4*, 374–382.

Hofstadter, D. R. *Godel, Escher, Bach: An eternal golden braid*. New York: Basic Books, 1979.

Hull, J. G., & Levy, A. S. The organizational functions of the self: An alternative to the Duval and Wicklund model of self-awareness. *Journal of Personality and Social Psychology*, 1979, *37*, 756–768.

Iverson, M. A., & Reuder, M. E. Ego involvement as an experimental variable. *Psychological Reports*, 1956, *2*, 147–181.

Jacoby, L. L. On interpreting the effects of repetition: Solving a problem versus remembering a solution. *Journal of Verbal Learning and Verbal Behavior*, 1978, *17*, 649–667.

Jacoby, L. L., Bartz, W. H., & Evans, J. D. A functional approach to levels of processing. *Journal of Experimental Psychology: Human Learning and Memory*, 1978, *4*, 331–346.

Jacoby, L. L., & Witherspoon, D. Remembering without awareness. *Canadian Journal of Psychology*, 1982, *36*, 300–324.

James, W. *The principles of psychology*. New York: Holt, 1890.

Janis, I. L., & Field, P. B. A behavioral assessment of persuasibility: Consistency of individual differences. In C. I. Hovland & I. L. Janis (Eds.), *Personality and persuasibility*. New Haven, CT: Yale University Press, 1959.

Jervis, R. *Perception and misperception in international politics*. Princeton, NJ: Princeton University Press, 1976.

Johnston, W. A. Individual performance and self-evaluation in a simulated team. *Organizational Behavior and Human Performance*, 1967, *2*, 309–328.

Jones, E. E., & Kohler, R. The effects of plausibility on the learning of controversial statements. *Journal of Abnormal and Social Psychology*, 1958, *57*, 315–320.

Jones, E. E., & Pittman, T. S. Toward a general theory of strategic self-presentation. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, N J : Lawrence Erlbaum Associates, 1982.

Jones, E. E., & Sigall, H. The bogus pipeline: A new paradigm for measuring affect and attitudes. *Psychological Bulletin*, 1971, *76*, 349–364.

Judd, C. M., & Kulik, J. A. Schematic effects of social attitudes on information processing and recall. *Journal of Personality and Social Psychology*, 1980, *38*, 569–578.

Karylowski, J. Manuscript in preparation, 1983.

Keenan, J. M., & Baillet, S. D. Memory for personally and socially significant events. In R. S. Nickerson (Ed.), *Attention and Performance VIII*, Hillsdale, NJ: Lawrence Erlbaum Associates, 1980.

Kihlstrom, J. F., & Cantor, N. Mental representations of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 15). New York: Academic Press, in press.

Koffka, K. *Principles of Gestalt psychology*. New York: Harcourt, 1935.

Kuhn, T. S. *The structure of scientific revolutions*. Chicago: University of Chicago Press, 1970.

Kuiper, N. A. Convergent evidence for the self as a prototype: The "inverted-U RT effect" for self and other judgments. *Personality and Social Psychology Bulletin*, 1981, *7*, 438–443.

Kuiper, N. A., & Derry, P. A. The self as a cognitive prototype: An application to person perception

and depression. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition and social interaction*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1981.

Kuiper, N. A., & Rogers, T. B. Encoding of personal information: Self-other differences. *Journal of Personality and Social Psychology*, 1979, *37*, 499–512.

Langer, E. J. The illusion of control. *Journal of Personality and Social Psychology*, 1975, *32*, 311–329.

Lazarus, R. S. Thoughts on the relations between emotion and cognition. *American Psychologist*, 1982, *37*, 1019–1024.

Leary, M. R., Silver, S. E., Schlenker, B. R., & Darby, B. W. The multidimensionality of self-monitoring. *Replications in Social Psychology*, 1982, *2*, 33–36.

Levine, J. M., & Murphy, G. The learning and retention of controversial statements. *Journal of Abnormal and Social Psychology*, 1943, *38*, 507–517.

Lewin, K. *Principles of topological psychology*. New York: McGraw-Hill, 1936.

Lewinsohn, P. M., Mischel, W., Chaplin, W., & Barton, R. Social competence and depression: The role of illusory self-perceptions. *Journal of Abnormal Psychology*, 1980, *89*, 203–212.

Lewis, M., & Brooks-Gunn, J. *Social cognition and the acquisition of self*. New York: Plenum Press, 1979.

Linville, P. W. Affect consequences of complexity regarding the self and other. In M. S. Clark & S. T. Fiske (Eds.), *Affect and cognition*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1982.

Loevinger, J. *Ego development*. San Francisco: Jossey-Bass, 1976.

Loftus, E. F., Miller, D. G., & Burns, H. J. Semantic integration of verbal information into visual memory. *Journal of Experimental Psychology: Human Learning and Memory*, 1978, *4*, 19–31.

Lord, C. G. Schemas and images as memory aids: Two modes of processing social information. *Journal of Personality and Social Psychology*, 1980, *38*, 257–269.

Lord, C. G., Gilbert, D. T., & Stanley, M. A. *Idiographic self-schema and cognitive efficiency: Associations or affect?* Unpublished manuscript, Princeton University, 1983.

Maki, R. H., & McCaul, K. D. *When does self-reference enhance memory?* Paper presented at Psychonomic Society, Minneapolis, MN, 1982.

Mandler, G. Consciousness: Respectable, useful and probably necessary. In R. Solso (Ed.), *Information processing and cognition: The Loyola Symposium*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1975.

Mandler, G. The structure of value: Accounting for taste. In M. Clark & S. Fiske (Eds.), *Affect and cognition: 17th annual Carnegie symposium on cognition*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1982.

Markus, H. Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 1977, *35*, 63–78.

Markus, H. The self in thought and memory. In D. M. Wegner & R. R. Vallacher (Eds.), *The self in social psychology*. New York: Oxford Press, 1980.

Markus, H., Crane, M., Berstein, S., & Siladi, M. Self-schemas and gender. *Journal of Personality and Social Psychology*, 1982, *42*, 38–50.

Markus, H., Hamill, R., & Sentis, K. *Thinking fat: Self-schema for body weight and the processing of weight relevant information*. Paper presented at American Psychological Association, Montreal, 1980.

Markus, H., & Sentis, K. The self in information processing. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1982.

Markus, H., & Smith, J. The influence of self-schema on the perception of others. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition and social interaction*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1981.

McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. *The achievement motive*. New York: Appleton-Century-Crofts, 1953.

McFarlin, D. B., & Blascovich, J. *Affective, behavioral and cognitive consequences of self-esteem*.

Paper read at a symposium "Functioning and Measurement of Self-Esteem," American Psychological Association, Washington, DC, 1982.

McGuire, W. J., & McGuire, C. V. Salience of handedness in the spontaneous self-concept. *Perceptual and Motor Skills*, 1980, *50*, 3–7.

McGuire, W. J., & McGuire, C. V. The spontaneous self-concept as affected by personal distinctiveness. In A. Norem-Hebeisen, M. D. Lynch, & K. Gergen (Eds.), *The self-concept*. New York: Ballinger, 1981.

McGuire, W. J., & McGuire, C. V. Significant others in self-space: Sex differences and developmental trends in the social self. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1982.

McGuire, W. J., McGuire, C. V., Child, P., & Fujioka, T. Salience of ethnicity in the spontaneous self-concept as a function on one's ethnic distinctiveness in the social environment. *Journal of Personality and Social Psychology*, 1978, *36*, 511–520.

McGuire, W. J., McGuire, C. V., & Winston, W. Effects of household composition on the salience of one's gender in the spontaneous self-concept. *Journal of Experimental Social Psychology*, 1979, *15*, 77–90.

McGuire, W. J., & Padawer-Singer, A. Trait salience in the spontaneous self-concept. *Journal of Personality and Social Psychology*, 1976, *33*, 743–754.

Milgram, S. Behavioral study of obedience. *Journal of Abnormal and Social Psychology*, 1963, *67*, 371–378.

Milgram, S. *Obedience to authority*. New York: Harper & Row, 1974.

Miller, D. T., & Ross, M. Self-serving biases in the attribution of causality: Fact or fiction? *Psychological Bulletin*, 1975, *82*, 213–225.

Mischel, W., Ebbesen, E. B., & Zeiss, A. R. Determinants of selective memory about the self. *Journal of Consulting and Clinical Psychology*, 1976, *44*, 92–103.

Neisser, U. *Cognitive psychology*. New York: Appleton-Century-Crofts, 1967.

Neisser, U. *Cognition and reality*. San Francisco: Freeman, 1976.

Nisbett, R. E., & Ross, L. *Human inference: Strategies and shortcomings*. Englewood, NJ: Prentice-Hall, 1980.

Nisbett, R. E., & Wilson, T. D. Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 1977, *84*, 231–259.

Nuttin, J. *Tâche, réussite, et échec*. Louvain, Belgium: Publications Universitaires, 1953.

Nuttin, J., & Greenwald, A. G. *Reward and punishment in human learning*. New York: Academic Press, 1968.

Ostrom, T. M., & Brock, T. C. A cognitive model of attitudinal involvement. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook*. Chicago: Rand-McNally, 1968.

Owens, J., Dafoe, J., & Bower, G. H. *Taking a point of view: Character identification and attributional processes in story comprehension and memory*. Paper presented at American Psychological Association, San Francisco, 1977.

Petty, R. E., Ostrom, T. M., & Brock, T. C. (Eds.). *Cognitive responses in persuasion*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1981.

Popper, K. *The logic of scientific discovery*. New York: Basic Books, 1959.

Posner, M. I., & Keele, S. W. On the genesis of abstract ideas. *Journal of Experimental Psychology*, 1968, *77*, 353–363.

Posner, M. I., & Keele, S. W. Retention of abstract ideas. *Journal of Experimental Psychology*, 1970, *83*, 304–308.

Pratkanis, A. R. *Attitudes and memory: The heuristic and schematic functions of attitudes*. Unpublished doctoral dissertation, Ohio State University, 1983.

Quigley-Fernandez, B., & Tedeschi, J. T. The bogus pipeline as lie detector: Two validity studies. *Journal of Personality and Social Psychology*, 1978, *36*, 247–256.

Rapaport, D. *Emotions and memory*. New York: International Universities Press, 1942 (Republished in 1971).

Read, S. J., & Rosson, M. B. Rewriting history: The biasing effects of attitude on memory. *Social Cognition*, 1982, *1*, 240–255.

Riess, M., Rosenfeld, P., Melburg, B., & Tedeschi, J. T. Self-serving attributions: Biased private perceptions and distorted public descriptions. *Journal of Personality and Social Psychology*, 1981, *41*, 224–231.

Robinson, J. P., & Shaver, P. R. *Measures of social psychological attitudes*. Ann Arbor, MI: Institute for Social Research, 1973.

Rogers, C. *Counseling and psychotherapy*. Boston: Houghton-Mifflin, 1942.

Rogers, C. *Client-centered therapy*. Boston: Houghton-Mifflin, 1951.

Rogers, T. B. A model of the self as an aspect of the human information processing system. In N. Cantor & J. Kihlstrom (Eds.), *Personality, cognition, and social interaction*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1981.

Rogers, T. B., Kuiper, N. A., & Kirker, W. S. Self-reference and the encoding of personal information. *Journal of Personality and Social Psychology*, 1977, *35*, 677–688.

Rogers, T. B., Rogers, P. J., & Kuiper, N. A. Evidence for the self as a cognitive prototype: The "false alarms effect." *Personality and Social Psychology Bulletin*, 1979, *5*, 53–56.

Rosch, E. On the internal structure of perceptual and semantic categories. In T. E. More (Ed.), *Cognitive development and acquisition of language*. New York: Academic Press, 1973.

Rosch, E. Cognitive representations of semantic categories. *Journal of Experimental Psychology: General*, 1975, *104*, 192–233.

Rosch, E. Principles of categorization. In E. Rosch & B. B. Lloyd (Eds.), *Cognition and categorization*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1978.

Rosenberg, M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press, 1965.

Rosenberg, M. Psychological selectivity in self-esteem formation. In C. W. Sherif & M. Sherif (Eds.), *Attitude, ego-involvement, and change*. New York: Wiley, 1967.

Rosenberg, M. *Conceiving the self*. New York: Basic Books, 1979.

Rosenzweig, S. An experimental study of "repression" with special reference to need-persistence and ego-defensive reactions to frustration. *Journal of Experimental Psychology*, 1943, *32*, 64–74.

Ross, M., & Sicoly, F. Egocentric biases in availability and attribution. *Journal of Personality and Social Psychology*, 1979, *37*, 322–336.

Santee, R. T., & Maslach, C. To agree or not to agree: Personal dissent amid social pressure to conform. *Journal of Personality and Social Psychology*, 1982, *42*, 690–700.

Scheier, M. F. Effects of public and private self-consciousness on the public expression of personal beliefs. *Journal of Personality and Social Psychology*, 1980, *39*, 514–521.

Scheier, M. F., & Carver, C. S. Private and public self-attention, resistance to change, and dissonance reduction. *Journal of Personality and Social Psychology*, 1980, *39*, 390–405.

Scheier, M. F., & Carver, C. S. Public and private aspects of the self. In L. Wheeler (Ed.), *Review of personality and social psychology* (Vol. 2). Beverly Hills, CA: Sage, 1981.

Scheier, M. F., & Carver, C. S. Two sides of the self: One for you and one for me. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1983.

Schlenker, B. R. Self-presentation: Managing the impression of consistency when reality interferes with self-enhancement. *Journal of Personality and Social Psychology*, 1975, *32*, 1030–1037.

Schlenker, B. R. *Impression management*. Monterey, CA: Brooks-Cole, 1980.

Schlenker, B. R. (Ed.). *The self and social life*. New York: McGraw-Hill, in press.

Schlenker, B. R., Hallam, J. R., & McCown, N. E. Motives and social evaluation: Actor-observer differences in the delineation of motives for a beneficial act. *Journal of Experimental Social Psychology*, 1983, *19*, 254–273.

Schlenker, B. R., & Miller, R. S. Egocentrism in groups: Self-serving biases or logical information process? *Journal of Personality and Social Psychology*, 1977, *35*, 755–764.

Schnur, P. Testing the encoding elaboration hypothesis: The effects of exemplar ranking on recognition and recall. *Memory and Cognition*, 1977, *5*, 666–672.

Sherif, M., & Cantril, H. *The psychology of ego-involvements*. New York: Wiley, 1947.

Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. *Intergroup cooperation and competition: The Robbers' Cave experiment*. Norman, OK: University Book Exchange, 1961.

Sherif, M., & Hovland, C. I. *Social judgment: Assimilation and contrast effects in communication and attitude change*. New Haven, CT: Yale University Press, 1961.

Shrauger, J. S., & Sorman, P. B. Self-evaluations, initial success and failure, and improvement as determinants of persistence. *Journal of Consulting and Clinical Psychology*, 1977, *45*, 784–795.

Slamecka, N. J., & Graf, P. The generation effect: Delineation of a phenomenon. *Journal of Experimental Psychology: Human Learning and Memory*, 1978, *4*, 592–604.

Smith, E. E. Theories of semantic memory. In W. K. Estes (Ed.), *Handbook of learning and cognitive processes* (Vol. 5). Hillsdale, NJ: Lawrence Erlbaum Associates, 1976.

Smith, E. E., Adams, N., & Schorr, D. Fact retrieval and the paradox of inference. *Cognitive Psychology*, 1978, *10*, 438–464.

Smith, E. E., & Medin, D. L. *Categories and concepts*. Cambridge, MA: Harvard University Press, 1981.

Smith, M. B. Attitudes, values, and selfhood. In H. E. Howe & M. M. Page (Eds.), *Nebraska Symposium on Motivation 1979*. Lincoln: University of Nebraska Press, 1980.

Snyder, C. R., Stucky, R. J., & Higgins, R. L. *Excuses: The masquerade solution*. New York: Wiley Interscience, in press.

Snyder, M. Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, 1974, *30*, 526–537.

Snyder, M., & Campbell, B. H. Self-monitoring: The self in action. In J. Suls (Ed.), *Psychological perspectives on the self* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1982.

Snyder, M., & Swann, W. B. Hypothesis-testing processes in social interaction. *Journal of Personality and Social Psychology*, 1978, *36*, 941–950.

Snyder, M., & Uranowitz, S. W. Reconstructing the past: Some cognitive consequences of person perception. *Journal of Personality and Social Psychology*, 1978, *36*, 941–950.

Strickland, B. R., & Crowne, D. P. Conformity under conditions of simulated group pressure as a function of the need for social approval. *Journal of Social Psychology*, 1962, *58*, 171–181.

Swann, W. B. Self-verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1983.

Swann, W. B., & Read, S. J. Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology*, 1981, *17*, 351–372.

Tesser, A., & Campbell, J. Self-definition and self-evaluation maintenance. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self* (Vol. 2). Hillsdale, NJ: Lawrence Erlbaum Associates, 1983.

Tetlock, P. E., & Levi, A. Attribution bias: On the inconclusiveness of the cognition-motivation debate. *Journal of Experimental Social Psychology*, 1982, *18*, 68–88.

Trope, Y. Inferences of personal characteristics on the basis of information retrieved from one's memory. *Journal of Personality and Social Psychology*, 1978, *36*, 93–106.

Turner, R. H. The real self: From institution to impulse. *American Journal of Sociology*, 1976, *81*, 989–1016.

Tversky, A., & Kahneman, D. Judgments under uncertainty: Heuristics and biases. *Science*, 1974, *185*, 1124–1131.

Van Bergen, A. *Task interruption*. Amsterdam: North-Holland, 1968.

Waly, P., & Cook, S. W. Attitude as a determinant of learning and memory: A failure to confirm. *Journal of Personality and Social Psychology*, 1966, *4*, 280–288.

Wicklund, R. A. Objective self-awareness. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8). New York: Academic Press, 1975.

Wortman, C. B. Causal attribution and personal control. In J. H. Harvey, W. J. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 1). Hillsdale, NJ: Lawrence Erlbaum Associates, 1976.

Wylie, R. *The self-concept* (Vol. 1). Lincoln: University of Nebraska Press, 1974.

Wylie, R. *The self-concept* (Vol. 2). Lincoln: University of Nebraska Press, 1979.

Zajonc, R. B. Feeling and thinking: Preferences need no inferences. *American Psychologist,* 1980, *35,* 151–175.

Zeigarnik, B. Über das behalten von erledigten und unerledigten handlungen. *Psychologische Forschung,* 1927, *9,* 1–85.

Zeigarnik, B. On finished and unfinished tasks. In W. D. Ellis (Ed.), *A source book of Gestalt psychology.* New York: Humanities Press, 1938.

Zimbardo, P. G. The human choice: Individuation, reason and order versus deindividuation, impulse and chaos. In W. J. Arnold & D. Levine (Eds.), *Nebraska Symposium on Motivation* (Vol. 17). Lincoln: University of Nebraska Press, 1969.

Zuckerman, M., Kernis, M. H., Guarnera, S. M., Murphy, J. F., & Rappoport, L. *The egocentric bias: Seeing oneself as cause and target of others' behavior.* Unpublished manuscript, University of Rochester, 1983.