

The Totalitarian Ego

Fabrication and Revision of Personal History

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ABSTRACT: *This article argues that (a) ego, or self, is an organization of knowledge, (b) ego is characterized by cognitive biases strikingly analogous to totalitarian information-control strategies, and (c) these totalitarian-ego biases function to preserve organization in cognitive structures. Ego's cognitive biases are egocentricity (self as the focus of knowledge), "benefectance" (perception of responsibility for desired, but not undesired, outcomes), and cognitive conservatism (resistance to cognitive change). In addition to being pervasively evident in recent studies of normal human cognition, these three biases are found in actively functioning, higher level organizations of knowledge, perhaps best exemplified by theoretical paradigms in science. The thesis that egocentricity, benefectance, and conservatism act to preserve knowledge organizations leads to the proposal of an intrapsychic analog of genetic evolution, which in turn provides an alternative to prevalent motivational and informational interpretations of cognitive biases.*

The ego rejects the unbearable idea together with its associated affect and behaves as if the idea had never occurred to the person at all. (Freud, 1894/1959, p. 72)

Alike with the individual and the group, the past is being continually re-made, reconstructed in the interests of the present. (Bartlett, 1932, p. 309)

As historians of our own lives we seem to be, on the one hand, very inattentive and, on the other, revisionists who will justify the present by changing the past. (Wixon & Laird, 1976, p. 384)

"Who controls the past," ran the Party slogan, "controls the future: who controls the present controls the past." (Orwell, 1949, p. 32)

What follows is a portrait of self (or ego—the terms are used interchangeably) constructed by interweaving strands drawn from several areas of recent research. The most striking features of the portrait are three cognitive biases, which correspond disturbingly to thought control and propaganda devices that are considered to be defining characteristics of a totalitarian political system. The epithet for ego,

totalitarian, was chosen only with substantial reservation because of this label's pejorative connotations. Interestingly, characteristics that seem undesirable in a political system can nonetheless serve adaptively in a personal organization of knowledge.

The conception of ego as an organization of knowledge synthesizes influences from three sources—empirical, literary, and theoretical. First, recent empirical demonstrations of self-relevant cognitive biases suggest that the biases play a role in some fundamental aspect of personality. Second, George Orwell's 1984 suggests the analogy between ego's biases and totalitarian information control. Last, the theories of Loevinger (1976) and Epstein (1973) suggest the additional analogy between ego's organization and theoretical organizations of scientific knowledge.

The first part of this article surveys evidence indicating that ego's cognitive biases are pervasive in and characteristic of normal personalities. The second part sets forth arguments for interpreting the biases as manifestations of an effectively functioning *organization* of knowledge. The last section develops an explanation for the totalitarian-ego biases by analyzing their role in maintaining cognitive organization and in supporting effective behavior.

1. Three Cognitive Biases: Fabrication and Revision of Personal History

Ego, as an organization of knowledge (a conclusion to be developed later), serves the functions of observing (perceiving) and recording (remembering) personal experience; it can be characterized, therefore, as a personal historian. Many findings

Acknowledgments are given at the end of the article.

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from recent research in personality, cognitive, and social psychology demonstrate that ego fabricates and revises history, thereby engaging in practices not ordinarily admired in historians. These lapses in personal scholarship, or cognitive biases, are discussed below in three categories: egocentricity (self perceived as more central to events than it is), "benefectance"¹ (self perceived as selectively responsible for desired, but not undesired, outcomes), and conservatism (resistance to cognitive change).

Egocentricity: Ego as Self-Focused Historian

ORGANIZATION OF MEMORY IN RELATION TO SELF

The past is remembered as if it were a drama in which self was the leading player. In part, this observation refers to the autobiographical or episodic character of much of memory—the tendency for events to be encoded and recorded in terms of the person's location at the time of original experience (cf. Tulving, 1972). In describing episodic memory, Norman (1976) wrote,

My memory for the University of Toronto campus in Canada, where Tulving resides, cannot be separated from my memory of my last visit to Toronto. Trying to recall how one goes to the Psychology Department automatically recreates the last visit there—the snow, the heavy traffic, the various people I met, and the restaurants at which I ate. (p. 189)

Although it is easy to demonstrate the autobiographical character of memory to ourselves by means of such personal retrievals, empirical confirmation of the importance of self-reference in perception and memory is only a very recent development. Rogers, Kuiper, and Kirker (1977) provided the first of several demonstrations that information is especially well remembered if the person considers the relation of information to self at the time of initial experience (see also, Bower & Gilligan, 1979; Kuiper & Rogers, 1979; Lord, 1980). Brenner (1973, 1976) found that in a group setting, subjects focused on their own performance at the expense of retaining information from the just preceding or just following performances of others. Very likely related to the foregoing is a set of robust findings showing that information is better remembered the more the person plays an active, rather than passive, role in generating the information (Erdelyi, Buschke, & Finkelstein, 1977; Greenwald & Albert, 1968; Slamecka & Graf, 1978). Markus (1977) uncovered a variety of indications that judgment and memory were facil-

itated when experimentally encountered information was relevant to traits that were part of a person's self-concept.

SELF AS THE AXIS OF CAUSE AND EFFECT

In a chapter entitled "Overestimating One's Importance as Influence or Target," Jervis (1976), a political scientist, presents an analysis of egocentric misperceptions in international politics. These involve a decision maker unreasonably perceiving the act of a foreign nation as being either (a) made in response to (i.e., having been caused by) a prior act of the decision maker or (b) made with the intent of eliciting some response from the decision maker. The first of these categories corresponds somewhat to the "illusion of control," which has been demonstrated in a series of experiments by Langer (1975). This illusion takes the form of people seeing their behavior as capable of influencing outcomes that are, objectively, determined by chance, such as the probability of a lottery ticket they selected being a winner. Ross and Sicoly (1979), investigating egocentric processes in group settings, in addition to confirming Brenner's finding of people remembering best their own contributions to a group effort, also found that "individuals accepted more responsibility for a group product than other participants attributed to them" (p. 322).

The other side of Jervis's thesis—overperception of self as an intended target of another's action—has yet to be documented as a pervasive bias in experimental research settings.² This bias is a defining characteristic of paranoia, in which one sees oneself as the intended victim of actually benign others. Milder versions of this phenomenon may also surface in the behavior of normal subjects, as soon as it is sought in the psychological laboratory.

¹ Benefectance is introduced as a new coinage in this article. It is a compound of beneficence (achieving desirable outcomes) and effectance (motivation to act competently; cf. White, 1959). The concept is developed in detail in the discussion that follows. (See also Footnote 7.)

² Jervis's review of evidence for overperception of self as target focuses on instances of perceiving others as responsible for one's undesired outcomes, a bias that is regarded as important in this article and that is included under the heading "Benefectance." In the context of the egocentricity bias, overperception of self as target should be interpreted literally as the opposite of overperception of self as influence, without regard to the personal desirability of the outcome being explained.

Beneffectance: Ego as Self-Aggrandizing Historian

One of the best established recent findings in social psychology is that people perceive themselves readily as the origin of good effects and reluctantly as the origin of ill effects (see reviews in support of this conclusion by Bowerman, 1978; Bradley, 1978; Jervis, 1976, chap. 9; Miller & Ross, 1975; Myers & Ridl, 1979; Snyder, Stephan, & Rosenfield, 1978; Wicklund, 1978; Wortman, 1976; Tetlock & Levi, Note 1). The finding has variously been labeled *ego-defensive*, *self-serving*, *egocentric*, or *egotistic* attribution in these reviews. Because the first two of these terms include more than just the result presently being considered and the latter two lend themselves to confusion with the egocentricity bias, a new designation is suggested here: *beneffectance*, which is a compound of *beneficence* (doing good) and *effectance* (competence; see White, 1959). *Beneffectance* is thus the tendency to take credit for success while denying responsibility for failure.

INFORMAL OBSERVATIONS

In automobile driving, *beneffectance* takes the form of reluctance to acknowledge responsibility for various mishaps. The following quotations from a collection of drivers' explanations of accidents to police give some amusing illustrations (*San Francisco Sunday Examiner and Chronicle*, April 22, 1979, p. 35):

As I approached the intersection, a sign suddenly appeared in a place where a stop sign had never appeared before. I was unable to stop in time to avoid an accident.

The telephone pole was approaching. I was attempting to swerve out of its way when it struck my front end.

In asking students to judge an examination's quality as a measure of their ability to master course material, I have repeatedly found a strong correlation between obtained grade and belief that the exam was a proper measure. Students who do well are willing to accept credit for success; those who do poorly, however, are unwilling to accept responsibility for failure, instead seeing the exam (or the instructor) as being insensitive to their abilities (cf. Arkin & Maruyama, 1979; Schlenker & Miller, 1977).

Beneffectance can lead to problems when random events are perceived as more likely to be personally caused the more favorable the outcome is. For example, when a gambler perceives slot machine payoffs, but not losses, as being personally caused, a solutionless gambling task may be misconstrued

as a solvable learning task; the learner-gambler may invest a substantial sum before (if ever) abandoning this *beneffectance* illusion.

SOME EXPERIMENTAL EVIDENCE

Selective recall of success. Some of the earliest relevant experimental evidence comes from variations of Zeigarnik's (1927) finding that people typically recall interrupted tasks better than they recall completed ones. Zeigarnik observed some apparent exceptions to her general finding among subjects who felt that they had performed poorly on the interrupted tasks (see summary by de Rivera, 1976, pp. 133-146). Rosenzweig (1943) and Glixman (1949) established the importance of this exception to the usual Zeigarnik effect by showing that when interruption of performance was a signal of personal failure and completion was a signal of success, the effect was reversed—successful (completed) tasks were remembered better than were failed (interrupted) ones; that is, memory supported an association of self with success more than with failure.

Beneffectance in group settings. When a task is performed collectively by members of a group, individual-ability feedback may not be available. This provides free reign for people to believe that they have contributed more than their equal share toward a group success but less than an equal share toward a failure. Johnston (1967) demonstrated just this effect by having subjects believe themselves to be members of two-person teams performing a skilled task (compensatory tracking). Subjects received only team feedback, which indicated that they and their partner, as a team, were performing below average, average, or above average at the tracking skill. Subjects accepted credit for the good scores, but assigned most of the blame for the poor scores to their assumed partners. Interestingly, when team feedback was "average," subjects were inclined to assume that this must have resulted from a combination of their own better-than-average performance with the partner's worse-than-average performance. Schlenker and Miller (1977) demonstrated a similarly strong bias in a knowledge-test group task, even when using a form of group feedback that provided enough information for subjects to have made more accurate inferences about their individual performances.

Denial of responsibility for harming. In a variation of Milgram's (1963) well-known procedure for demonstrating obedience, Harvey, Harris, and

Barnes (1975) induced some subjects, who were playing the role of teachers, to administer (apparently) severe shocks, while others believed themselves to be administering only mild shocks. Subject-teachers accorded themselves less responsibility for their learners' apparent distress when the shocks appeared to be severe than when they were mild. Additionally, third-person observers saw the teachers as more responsible for the learners' severe distress than did the subject-teachers themselves.

Vicarious benefactance. A study conducted simultaneously at several universities by Cialdini et al. (1976) found evidence for a sympathetic form of benefactance: Students showed more evidence of identifying with their university, in the form of wearing clothing that displayed the university affiliation, in Monday classes after a Saturday football victory than in ones following a loss. This extension of personal identity to encompass a victor more than a loser also manifested itself in a second study: Subjects were more likely to use a first-person grammatical form when describing their university's victory (e.g., "we won") than when describing a loss (e.g., "they lost").

Cognitive Conservatism: Ego as Self-Justifying Historian

The secret of rulership is to combine a belief in one's own infallibility with the power to learn from past mistakes. (Orwell, 1949, p. 177)

Conservatism is the disposition to preserve that which is already established. Cognitive conservatism is therefore the disposition to preserve existing knowledge structures, such as percepts, schemata (categories), and memories. *Object conservation* (permanency or perceptual constancy) is the fundamental cognitive achievement of a conservative nature, followed somewhat later by assimilation (the fitting of new events into existing cognitive classifications, or *category conservation*). Two additional cognitive processes of a conservative nature, both documented in research only quite recently, are referred to here as *confirmation bias* and *rewriting of memory*.

CONFIRMATION BIAS

Several recent studies have shown that people manage knowledge in a variety of ways to promote the selective availability of information that confirms judgments already arrived at. This bias occurs not only in the domain of (controversial) opinion judg-

ments but also in domains of (presumably noncontroversial) factual knowledge (cf. Nisbett & Ross's 1980, recent discussion of belief perseverance).

Confirmation bias in information search. Snyder and Swann (1978) showed that when asked to determine if an interviewee was, say, an introvert, subject-interviewers selected questions that were biased toward the introvert hypothesis. Mischel, Ebbesen, and Zeiss (1973) found that subjects selectively examined available information to confirm experimentally established positive or negative self-expectations. Kuhn (1970) and Lakatos (1970) have proposed that the predisposition to confirm existing theoretical beliefs is pervasively characteristic of the research behavior of scientists, and I (Greenwald, 1975a) have reported data showing that psychologists are strongly inclined to disregard research results inconsistent with their theoretical hypotheses (caveat lector!).

Confirmation bias in memory search. In a study parallel to their 1973 study, Mischel, Ebbesen, and Zeiss (1976) showed that subjects selectively recalled information that confirmed experimentally established positive or negative self-expectations. Snyder and Uranowitz (1978) found a similar memory selectivity in their subjects' retrieving information about a target person so as to confirm a recently established belief about that person's sexual orientation (heterosexual vs. homosexual). Fischhoff, Slovic, and Lichtenstein (1977) asked people to give answers to difficult general information questions and then asked them to estimate the probability of correctness of their answers. Under these circumstances people tend to be overly confident in estimating their correctness; Koriat, Lichtenstein, and Fischhoff (1980) have suggested that this overconfidence in memory is due at least in part to a selective search of memory for evidence that confirms what has been recalled. The demonstration of overconfidence in memory recently reported by Trope (1978)—subjects treating weak (error-prone) memories as if they were valid—may have a similar explanation.

Confirmation bias in responding to persuasion. The persuasive impact of a communication on a target audience member is, puzzlingly, not readily predictable from knowledge either of the position advocated in the message or of what the target remembers of its content (Anderson & Hubert, 1963; Hovland, Janis, & Kelley, 1953). On the other hand, persuasive impact is readily predictable from knowledge of the target's prior opinion—people tend to reject messages that disagree with

their prior opinions, while being accepting of messages that reinforce existing opinions (Cullen, 1968; Greenwald, 1968; Janis & Terwilliger, 1962; Sherif & Hovland, 1961). This potency of prior opinion, relative to communication content, as a predictor of response to persuasion reflects a *cognitive response* process (Greenwald, 1968; Petty, Ostrom, & Brock, in press) that can be viewed as a complex form of confirmation bias. It is complex in that it involves not only selective retrieval from memory of information that supports existing opinion but also active construction of new arguments required to refute novel, opinion-opposing arguments.

A related confirmation bias, *primacy* in person impression formation, is the relative potency of information received early in a description. A well-known example is Luchins's (1957) finding that the impression resulting from two somewhat contradictory person-descriptive paragraphs varies sharply as a function of the order in which they are presented, being guided more by the first of the two. Presumably, this happens because the first paragraph establishes an impression of the target person, and the subject then interprets the second paragraph with a confirmation bias that tends to negate its independent, opposing effect. (Both the primacy phenomenon and systematic exceptions to it have recently been reviewed by Schneider, Hastorf, & Ellsworth, 1979.)

REWRITING OF MEMORY

In 1932 Bartlett suggested the existence of constructive processes in human memory:

The construction that is effected is [one] that would justify the observer's "attitude" . . . [which is] very largely a matter of feeling or affect. . . . When a subject is being asked to remember, very often the first thing that emerges is something of the nature of an attitude. The recall is then a construction, made largely on the basis of this attitude, and its general effect is that of justification of the attitude. (pp. 206-207)

Bartlett's initial evidence for constructive processes in memory came from experiments on the repeated reproduction of stories and drawings (cf. Cofer, Chmielewski, & Brockway, 1976). Almost 50 years later, Bartlett might be among those who would be surprised by the power and extent of constructive processes demonstrated in three recent lines of experiments. These experiments show that people rapidly rewrite, or fabricate, memory in situations for which this seems dubiously appropriate.

The knew-it-all-along effect. Fischhoff (1975, 1977) gave subjects a general knowledge test in

which each question was to be answered by assigning a probability of correctness to one of two alternative answers. Some of the subjects were first informed of the correct answers and then asked to indicate the probability judgments they would have given had they not first been told these answers. These subjects substantially overestimated their prior knowledge of correct answers, as indicated by comparison of their judgments with correctness-probability judgments of naive subjects. This fabrication of memory seemed to be accomplished with the same ease with which we unthinkingly nod agreement in response to conversational references to past events (e.g., "You remember last year, when we were talking at the convention . . .") whether or not the referred-to event ever took place.

Cultivating memory with leading questions. Loftus (1979) has assembled evidence showing the vulnerability of eyewitness testimony to distortions induced by events that intervene between a witnessed episode and the provision of testimony. As one example, asking the question, Did another car pass the red Datsun while it was stopped at the stop sign? can result in a subject's later asserting that there was a stop sign at an intersection that the subject (in fact) had previously seen with a yield sign (Loftus, Miller, & Burns, 1978). As another example, asking the question, How fast were the cars going when they *smashed* into each other? results in a subject's "remembering" a greater speed than when the word *hit* is used instead of *smashed* (Loftus & Palmer, 1974). This sort of question-induced fabrication of memory could be responsible for occasional instances of witnesses "recognizing" as a criminal perpetrator a person who was first seen at a much later time, but under circumstances suggestive of guilt.

Rapid aging of new opinions. A result first obtained by Bem and McConnell (1970) is of major significance in demonstrating the disposition to fabricate in human memory. One week after having given their opinions, which (expectably) favored student control over university curriculum, Bem and McConnell's subjects were induced to choose to write an essay opposing that opinion. This counterattitudinal role playing reliably produces opinion change in the direction of the role-played position—in this case averaging about 10 points on a 60-point single-item rating scale. Immediately after the role playing, some of the subjects were asked to recall the opinion they had expressed one week earlier. Remarkably, these subjects showed

a recall error that averaged about 10 points, in effect "remembering" opinions that agreed with what their post-role-playing opinions should have been, rather than with what their pretest opinions actually were. Bem and McConnell also showed that subjects in this role-playing procedure usually had no awareness of the opinion change that had occurred. These results, which have been confirmed by Wixon and Laird (1976), can be viewed as a laboratory model of the behavior of politicians who declare themselves as having always supported a previously unpopular policy that has just recently proven wise.

COGNITIVE CONSERVATISM: DISCUSSION

The quotation from Orwell's *1984* that opened this section mentioned a combination of "belief in one's own infallibility" and "the power to learn from past mistakes." Although this seems an unlikely combination, it is indeed the consequence of the conservatism biases just reviewed. Specifically, a form of belief in personal infallibility is evident in the confirmation biases that operate in information and memory search and in response to persuasion attempts; at the same time, people's readiness to rewrite memory permits new information to be received and incorporated into the cognitive system without the system's registering the occurrence of change. This sort of correction or updating of memory (i.e., learning) thus does not disrupt the sense of infallibility. Fischhoff's knew-it-all-along effect and Bem and McConnell's misrecall-of-prior-opinion finding are perfect illustrations of the paradoxical combination that Orwell had in mind.

The special case of perceiving improvement. In contrast with the cognitively conservative strategy of failing to perceive change when actual change occurs, there is an important class of situations in which just the reverse may be true—that is, change being perceived when none has actually occurred. This phenomenon of fabricated change takes place when people compare their past versus present selves on evaluative dimensions. A passage in *1984* suggests the function of this cognitive distortion:

The Party member . . . tolerates present-day conditions partly because he has no standards of comparison. He must be cut off from the past . . . because it is necessary for him to believe that he is better off than his ancestors and that the average level of material comfort is constantly rising. (Orwell, 1949, p. 175)

We are familiar with the occurrence of fabricated changes of this sort in the daily practice of business and politics, for instance, the "new, improved"

product that differs from its predecessor mainly in packaging design, or the corporation annual report in which accountants reorganize the previous year's data so as to show the present year as an improvement, or the politician who campaigns on a portion of the data (e.g., that policies have resulted in increased exports of domestic goods) while trusting voters not to be aware of the remainder (e.g., that imports have increased even more). It is likely that intrapsychic analogs of these phenomena of repackaging (buying new clothing?) and flexible accounting or selection of favorable indicators ("[Even though I lost], my backhand was much better than last time") are common occurrences. However, there has yet to be much empirical attention to such processes. Among the relevant findings are ones showing that (a) people sometimes arrange excuses or hedges ("self-handicapping") so as to create a situation in which actual performance is likely to improve upon expectation (Jones & Berglas, 1978); (b) we are especially attracted to, and therefore may seek out, people who provide us a pattern of improving evaluations (e.g., the esteem-gain finding of Aronson & Linder, 1965); (c) on tasks that are personally important, we expect to improve on successive performances (Frank, 1935); and (d) most people believe that the present is better than the past and that the future will be better still (Brickman, Coates, & Janoff-Bulman, 1978; cf. Albert, 1977).

Relation of Totalitarian-Ego Biases to Self-Esteem

The three totalitarian-ego biases are interrelated in their bearing on the positiveness of self-evaluations, in other words, on self-esteem. Self-enhancement is by definition a component of beneffectance and is just slightly less obviously so for cognitive conservatism, a bias that incorporates a sense of personal infallibility. Egocentricity has the least obvious self-enhancing component, but has one nonetheless, in encompassing the notion that events are only important to the extent that one's self is involved. Because all three biases contribute to self-esteem, it is tempting to ignore their details in favor of this major feature of similarity. The details will prove important, however, in analyzing the biases' functions and their relation to processes that occur in other knowledge domains.

II. Ego as Organization of Knowledge

The assertion that a collection of elements constitutes an organization requires the demonstration of

interdependence among those elements; accordingly, the thesis that ego is an organization of knowledge demands a demonstration of interdependence within a knowledge domain that is plausibly identified as ego. The argument proceeds by showing that (a) egocentricity, beneffectance, and conservatism are indications of organization in extrahuman knowledge domains, (b) these biases are enhanced by procedures believed to increase ego's role in cognition (i.e., by *ego-involvement*), and (c) ego-involvement reveals knowledge interdependencies in the form of cognitive consistency.

Properties of Large-Scale Knowledge Organizations

Totalitarian societies and scientific theories are certainly strange bedfellows with each other, let alone with ego as a knowledge system. Nevertheless, analysis of their properties contributes to the understanding of ego as organization in two ways: (a) The cognitive biases identified in the first section of this article can also be found in the operation of these two types of system (totalitarian society and scientific theory); and (b) the sense in which ego is conceived as an organization of knowledge can then be considered by way of analogy to the cognitive-organizational aspects of totalitarianism and scientific theory.

KNOWLEDGE ORGANIZATION IN TOTALITARIAN SOCIETY

[The] reason for the readjustment of the past is the need to safeguard the infallibility of the Party. . . . No change of doctrine or in political alignment can ever be admitted. For to change one's mind, or even one's policy, is a confession of weakness. (Orwell, 1949, p. 175)

The control of the past depends above all on the training of memory. . . . [It is] necessary to remember that events happened in the desired manner. And if it is necessary to rearrange one's memories or to tamper with written records, then it is necessary to forget that one has done so. The trick of doing this can be learned like any other mental technique. . . . It is called doublethink. (Orwell, 1949, p. 176)

With modest rewriting, Orwell's characterizations of thought control at the totalitarian-society level could stand as a summary of cognitive biases at the individual-person level. One last quotation from 1984 illustrates the function of cognitive biases in the totalitarian system about which Orwell wrote. At the end of 1984, Winston Smith (the protagonist—whose occupation was the daily revision of history in the office of the Ministry of Truth) be-

comes a perfect citizen of the totalitarian society:

The final, indispensable, healing change had never happened, until this moment. . . . He was back in the Ministry of Love, with everything forgiven, his soul as white as snow. He was in the public dock, confessing everything, implicating everybody. He was walking down the white-tiled corridor, with the feeling of walking in sunlight, and an armed guard at his back. The long-hoped-for bullet was entering his brain. . . . But it was all right, everything was all right, the struggle was finished. He had won the victory over himself. He loved Big Brother. (Orwell, 1949, pp. 244-245)

Winston Smith's "victory over himself" is his loss of individuality, his complete subservience to the state, a condition in which his life (or death) as an individual no longer has special significance. In her analysis of totalitarianism, Arendt (1966) similarly describes the totalitarian society's citizens in terms of their loss of individuality:

Total terror³ . . . substitutes for the boundaries and channels of communication between individual men a band of iron which holds them so tightly together that *it is as though their plurality had disappeared into One Man* of gigantic dimensions. (pp. 465-466, italics added)

Total domination, which strives to organize the infinite plurality and differentiation of human beings *as if all of humanity were just one individual*, is possible only if each and every person can be reduced to a never-changing identity of reactions, so that each of these bundles of reactions can be exchanged at random for any other. (p. 438, italics added)

Orwell and Arendt both imply that the totalitarian state, as a center of cognitive organization, subverts and preempts knowledge organization at the individual-person level. Arendt (1966) also comments on the cognitive biases that operate at the leadership level of the totalitarian state; her observations agree with those of Orwell, and they recapitulate the totalitarian-ego themes:

The chief qualification of a mass leader has become unending infallibility; he can never admit an error. (pp. 348-349)

Mass leaders in power have one concern which overrules all utilitarian considerations: to make their predictions come true. (p. 349)

In a totally fictitious world [i.e., that of the totalitarian society], failures need not be recorded, admitted, and remembered. (p. 388)

³ The use of terror as a device for social control is a fundamental part of Arendt's conception of totalitarianism, yet it obviously has no analog in the functioning of ego. This breakdown of the analogy between ego and totalitarianism is of interest in contemplating the possibility that knowledge organization at the interindividual (social) level might become dominant over organization at the individual level.

THE SCIENTIFIC PARADIGM AS AN ORGANIZATION OF KNOWLEDGE

Contemporary views of the development of scientific knowledge give considerable attention to the possibility that successfully developing theories incorporate biased evaluations of research evidence. Consider the following quotations from Kuhn (1970) as suggesting, respectively, egocentricity, benefectance, and conservatism biases in the activities of "normal science."

To scientists . . . the results gained in normal research are significant because they add to the scope and precision with which the paradigm can be applied. (p. 36)

[Normal science's] object is to solve a puzzle for whose very existence the validity of the paradigm must be assumed. Failure to achieve a solution discredits only the scientist and not the theory. (p. 80)

[Normal science] seems an attempt to force nature into the preformed and relatively inflexible box that the paradigm supplies. (p. 24)

Thus, a successful paradigm accounts for an increasing range of phenomena ("paradigm-centricity"), credits itself with confirmed, rather than with disconfirmed, hypotheses, and preserves the integrity of its theoretical constructs.

The thesis of an analogy between the cognitive operations of the human personality and scientific-theory construction was developed by Kelly (1955) in *The Psychology of Personal Constructs*. Epstein (1973) extended Kelly's analysis in presenting the view that what we call *self* is, in effect, a theory about oneself. Loevinger (1976) connected her conception of ego explicitly to Kuhn's analysis of paradigms in comparing the progression of ego through sequential stages of cognitive development with the establishment and overthrow of successive theoretical paradigms. To these previous treatments must now be added the observation that self and scientific theory also resemble each other in sharing cognitive biases—the same ones that characterize totalitarian thought control.

Consequences of Ego-Involvement

Totalitarian propaganda and scientific theory are assumed to be unarguably classified as organizations of knowledge. Consequently, the parallels between these knowledge systems and ego suggest both that ego has comparable organizational status and that the totalitarian-ego biases generally signal the existence of an actively functioning organization.

However, even when one grants that cognitive biases are signs of cognitive organization, referring to the organization that possesses these biases as ego remains to be justified. It is to fill this gap in the argument that an examination of phenomena of ego-involvement is in order. *Ego-involvement* is a term traditionally given to procedures that are assumed to activate ego processes, usually by attaching a sense of personal importance on the part of a subject to an experimental task. To create a high level of ego-involvement, for example, subjects may be informed that a task yields a reliable measure of intelligence (or of some other highly valued skill). I will show that egocentricity, benefectance, and conservatism are magnified by ego-involvement, providing reason to conclude that these biases reflect the operation of an organization that should be identified as ego.

EGO-INVOLVEMENT ENHANCES COGNITIVE BIASES

Few studies have observed egocentricity, benefectance, or conservatism in conjunction with a variation of ego-involvement. However, the available research is consistent in showing that these biases are enhanced by the presence of ego-involvement.

Egocentricity and ego-involvement. The manifestations of egocentricity—self-reference and self-generation as facilitators of memory and the illusion of control—are conceptually close to the notion of ego-involvement. The phenomena of memory, for example, might have been described as showing that when there is ego-involvement, there is better memory; the incorporation of self into the causal structure of events reveals a tendency to impose ego-involvement onto event perception. While it may not be meaningful to ask if egocentricity increases with ego-involvement—because egocentricity is, in effect, ego-involvement—it is still of interest to determine if egocentricity is more marked in a context of personal importance. There is much evidence that memory improves with the importance of the material being studied (e.g., Nuttin & Greenwald, 1968), but that this improvement is associated with increased self-reference in encoding has not been demonstrated. Studies to determine the effect of personal importance on the incorporation of ego into causal sequences have not yet been done.

Beneffectance and ego-involvement. It is well established that benefectance—the disposition to take credit for desired outcomes and to deny responsibility for undesired ones—is enhanced to the

extent that outcomes are personally important. This was evident in the reversed Zeigarnik effect (see first section), when subjects were ego-involved and interruption was the equivalent of failure, an undesired outcome. Additionally, Nicholls (1975), Miller (1976), and Snyder et al. (1978) have recently reported studies showing that the proclivity to take credit more for success than for failure is greater the more important these outcomes are to the subject.

Conservatism and ego-involvement. Evidence for ego-involvement's enhancement of cognitive conservatism—in the form of resistance to change of prior judgments—comes particularly from studies of persuasion. The tendency to resist persuasion is especially strong when the topic is important to the person and there is some commitment to (ego-involvement in) the prior position (Freedman, 1964; Rhine & Severance, 1970; Sherif & Hovland, 1961; see Petty & Cacioppo, 1979, for a recent summary). On the other hand, importance of the topic can sometimes facilitate change (Petty & Cacioppo, 1979; Zimbardo, 1960), but on these occasions involvement may be associated more with a post-persuasion judgment than with the pretest. In the latter studies, it would be interesting to determine whether subjects perceived change as actually having occurred. (Goethals & Reckman, 1973, demonstrated a failure to perceive communication-induced change on an important issue, but the experiment included no contrast with a less important topic.) Many unresearched questions about the potential role of ego-involvement as an enhancer of conservatism are of practical and theoretical interest. For example, are people more biased to confirm hypotheses in searching memory when the hypothesis is personally important (one's pet theory)? Is the likelihood of postevent modification of memory greater for testimony in a case in which one is personally involved than in a case in which one is a chance bystander? Are we increasingly overconfident in the accuracy of memory as a function of personal importance of the content? Are we more dominated by first impressions of people when they will play important roles in our lives?

EGO-INVOLVEMENT INCREASES COGNITIVE CONSISTENCY

Dissonance arousal and ego-involvement. In the original statement of cognitive dissonance theory, Festinger (1957) asserted that dissonance was

likely to be aroused to the extent that the potentially dissonant cognitions were important to the person. As a result, much early dissonance research was done under conditions that amounted to high ego-involvement. Deutsch, Krauss, and Rosenau (1962) deliberately varied ego-involvement and found that "dissonance did not seem to occur" (p. 27) in the low-involvement condition. More recently, there has been much debate about the necessity of ego-involvement for dissonance arousal. Zajonc (1968, p. 367) suggested that the emphasis on volition in the Brehm and Cohen (1962) presentation of dissonance theory is equivalent to an assumption that involvement of self is important to dissonance arousal. Aronson (1968) presented a version of dissonance theory in which the centrality of self-relevant cognitions was explicitly suggested. In the latest comprehensive review of dissonance theory, Wicklund and Brehm (1976) accorded "personal responsibility" a central role in dissonance theory, and Greenwald and Ronis (1978) suggested that this was equivalent to an assertion that dissonance reduction occurs only when there is some cognitive involvement of self.

Self-awareness and ego-involvement. An interesting recent development in the psychological study of self is Duval and Wicklund's (1972) concept of self-awareness. Self-awareness is defined as a state in which one's attention is focused on oneself, such that discrepancies between actual and ideal self become salient. Duval and Wicklund proposed that self-awareness is induced by self-focusing manipulations, which include the presence of a mirror, a camera, a tape recorder, an audience, or the sound of one's own voice. Although the procedures used to induce self-awareness do not resemble those typically used to generate ego-involvement, the similarity of these mental states is nonetheless suggested by (a) their similar cognitive consequences—self-awareness, like ego-involvement, increases both cognitive consistency (Carver, 1975; Gibbons, 1978) and beneffectance (Federoff & Harvey, 1976)—and (b) their similar hypothesized mediating processes—Sherif and Cantril (1947) have conjectured that ego-involvement entails attention to discrepancies between perceived self and social standards, while Hull and Levy (1979) have proposed that self-awareness can be redefined as "encoding of information in terms of its relevance for the self" (p. 757). The close relation between self-awareness and ego-involvement is developed further in Greenwald (in press).

Trait organization and ego-involvement. In

1943, Allport suggested the following hypothesis: "When there is ego-involvement there are general traits; when there is no ego-involvement there are no general traits" (p. 461). This hypothesis might be taken as an adjunct to the recent idiographic approaches to personality consistency exemplified in the work of Bem and Allen (1974) and Markus (1977). To my knowledge, however, Allport's hypothesis has never received a strong test. Confirmation would provide a useful addition to the evidence supporting the conception of ego as organization.

Is cognitive consistency a cognitive bias? This question is raised only to note that it would have been possible to subsume the discussion of cognitive consistency under the conservatism bias; that is, consistency, particularly when it involves the processing of new information in a fashion consistent with existing knowledge, is a form of conservatism. Consistency was not grouped with the cognitive biases because maintenance of consistency might be regarded, in many cases, as unbiased information processing. There is no present need to arrive at a conclusion regarding the appropriateness of referring to cognitive consistency as a bias. Consideration of the question, however, does provide an introduction to considering the adaptiveness of ego's cognitive biases, which is a major topic of the third section.

III. Toward Explanation

A Tralfamadorian test pilot presses a starter button, and the whole Universe disappears. (Vonnegut, 1969/1971, p. 117)

Existing theoretical interpretations of cognitive biases attribute causal efficacy either to *motivational* or to *informational* forces. These causal forces are organism-internal and organism-external, respectively, but in either case are external to the cognitive organization being explained. A third type of explanation, one that is related to evolutionary explanations in biology, allows the cognitive biases to provide their own explanation. In this "intrapsychic evolution" type of explanation, cognitive-system characteristics such as the totalitarian-ego biases cannot become pervasive unless they achieve a criterion of intrapsychic survival.

Motivational explanations interpret cognitive biases as occurring in the service of motives or needs. Examples of motives that have been hypothesized to account for some portion of the totalitarian-ego biases are needs for cognitive consistency

(e.g., Festinger, 1957), self-esteem (Schneider et al., 1979; Snyder et al., 1978), belief in a just world (Lerner & Miller, 1978), effective control (Kelley, 1971), subjective competence (Bowerman, 1978), and social approval (Tedeschi, Schlenker, & Bonoma, 1971; Weary, 1980).⁴ Informational explanations suggest that biases are communicated to the person by the environment. Examples of informational interpretations are those stated in terms of perceived covariation (Kelley, 1971), correspondent inference (Jones & Davis, 1965), focus of attention (Jones & Nisbett, 1971; Taylor & Fiske, 1978), perception of contingency (Miller & Ross, 1975), and selective transmission of favorable information (Tesser & Rosen, 1975).

Although motivational and informational interpretations have sometimes been formulated as antagonists—as in the dissonance theory versus self-perception theory debate (Bem, 1967) and in the interpretations of cognitive bias by Miller and Ross (1975) and Bradley (1978)—the two classes of explanation can coexist (see Greenwald, 1975b, for a more complete discussion of this point). The present analysis complements motivational and informational explanations of cognitive bias by focusing on the role of the totalitarian-ego organization in facilitating its own continued existence.⁵

PARALLEL WITH GENETIC EVOLUTION: INTRAPSYCHIC EVOLUTION

In biology, evolutionary explanations look to the role of fortuitous variations in species characteris-

⁴ The explanation offered by Orwell for the totalitarianism of 1984 is a motivational one and is different from the ones just mentioned. He appealed to a need for power (Orwell, 1949, p. 217).

⁵ Motivational and informational interpretations of cognitive bias have been compared in detail in a recent review by Tetlock and Levi (Note 1). In a comprehensive analysis of nonveridical inference strategies in human judgment, Nisbett and Ross (1980) have taken a strong position against motivational interpretations. They have classed such interpretations as instances of the "fundamental attribution error" of postulating dispositions to account for observed behavior. Although this is not the place to develop the point in detail, it is possible to consider purely informational interpretations equally as instances of attributional error. 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 behaviorism, and dissonance versus self-perception. By considering both internal and external causal factors in interaction, analyses based on evolutionary reasoning offer a possible escape from this perennial debate.

tics in ensuring the species' survival. Variations that survive are, by definition, successful or adaptive, and surviving species therefore provide living records of adaptive variations. The evolutionary interpretation of the totalitarian-ego biases starts from the observation of their pervasiveness, which serves as an index of their survival value; it proceeds to consider why cognitive systems that contain these biases may survive better than do ones that lack them.

A few comments may elucidate the parallel between intrapsychic and genetic evolution. First, the domain in which the totalitarian-ego organization develops is the individual nervous system; the potential competitors for this niche are alternative cognitive forms, which could be organizations lacking the totalitarian-ego biases or possibly even non-organizations. Second, intrapsychic evolution proceeds very rapidly in comparison with genetic evolution, occurring within the period of formation of the individual personality. Third, whereas in genetic evolution reproduction is the survival criterion, in intrapsychic evolution a cognition (percept, category, proposition, etc.) survives by being known again, that is, by being *recognized*.

The process of intrapsychic evolution, although differing from genetic evolution in the ways just noted, nonetheless cannot proceed in total independence of genetic evolution. A cognitive structure that functions well at achieving recognition, but (for whatever reason) interferes with reproductive success, is unlikely to remain characteristic of the species for many generations. (The genes that supported it would eventually disappear from the species' gene pool.) Accordingly, this analysis must consider the role of the totalitarian-ego biases in affecting survival both of cognitions and of the body inhabited by them.

INTRAPSYCHIC SURVIVAL: EGOCENTRICITY AND CONSERVATISM IN THE SERVICE OF MAINTAINING ORGANIZATION

The workings of a library provide a useful analogy to the process of recognition. Reexperiencing a prior cognition is analogous to finding a book in a library. In the library, book finding is possible because of the existence of an organized system for shelving books and recording the locations of shelved books. By this analogy, the existence of organization in human memory should be an aid to recognition.⁶ Further, in a library, success in locating a book requires that the organization ex-

isting at the time of shelving the book still be in existence at the time of searching for it. Recognition, similarly, should be facilitated by stability of the organization of memory.

To continue this reasoning, the role of totalitarian-ego biases in facilitating intrapsychic survival (recognition) can be understood by demonstrating their function in maintaining the cognitive organization of which they are a part. This demonstration can start from some existing discussions of the functions of cognitive biases in scientific theory and totalitarian information control. For example, Lakatos (1970), commenting on the behavior of scientists in relation to their theoretical paradigms (he used the term *research programmes*), said,

All scientific research programmes may be characterized by their 'hard core.' . . . We must use our ingenuity to articulate or even invent 'auxiliary hypotheses,' which form a *protective belt* around this core. . . . It is this protective belt of auxiliary hypotheses which has to bear the brunt of tests and get adjusted and re-adjusted, or even completely replaced, to defend the thus-hardened core. (p. 133)

In characterizing totalitarianism, Arendt (1966) observed that "the true goal of totalitarian propaganda is not persuasion but *organization*" and that "the *organization* of the entire texture of life according to an ideology can be fully carried out only under a totalitarian regime" (pp. 361; 363; italics added).

Thus, 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.

⁶ The reader is asked to accept without further laboring of the argument that organization within a knowledge system facilitates location of information contained within that system. The argument might be made in rigorous fashion, but that is beyond the scope of this article.

To return to Lakatos's (1970) observation, the egocentricity and conservatism biases may provide a "protective belt" that preserves the "hard core" belief that all of one's memory is the interrelated experience of a single entity—the one called *myself*. The protection of this belief may be a very important matter indeed; its breakdown is considered to be a pathological condition when it occurs in the forms of multiple personality, amnesia, fugue, or depersonalization (cf. Hilgard, 1977, chap. 2).⁷

GENETIC SURVIVAL: BENEFFECTANCE IN THE SERVICE OF BEHAVIORAL PERSEVERANCE

It must be conceded that the totalitarian-ego biases are, in the long run, disadvantageous. In scientific theory, for example, since any theory is certain eventually to be found inadequate and to be replaced, a bias that resists change in knowledge (the conservatism bias) prolongs the life of an incorrect theory. In the case of self, it can be argued similarly that ego's biases will produce cognitive stagnation in a person who is capable of greater developmental achievement. Despite these considerations, available speculations about scientific theory indicate that the behavioral perseverance characteristic of an organization possessing the benefectance bias is a survival asset.

The dogmatic attitude of sticking to a theory as long as possible is of considerable significance. Without it we could never find out what is in a theory—we should give the theory up before we had a real opportunity of finding out its strength; and in consequence no theory would ever be able to play its role of bringing order into the world, of preparing us for future events, of drawing our attention to events we should otherwise never observe. (Popper, 1963, p. 312)

By ensuring that the paradigm will not be too easily surrendered resistance guarantees that scientists will not be lightly distracted and that the anomalies that lead to paradigm change will penetrate existing knowledge to the core. (Kuhn, 1970, p. 65).

In the psychological research literature, there are several indications that a benefectance bias is associated with effective performance in situations in which perseverance might be the critical determinant of effectiveness. In Johnston's (1967) tracking experiment (described earlier), subjects who received feedback indicative of team success not only felt responsible for the success but also performed better on the tracking task than did subjects who received feedback of repeated poor performance. Johnston attributed the performance deterioration of the latter subjects to a decline in morale associated with their declining self-evaluation (p. 326).

Some recent findings from the study of depression suggest that normals differ from depressives along the benefectance dimension in a way consistent with the hypothesis of a relationship between benefectance and effective performance. Lewinsohn, Mischel, Chaplin, and Barton (1980) found that depressives' self-evaluations agreed more with observers' ratings than did those of normals; normals gave relatively inflated self-evaluations. Alloy and Abramson (1979) found that depressives appraised their degree of control over probabilistic outcomes more accurately than did normals, with normals frequently overestimating their extent of control. These interesting, but unexpected, findings should receive the support of additional studies before strong conclusions are based on them. Tentatively, however, it appears that the reduced level of effective action associated with depression could be a consequence of depressives' lack of a benefectance bias.

Bandura (1977) has recently developed a theory of self-efficacy that offers a systematic account of the involvement of beliefs about being able to perform appropriate actions (efficacy expectations) in effective performance. It is consistent with Bandura's theory to conclude that the likelihood of effective performance may be greater for a person whose efficacy expectations are generally inflated (i.e., a person with a benefectance bias) than for one whose expectations may be more objectively accurate.

Toward Explanation: Conclusions

Through continued development of the parallels among self, scientific theory, and totalitarian society that were introduced in the second section of this article, I suggested that the totalitarian-ego biases succeed intrapsychically because they preserve the cognitive organization in which they exist and that they succeed behaviorally because they facilitate goal attainment via perseverance in goal seeking.

⁷ In recognition of these virtues of cognitive conservatism, I had an attack of caution before deciding to introduce a new label (benefectance) for one of the cognitive biases with which this article is concerned. The dilemma was resolved in part by taking care to cross-reference the labels (ego-defensive attribution, self-serving attribution, egocentric attribution, and attributional egotism) that readers may have used for some of the relevant prior literature. More generally, this illustrates that cognitive conservatism is not being put forth as an absolute virtue. The gains of a new conceptualization (cognitive change) are to be set off against the costs of repairing the organization that is damaged by the change.

This intrapsychic evolution analysis offers an alternative to existing motivational and informational interpretations of cognitive biases.⁸

The reasoning developed in characterizing the functions of the conservatism bias is capable of explaining a variety of resistances to cognitive change, such as unwillingness to learn new languages (e.g., the reluctance of English- and Spanish-speaking New Yorkers to learn the other's language), resistance to adopting a new standard (e.g., the resistance of the U.S. population to adopting metric units for weight, distance, and temperature), and reluctance of users of a functioning computer system to "upgrade" to a new generation of equipment. It is apparent that such resistances interfere with rapid diffusion of improvements in knowledge; however, this liability may be more than balanced by the asset of allowing the cognitive system to allocate its resources to storage and retrieval of information (rather than continual revision of its indexing or coding scheme), thereby permitting access to a large amount of information within a single system. To return to the library analogy, once a commitment has been made to a specific cataloging scheme, it may be more efficient to maintain consistency with that scheme than to allocate librarian effort to revising it (recataloging and reshelving the existing collection) every time an improved indexing or retrieval system becomes available.

Conclusion

A variety of cognitive biases can be grouped into three categories: egocentricity, beneffectance, and conservatism. There is much evidence for the operation of these biases in an organization that is of special interest to psychologists—the human self or ego—as well as in two extrapersonal knowledge domains—paradigmatic scientific theory and totalitarian propaganda. The biases' predilection for fabrication and revision of history entails costs:

⁸ Nisbett and Ross (1980) temper their plea for use of rationally correct inferential strategies by noting the potential virtues of normatively inferior heuristics (cf. Tversky & Kahneman, 1974). Two of Nisbett and Ross's observations fit particularly well with the intrapsychic evolution analysis: "The behavior of subjects, inappropriate as it is from the standpoint of rationality in the inferential contexts studied, may arise from pursuit of important, higher order epistemic goals [such as] (a) the importance of stability to beliefs and belief-systems . . . and (b) real-world constraints on time" (p. 191); and "People sometimes may require overly optimistic or overly pessimistic subjective probabilities to goad them into effective action or prevent them from taking dangerous actions" (p. 271).

The knowledge system must sometimes operate with out-of-date or inaccurate information. More than compensating for these costs, presumably, are advantages: The biases help to preserve the knowledge system's organization and allow it to link effectively with behavior.

Preparation of this article was facilitated by grants from the National Science Foundation (BNS 76 11175) and the National Institute of Mental Health (MH-20527, MH-31762, MH-32317, and MH-07669). The reader of this article should appreciate that the author is prepared to take full responsibility only for the good ideas that are to be found in it. I am nonetheless grateful to the following people, who commented on earlier drafts: Daryl J. Bem, Eugene Borgida, Nancy Cantor, Robert B. Cialdini, Baruch Fischhoff, Kenneth J. Gergen, Alan E. Gross, Reid S. Hastie, John H. Harvey, Ernest R. Hilgard, Irving L. Janis, Barbara Kellerman, Ellen Langer, Elizabeth F. Loftus, Hazel Markus, Walter Mischel, T. B. Rogers, David L. Ronis, Ralph L. Rosnow, Michael Ross, Silvan S. Tomkins, Gifford Weary, Gary L. Wells, and Kipling D. Williams. If this disguise of gratitude is itself seen as inept, then the reader should know that it was the suggestion of Robert B. Zajonc, modified with the help of Robert Trivers.

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