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The Effects of Self-Esteem, Performance Feedback,

and Behavioral Verifiability on Self-Serving Biases

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Abstract

The present study examined the psychological processes underlying

the self-serving bias, the tendency to portray one's own qualities as

more favorable then those of others. Subjects were asked to predict

future success on a behavioral task for themselves and for the average

student at their university after receiving performance feedback on the

same task. It was proposed that self-enhancing predictions would be

moderated by subject's self-esteem (high or low), the verifiability of

task performance (high or low), and performance feedback (success or

failure). The results revealed that subjects with high self-esteem

displayed a self-serving bias regardless of performance verifiability or

feedback. Subjects with low self-esteem, however, self-enhanced only

for tasks low in verifiability and showed a slight self-enhancing trend

when receiving success feedback. The results are discussed in terms of

depressive realism, verifiability theory, and self-consistency theory.

Implications for teaching positive cognitive strategies to low

self-esteem individuals are discussed.

Diana Slatopolsky has presented her thesis defense in an open meeting with her committee on The Effects of Self-Esteem, Performance Feedback, and Behavioral Verifiability on Self-Serving Biases. The thesis has been accepted and approved by the committee.

Student _Diana Slatopolsky_

Chairperson _Scott Allison_

Member _Joanne C. Preston_

Member _Mary on Churchy_

The Effects of Self-Esteem, Performance Feedback,

and Behavioral Verifiability on Self-Serving Biases

Until recently, individuals with low self-esteem were thought to

possess a distorted view of themselves and their social world.

Depressives were theorized to be motivated to heighten their

self-image by derogating others and distorting or enhancing their

self-perception (Jones, 1973; Wills, 1981). Alternatively, they were

believed to be more likely to downgrade themselves (Beck, 1967) and

overestimate other's abilities (Martin, Abramson & Alloy, 1984). In a

dramatic departure from these ideas, current research suggests that

depressed or low self-esteem individuals are more accurate or

realistic than those with average or high self-esteem. Studies now

show that depressed individuals are more accurate in recognizing

personal level of social skills (Lewinsohn, Mischel, Chaplin, & Barton,

1980), absolute versus relative improvement in test scores (Campbell,

Fairey, & Fehr, 1986), true differences between self and other's test

scores (Crocker, Thompson, McGraw, & Ingerman, 1987), and predicting

future success (Alloy, 1987).

The Self-Serving Bias and Depressive Realism

The self-serving bias and depressive realism have been proposed to explain information processing tendencies displayed by individuals with high and low self-esteem. Research indicates that people with average or high self-esteem display self-enhancing illusions, and that people with low self-esteem may actually hold veridical perceptions of themselves and their social surroundings. In addressing self-perceptions of social competency, Lewinsohn et al. (1980) asked normal, psychiatric-nondepressed, and depressed subjects to assess their social skills following their participation in an observed 20 minute social group function. As rated by blind coders, the depressed individuals were obviously more deficient in their skills than the normal controls. However, when comparing the subjects' ratings with those of the coders, the depressed individuals assessed their lack of skills accurately while the nondepressed subjects (normal and psychiatric) over-rated their abilities. This ability to recognize the truth, although negative, by individuals with low self-esteem is referred to as depressive realism.

In another study, Alloy and Ahrens (1987) asked depressed and nondepressed college students to make predictions regarding their own and their classmates' futures. They found that while depressed subjects were more pessimistic than nondepressed subjects in predicting their own futures, the depressed were equally as pessimistic about everyone else's future. This global pessimistic theme, as well as lowered self-esteem, is considered one of the key traits of depression (Beck, 1967). Nondepressed students, on the other hand, showed evidence of a self-serving bias in that their forecasts were more positive for themselves than for others.

Further evidence for depressive realism was obtained by Crocker et al. (1987), who manipulated test feedback (success or failure) to high, medium, and low self-esteem subjects. When asked to rate themselves and other subjects on a number of traits, subjects in the high self-esteem group receiving failure feedback tended to derogate the other subjects. Apparently, when high self-esteem individuals are faced with ego threatening information, the self-serving bias kicks in to restore the self-perception, allowing individuals to maintain their

healthy level of self-esteem. This perspective suggests that

self-enhancement may be motivated by perceived attacks on the self

(Brown, Collins, & Schmidt, 1988). Moreover, it suggests that people

arrange their social environments so as to be consistent with their

self-views. The role of self-consistency motivation in the

maintenance of one's present level of self-esteem is discussed next.

Self-Consistency Theory

Self-consistency refers to the notion that people attempt to control

and predict their world by behaving in ways that perpetuate and

confirm their self-perceptions (Swann, 1987; Swann, Griffin,

Predmore, & Gains, 1987). From this perspective, people utilize at

least two strategies to sustain their self-beliefs. First, they can

create social environments that foster the survival of their self-view.

They can do this by strategically choosing partners and social settings

(Swann & Pelham, 1987), displaying identity cues (Schlenker, 1980), or

utilizing interaction strategies (Swann & Read, 1981). The second way

that people sustain their self-beliefs is to see more self-confirmatory

evidence than actually exists. They do this by selectively attending to

(Swann & Read, 1981), retrieving (Crary, 1966), and interpreting

(Markus, 1977) information that is consistent with their self-concept.

In a test of self-consistency theory, Swann et al. (1987) had

subjects who were either high or low in self-esteem deliver a

pre-written speech. Subjects were then given feedback in terms of

their social abilities (high or low/self-confidence, comfort around

others, and social competence) as rated by an observer. Following the

feedback session, subjects were asked to rate the accuracy and

competence of the observer. The results supported the consistency

model in that subjects receiving feedback that confirmed their

self-esteem (high self-esteem/high social abilities or low

self-esteem/low social abilities) rated the observers as more accurate

and competent. Other studies demonstrating self-enhancement for high

self-esteem but not for low self-esteem individuals can also be

further understood in terms of the self-consistency model.

A novel study by Campbell et al. (1986) compared the attention

placed on relative or absolute information as a function of self-esteem.

These researchers gave high and low self-esteem subjects feedback as

to how they and a friend performed on two tests. In one condition, the

subjects' results were not very good, although they were better than

their friends' performance. This was the relative condition; compared

to the friend the subject did relatively well. In the absolute condition,

the subjects' test results were better than in the relative condition but

lower than their friends' absolute condition test results. Thus,

although the subject did poorer than the friend on the second test, the

results were an improvement over the first test. When asked to rate

their success, subjects with high self-esteem stated they had done

better in the relative condition, supporting the need for

self-enhancement through social comparison. The low self-esteem

group, however, reported greater success in the absolute condition, a

judgment based on objective fact rather than a self-serving strategy.

In support of the self-consistency theory, it may be that because low

self-esteem individuals do not expect to do well and those with high

self-esteem do, each individual attended to the information that best

verified their self-perception.

Although depressive realism theory and self-consistency theory have both received considerable empirical support, we should note that an interesting discrepancy exists with regard to how the two theories propose that low self-esteem individuals perceive their worlds. The self-consistency model states that both low and high self-esteem individuals modify and distort reality in order to maintain a view that is consistent with their self-image. Depressive realism, on the other hand, states that low self-esteem people are realistic in their perceptions and that high self-esteem individuals are the ones who distort reality in a self-serving direction. Resolving this theoretical discrepancy is one of the goals of the present research.

<u>Verifiability Theory</u>

A third relevant theoretical position that proposes conditions under which self-serving biases are most likely to emerge is behavioral verifiability theory. From this perspective, actions that are high in verifiability are less susceptible to self-serving biases. To illustrate, intelligence and athletic ability are verifiable because one can take a test or play a game and objectively determine one's level of ability.

Social or moral behaviors, however, are not as verifiable because there

are no clear, objective measures as to higher or lower social or moral

behaviors (as an IQ score for intelligence). As a result of this

differential verifiability, people should be more likely to exaggerate

their moral qualities than their intellectual ones.

Support for this model has been provided in both a social (Brown et

al., 1988) and cognitive dimension (Allison, Messick, & Goethals, 1989;

Van Lange, 1990). Brown et al. argue that everyone is in need of

self-enhancement. Due to the need for self-consistency, however, high

and low self-esteem individuals pursue this goal differently. To

illustrate this idea, Brown et al. conducted a study in which subjects

were divided into groups and then the groups were divided once again.

They were therefore direct members of this last group but vicarious

members of the group formed by the first split. Each group was to

complete a creativity task and then to rate the results produced by

each group. In support of the verifiability model, high self-esteem

subjects showed favoritism for the group in which they were directly

involved. This self-serving bias of a highly verifiable nature (they

were group members) in no way threatened their positive self-view;

rather, it maintained consistency. Subjects with low self-esteem,

however, showed favoritism for the group in which they were vicarious

members (low verifiability); therefore, the success was not directly

attributable to them. This form of indirect self-enhancement also

maintains consistency. The low self-esteem individuals were not

taking personal credit for the success, thereby not threatening their

low self-concept.

This same distinction is made when subjects are asked to compare

themselves and others on behaviors reflecting intelligence or morality.

Verifiability theory would predict larger self-enhancing biases for

morality, a nonverifiable quality, than for intelligence, a verifiable one.

To test this idea, Allison et al. (1989) had subjects ascribe the

probability of performing different moral and intelligent acts for

themselves and others. As expected, a greater self-serving bias was

found for those behaviors that were not verifiable. That is, subjects

rated themselves as more likely to perform moral acts than others but

no more likely to perform intelligent acts. Allison et al. proposed that

the self-serving bias is limited by the "publicity, specificity and

objectivity of the dimensions on which these beliefs are held" (p. 275).

In a similar study, Van Lange (1990) had subjects write 2 stories,

one about how an example of their behavior has affected another, and

the other about how someone else's behavior has affected them.

Subjects then rated the 2 stories for moral and intelligent content.

Consistent with Allison et al.'s (1989) findings, subjects showed a

self-serving bias by rating their behavior as better than the other

person's, and this was especially true for the moral dimension. Van

Lang and Allison et al. explain this effect as illustrating people's need

to maintain positive rather than negative self-views. This

self-serving belief, however, must be truthful to be believable.

Truthful in this sense may refer to not being able to be proven false,

and is thus limited to a nonverifiable quality such as morality.

The Present Study

In attempting to identify the process by which self-serving biases

are moderated by levels of self-esteem, researchers have overlooked an

important issue. As mentioned above, predictions generated from the

depressive realism perspective differ from those based on

self-consistency theory. Specifically, these two theoretical positions

differ in their view of how depressives an non-depressives perceive

and interpret positive and negative events. If self-consistency is

operating, then depressives should renounce their successes while

non-depressives should acknowledge theirs. But if depressive realism

is operating, then depressives should acknowledge their successes

whereas non-depressives should exaggerate theirs.

Not only should successful or unsuccessful outcomes affect

self-serving tendencies, but the verifiability of those outcomes should

also play a central role. The present study assumes, along with Allison

et al. (1989), that moral aptitude is less verifiable than intellectual

aptitude. Half of the subjects were classified as having high

self-esteem, whereas the other half were classified as having low

self-esteem. Moreover, half the subjects were given an intelligence

test while the other half were tested on their moral qualities.

Subjects were given either success or failure feedback about their

performances and then asked to predict future success or failure on the

same test for themselves and for their classmates.

In order to maintain a consistent self-image, individuals with high self-esteem were expected to exhibit a greater self-serving bias for both verifiable (intelligence test) and nonverifiable (morals test) dimensions than were low self-esteem subjects. In support of the self-consistency model and self-enhancement theory, it was predicted that those with high self-esteem receiving information contrary to their self-concept (failure feedback), would be most likely to exaggerate the expected differences between themselves and others in order to reestablish their self-perception. Individuals with high self-esteem receiving success feedback were also expected to show a self-serving bias but not to the extent predicted for high self-esteem subjects presented with failure feedback.

As predicted by the self-consistency and verifiability models, those with low self-esteem were not expected to exhibit a self-serving bias in the verifiable (intelligence test) dimension. It was unclear whether low self-esteem subjects would show self-enhancement in the nonverifiable (morals test) situation, as predicted by the verifiability

model, or if they would maintain a negative self-view, as predicted by the self-consistency model. Low self-esteem subjects receiving failure feedback consistent with their self-image were expected to predict similar low test results for themselves and others due to their general pessimistic view. It was it was also unclear whether individuals with low self-esteem receiving success feedback would be able to recognize this positive achievement and predict success for themselves, as predicted by depressive realism theory, or if they would derogate the differences between predicted outcomes for themselves and others in order to maintain their self-view, as predicted by self-consistency theory. If any self-enhancement by low self-esteem individuals was to be seen, it was expected from those receiving success feedback in the nonverifiable (morals test) dimension.

Method

Subjects

The subjects were 36 high (12 male and 24 female) and 41 low (9 male and 32 female) self-esteem psychology students from the

University of Richmond who participated to fulfill their course

requirement.[1]

Design

This study employed a 2 X 2 X 2 factorial design, with subjects'

self-esteem (high or low), test feedback (success or failure), and test

dimension (intelligence or morals) as between-subjects factors.

Materials

Subjects self-esteem was assessed with the Rosenberg Self-Esteem

Inventory (Rosenberg, 1965). This latter scale is a well-validated

private, global evaluation of the self. The inventory contains 10 items

on which the subjects rate their level of agreement on a 4 point scale.

Reported test-retest reliabilities are greater than .80 (Wylie, 1979).

Possible scores on the Rosenberg inventory range from 10 to 40.

Subjects in the intelligence test condition were administered one of

the analytic sections from a practice book for the Graduate Record

Exam (Brownstein, Weiner, Green, & Hilbert, 1990). See Appendix A for

a copy of this test. subjects in the morals test condition were given

20 moral dilemmas from the game Scruples (Milton Bradley Company,

1987). See Appendix B for a copy of these questions.

Procedure

During the first week of their Introductory Psychology course at the

University of Richmond, students completed a demographics

questionnaire and the Rosenberg Self-Esteem Inventory (Rosenberg,

1965). Students were designated as either high or low self-esteem via

a median split. Due to the homogeneity and affluence of the student

population, it was not surprising to find 74% of the original subject

pool above 30 on this self-esteem scale. The final high and low

self-esteem groups thus consisted of scores ranging from 36 to 40 and

17 to 33 respectively. It must be noted, however, that of the 41

subjects in the low self-esteem group, 3 were below 21 and the rest

ranged from 24 to 33. Within the next 2 to 3 weeks students were

solicited based on their test scores.

To establish a relationship made between low self-esteem and

depression, subjects were first administered the Beck Depression

Inventory (BDI) (Beck, 1967). The BDI is a well validated measure of

enduring depressive symptoms (Hammen, 1980) .

One half of the subjects were then given the intelligence test,

whereas the other half were given the morals test. Following the test

subjects were given an unrelated filler task while waiting for their

results. Half of the high and half of the low self-esteem subjects

randomly received positive feedback (93% correct for intelligence

measure or 93% achievement of moral development for adults) and the

other half received negative feedback (48% correct for intelligence

measure or 48% achievement of moral development for adults).

Importance of confidentiality was stressed. To prevent leakage, the

feedback was distributed in envelopes and subjects were instructed not

to discuss it with each other. Subjects were told that this study

represented an effort to establish norms for a test currently used in

many universities for consideration for adoption at the present

university.

Upon receipt of the results, students completed a short

questionnaire in which they were asked how well they believed they

would perform next semester on the same test, and how well the average student at the University of Richmond would perform. As a manipulation check, subjects were asked to indicate how well they believed they performed on the test.

To reduce any possible negative side effects associated with participating in this study, subjects were debriefed immediately concerning the nature and purpose of the deception. We also probed for subjects' suspiciousness of the true intent of the study.

Results

Manipulation Check

As a manipulation check, subjects were asked, "How well do you believe you performed on this test?" Subjects were asked to provide a number from 0 to 100. These data were analyzed using a one-way analysis of variance (ANOVA). A significant difference between the two feedback groups was found, $F (1, 75) = 61.31, p < .00001$. Results indicate that subjects receiving success feedback believed they had performed better ($M = 83.57$) than subjects receiving failure feedback ($M = 54.25$).

Relationship Between Self-Esteem and Depression

A Pearson-product moment correlation was computed to determine the relationship between the Rosenberg Self-Esteem Inventory and the Beck Depression Inventory. The correlation was found to be statistically significant ($R = -.54$, $p < .01$), indicating that the lower the subjects' self-esteem, the greater their level of depression. This result suggests that self-esteem may be an enduring quality within individuals rather than a temporary or situation specific mood state.

Subjects Performance Predictions

To determine how well subjects believed they would perform on a future morals or intelligence test compared to others, we computed a 2 (Self-Esteem: high, low) X 2 (Dimension: intelligence, morality) X 2 (Feedback: success, failure) X 2 (Target: self, other) ANOVA with repeated measures on the last factor. The results revealed several statistically significant effects.

First, a main effect for feedback was found, $F (1, 69) = 84.78$, $p < .00001$. Subjects receiving success feedback had overall higher predictions ($M = 84.51$) than subjects receiving failure feedback ($M =$

58.21). While this finding is not relevant to our central hypotheses, it

validates the credibility of the feedback. A main effect was also found

for target, F (1, 69) = 11.54, p < .01. Overall subjects predicted better

success for themselves (M = 73.80) than for their classmates (M =

68.92). This result illustrates people's self-serving tendency to

believe that they are better than others.

INSERT TABLE 1 ABOUT HERE

Two significant interactions were also obtained. First, there was an

interaction between self-esteem and target, F (1, 69) = 4.95, p < .03.

The means associated with this interaction are displayed in Table 1.

As this table shows, the self-serving bias reported above was

operating for subjects with high self-esteem but not for subjects with

low self-esteem. A simple effects test corroborates this

interpretation. Subjects with high self-esteem indicated that they

would perform significantly better on a future test (M = 77.01) than

would others (M = 68.93), F (1, 69)) = 15.14, p < .001. In contrast,

subjects with low self-esteem indicated that they would perform roughly the same on a future test ($\underline{M}$ = 70.59) as would others ($\underline{M}$ = 68.91), $\underline{F}$ <1. This finding supports our hypothesis that self-serving biases are moderated by levels of self-esteem.

INSERT TABLE 2 ABOUT HERE

Second, there was a dimension by target interaction $\underline{F}$ (1, 69) = 4.56, $\underline{p}$ < .04. The means associated with this interaction are displayed in Table 2. As predicted by the verifiability model, subjects were more likely to show a self-serving bias for the nonverifiable dimension, morality, than for the verifiable dimension, intelligence. This interpretation is further supported by a test of simple effects. Subjects who took the morals test predicted that they would perform significantly better on a future test ($\underline{M}$ = 77.30) than would others ($\underline{M}$ = 69.35), $\underline{F}$ (1, 69) = 16.70, $\underline{p}$ < .0001. However, subjects who took the intelligence test predicted that on future tests they would do about the same ($\underline{M}$ = 70.30) as would others ($\underline{M}$ = 68.49), $\underline{F}$ < 1. This finding

supports the hypothesis that the self-serving bias is further moderated

by the verifiability of the task dimension.

INSERT TABLE 3 ABOUT HERE

Two three-way interactions were found to be marginally significant.

First, there was a three-way interaction between self-esteem,

dimension, and target, F (1, 69) = 3.47, p < .07. The means associated

with this interaction are displayed in Table 3. This effect indicates

that subjects with high self-esteem showed a large self-serving bias

regardless of dimension. However, subjects with low self-esteem

showed a significant self-serving bias for the moral dimension but not

for the intelligence dimension. This finding suggests that although

subjects with low self-esteem are sensitive to the verifiability of a

behavioral dimension, subjects with high self-esteem are not.

INSERT TABLE 4 ABOUT HERE

Finally, there was a marginal three-way interaction between self-esteem, feedback, and target, F (1, 69) = 2.99, p < .09. The means associated with this interaction are displayed in Table 4. Subjects with high self-esteem showed a self-serving bias regardless of feedback, i.e., both success and failure feedback engendered self-enhancing tendencies. However, the trend suggests that low self-esteem individuals receiving success feedback tended to self-enhance, whereas low self-esteem individuals receiving failure feedback showed no tendency to self-enhance. This again offers tentative support for depression realism.

Discussion

The theory underlying the present research states that while all individuals may need to feel good about themselves through self-enhancement (Brown et al., 1988), only individuals with high self-esteem are equipped with the mechanism to do so directly. Individuals with low self-esteem, on the other hand, show depressive realism in that they are as negative about themselves as they are about others (Alloy et al., 1987). The ability to self-enhance was proposed to

be further modulated by the verifiability of the task being described

(Allison et al., 1989). It was therefore predicted that individuals with

high self-esteem would show a greater self-serving bias than

individuals with low self-esteem. Additionally, a greater self-serving

bias was expected when the task was low in verifiability, as in the

morals test, and thus less susceptible to being disproven than a task

high in verifiability such as the intelligence test.

We were also interested in the pattern of subjects' predictions in

response to success or failure feedback. Based on self-consistency

theory (Swann et al. 1987), it was expected that subjects would

predict scores for themselves and others that were consistent with the

way they viewed themselves. Subjects receiving information contrary

to their self-image (success feedback for low self-esteem and failure

feedback for high self-esteem) would then need to predict scores for

themselves and others that would reestablish a consistent view. Thus

low self-esteem subjects make lower predictions for themselves

compared to others, and high self-esteem subjects would show a

reverse pattern, namely, a self-serving bias. Subjects receiving

information consistent with their self-concept, thereby verifying their

self-esteem were not expected to have much of a discrepancy in their

self-other predictions.

Overall, the data substantiated several of these predictions. For

subjects' with high self-esteem, the findings supported a self-serving

bias and the self-consistency model. Moreover, verifiability theory did

not hold for these subjects, as they tended to inflate their predicted

success over their predictions for others regardless of feedback

(success or failure) or task dimension (intelligence or morals),

supporting a self-serving bias. As predicted by the self-consistency

model, they showed a greater self-enhancement upon receiving failure

feedback, thus reasserting or verifying their superior position. It was

of great interest to find that these high self-esteem individuals were

willing to self-enhance in the face of failure even when the task

dimension was verifiable (intelligence test).

Behavior of individuals with low self-esteem appeared to be

governed by depressive realism when the task was verifiable

(intelligence test), but they were able to show a self-serving bias

when the task was nonverifiable (morals test). In other words, these individuals may possess motivations to self-enhance but not at the risk of getting caught (Allison et al., 1989). These low self-esteem subjects were therefore sensitive to the dimension on which they self-enhanced.

Low self-esteem subjects, however, did not have the resource found in those with high self-esteem (a self-serving bias) when given failure feedback, but rather, showed a global pessimism (Beck, 1967). This global pessimism was reflected in their tendency to predict equally low scores for themselves and for others as described by depressive realism. In addition, there was a trend for these individuals to self-enhance when given success feedback, again predicted by depressive realism.

On a positive note, these low self-esteem subjects did not support the self-consistency model. That is, they did not predict lower scores for themselves (self-derogation) upon receiving information contrary to their self-esteem (success feedback). However, this may be due to the majority of the low self-esteem group actually being comprised of

individuals with average self-esteem. Within this group there were

only 3 subjects with self-esteem scores lower than 21. Upon

reviewing data from one subject who was truly low in self-esteem , a

self-derogation was seen in response to success feedback but only for

the intelligence test. Further studies including subjects with a true

range of high, medium and low self-esteem would enable us to test

several of our hypotheses more effectively.

The data also suggest modifications in the self-consistency and

verifiability models. Contrary to the self-consistency model, subjects

with low self-esteem did self-enhance in the morals test condition. At

least two explanations are possible. First, as mentioned above, the

composition of the low self-esteem group was such that it was

comprised of moderate self-esteem individuals. However, since a

significant difference was found for self-enhancement between the

high and low self-esteem groups the results merit more of a

qualitative explanation.

A second reason for self-esteem differences may be that low

self-esteem individuals want to self-enhance but need the security

that the the low verifiability gives them. It appears that they are not

as willing to risk being caught at self-enhancing as are those with high

self-esteem. This idea is further supported by Brown et al.'s (1988)

finding that low self-esteem subjects would only self-enhance in

groups for which they were vicarious members. Because they were not

direct group members, there was less of a chance of being caught at

self-enhancing. It appears then that both depressive realism with the

verifiability model better explains low self-esteem behavior.

People with high self-esteem, on the other hand, were not sensitive

to the verifiability issue and self-enhanced regardless of test

dimension. It may be that these individuals' need to verify their

self-esteem is so great that they ignore important information in

processing information about the self. This interpretation is

consistent with previous research indicating that individuals in

positive mood state are less likely to process information in a thorough

and systematic fashion than are individuals in a neutral or negative

mood state (Worth & Mackie, 1987).

This view is further supported by the differential-attributional

style hypothesis (Alloy et al., 1987). According to this hypothesis,

nondepressed individuals weight internal rather than external cues

when making predictions about the self as compared to others.

Depressed individuals, on the other hand, weight internal and external

cues evenly, a perspective consistent with depressive realism. Thus,

high self-esteem subjects may have been sensitive to internal cues

(self-perception) and may have ignored external cues (verifiability of

the task) in order to arrive at a decision that was consistent with their

self-image. In other words, their rose colored glasses may be very

dark . Therefore, the self-consistency model better predicts the

behavior of individuals with high self-esteem.

The findings provided by the two marginally significant three-way

interactions are central to this thesis and are therefore worthy of

some discussion. As mentioned above, the actual difference in

composition between the high and low self-esteem groups were slight

at best, and therefore finding even marginal significance was a

surprise. The fact that these two self-esteem groups did differ in

their tendency to self-enhance as a function of verifiability (test

dimension) and feedback suggests that further research is merited in

which true high, medium and low self-esteem groups are recruited. It

is possible that our marginally significant effects may be strengthened

with a clearer differentiation between high and low self-esteem

subjects. Specifically, both self-enhancement and self-derogation

might be seen in true low self-esteem subjects as a function of

feedback by task dimension.

Finally, we would like to offer some possible implications of our

data. It seems that individuals with high self-esteem are better able

to use this technique of self-enhancement strategies under any

circumstances. It may be helpful to monitor the self-talk of these

individuals in order to better teach successful cognitive strategies to

depressed individuals. What can they be thinking that makes them

believe they are so wonderful in the face of contrary or threatening

information? Teaching and encouraging low self-esteem individuals to

self-enhance at first in dimensions that are not verifiable such as

morals (Allison et al. 1989), vicarious group membership (Brown et al.,

1988) or interpersonal behaviors (Van Lange, 1990), for example, may

be met with less resistance. Once they are fluent with this task, it

may be easier to move on to the riskier realm of verifiability. Though

it has not been established what came first, self-esteem or

self-enhancement, what is apparently working well for those with high

self-esteem is, "if ya got it, flaunt it".

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<u>Directions:</u> Each question or group of questions is based on a passage or set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. For each question, select the best answer choice given.

<u>Questions 1–4</u>

Mrs. F, official hostess of New York City, has invited several wives of delegates to the United Nations for an informal luncheon. She plans to seat her eleven guests so that each lady will be able to converse with at least the person directly to her right or left. She has prepared the following list.

   Mrs. F speaks English only.
   Mrs. G speaks English and French.
   Mrs. H speaks English and Russian.
   Mrs. J speaks Russian only.
   Mrs. K speaks English only.
   Mrs. L speaks French only.
   Mrs. M speaks French and German.
   Mrs. N speaks English and German.
   Mrs. O speaks English and French.
   Mrs. P speaks German and Russian.
   Mrs. Q speaks French and German.
   Mrs. R speaks English only.

1. Which of the following arrangements will meet Mrs. F's requirement?

   I.   FOLMPJHKGQNR
   II. FRNLPKHJGMQO
   III. FRGJHOLMQPKN

   (A) I only
   (B) II only
   (C) III only
   (D) I and II only
   (E) I and III only

2. If the ladies seated to the right of Mrs. P are respectively *MGHKFO*, who must sit at Mrs. P's left hand?

   (A) J
   (B) L
   (C) N
   (D) Q
   (E) R

3. If seven of the ladies have seated themselves in the following order, *NGFROMQ*, who must be the next lady seated?

   (A) H
   (B) J
   (C) K
   (D) L
   (E) P

4. Mrs. F has decided upon the following seating arrangement:
   R K G Q N F O L M P J H
At the last minute, Mrs. H and Mrs. P inform the hostess that they will not be able to attend. Which of the following adjustments will allow Mrs. F's seating requirements to be met?

   I.   Seat Mrs. J between Mrs. K and Mrs. G
   II. Seat Mrs. J between Mrs. Q and Mrs. F
   III. Seat Mrs. J to the right of Mrs. N

   (A) I only
   (B) III only
   (C) I or II only
   (D) II or III only
   (E) Neither I, II, nor III

5. Senator Johnson: No argument for this bill is valid, because no one would argue for this bill without having an ulterior motive: namely, the desire for personal gain.

The bill's sponsors would be committing the same error in reasoning as Senator Johnson if they responded by saying:

   (A) Of course we have ulterior motives. It is perfectly reasonable to support a bill in order to promote our personal interests.
   (B) The fact that passing a bill would benefit its sponsors does not mean that the bill should not be passed.
   (C) The fact that Senator Johnson has substituted a personal attack for a discussion of the merits of the bill leads us to suspect that he can offer no strong arguments against it.
   (D) Senator Johnson has no valid reason for opposing our bill; he is only doing so because we helped defeat his pork-barrelling bill last month.
   (E) Everyone is always motivated in part by a desire for personal gain; Senator Johnson is no exception.

6. Father: My daughter could be a star on Broadway if she could only get one big break. Why, you should see the rave reviews she received when she was the lead in her high school play.

The best way to counter the argument above would be to point out that

(A) big breaks are hard to come by on Broadway
(B) one big break does not ensure continued success in the theatre
(C) the standards on Broadway are much higher than they are at the high school level
(D) fewer plays are being produced on Broadway today than in the past
(E) relatively few aspiring actors ever become Broadway stars

7. Most persons who oppose gun control are conservatives; therefore, since Kathleen favors gun control, she is probably not a conservative.

The above argument most resembles which of the following?

(A) Most sociology professors are liberals; therefore Dr. Williams, who is a liberal, is probably a sociology professor.
(B) Most corporation presidents own a country home; if Ms. Steeples is a corporation president, she may or may not have a country home.
(C) Few major publishing firms publish much poetry; since Flame Press publishes only poetry, it is probably not a major publishing firm.
(D) Most sports cars are extremely expensive; since the new Venus Leopard is not a sports car, it is probably inexpensive.
(E) Most desert plants are cacti; therefore the cholla, a desert plant, is probably a cactus.

Questions 8–11

The Homer Museum of American Art is open daily except Monday from 11 a.m. to 5 p.m. Tuesdays and Thursdays the museum remains open until 8 p.m. The spring special exhibitions are: "Albert Pinkham Ryder, A Retrospective," which is on view from Friday, April 24, through Sunday, May 31, in the Pollock Wing; "Precursors of Thomas Eakins," from Friday, May 8, through Sunday, July 6, in the Third Floor Gallery; and "The Hudson River School," in the John Twachtman Gallery, which is closed Tuesdays, from Friday, May 1, through Sunday, May 24 only. The Pollock wing is closed Thursdays during May.

8. If Dan can visit the museum only after 5 p.m. or on Saturday, and does not wish to view more than one special exhibition in a day, he can see all three special exhibitions in the briefest time by starting with

(A) "The Hudson River School" on a Thursday
(B) the Ryder Retrospective on a Saturday
(C) "Precursors of Eakins" or the Ryder Retrospective on a Tuesday
(D) "Precursors of Eakins" on a Thursday
(E) any exhibition on a Saturday

9. Ellen wishes to visit the three special exhibitions on successive Thursdays. This is only possible if she visits

I.   the Ryder Retrospective in April
II. "The Hudson River School" second
III. "Precursors of Eakins" immediately following the Ryder Retrospective

(A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I, II, and III

10. Ralph can visit all three special exhibitions on one day if he goes on

I.   any Saturday in May
II. the second, third, or fourth Saturday in May
III. any Tuesday or Friday between May 5 and May 22

(A) I only
(B) II only
(C) III only
(D) I and III only
(E) II and III only

11. Terry visits the museum on an afternoon six days after the opening of "The Hudson River School." Which of the special exhibitions may he visit?

I.   The Ryder Retrospective
II. "Precursors of Eakins"
III. "The Hudson River School"

(A) I only
(B) III only
(C) I and II only
(D) II and III only
(E) I, II, and III

Questions 12–18

At a symposium on the possible dangers of the industrial chemical PBX, three pro-industry spokespersons are to be seated to the left of the moderator and three critics of PBX to the right of the moderator. The speakers are Drs. Albert, Burris, Cathode, Durand, Ettis, and Felsenstein.

(1) The person delivering the paper "Epidemiological Aspects of PBX" is seated immediately between Dr. Albert and Dr. Durand.

(2) The persons delivering "Public Health and PBX" and "Radiological Aspects of PBX" are close friends and insist on sitting together.

(3) Felsenstein is placed two seats to the left of the moderator.

(4) As heavy smoking is repugnant to the moderator, she insists that the person delivering "PBX: Benign or Malignant," a heavy smoker, be seated at one end of the table.

(5) Cathode, delivering "The Impact of PBX on the Environment," is seated to the left of Felsenstein.

(6) Albert, a critic of PBX, is seated to the left of Ettis.

12. The pro-industry spokespersons are

(A) Albert, Felsinstein, Durand
(B) Felsenstein, Burris, Albert
(C) Cathode, Felsenstein, Ettis
(D) Albert, Burris, Durand
(E) Cathode, Felsenstein, Burris

13. The person seated immediately to the left of the moderator is

(A) Albert
(B) Burris
(C) Cathode
(D) Durand
(E) Ettis

14. Assuming it is one of the papers delivered at the symposium, "PBX and the Digestive Tract" must be by

(A) Albert
(B) Burris
(C) Durand
(D) Ettis
(E) Felsenstein

15. Which of the following cannot be determined on the basis of the information given?

I. The author of "Public Health and PBX"
II. The title of the paper delivered by Durand
III. The identity of the two friends who insist on being together

(A) I only
(B) I only
(C) III only
(D) I and II only
(E) II and III only

16. Given the seating rules as stated, which of the numbered statements are logically sufficient to establish the position of Dr. Ettis and the title of the paper she delivers?

(A) 1, 3, 4
(B) 1, 2, 3, 4
(C) 1, 3, 5, 6
(D) 1, 4, 5, 6
(E) 1, 3, 4, 5

17. The symposium is expanded to include a seventh speaker. If he is seated exactly midway between Cathode and the moderator, he will sit

(A) to the left of the author of "Radiological Aspects of PBX"
(B) one seat to the right of the moderator
(C) two seats to the right of Durand
(D) three seats to the left of Albert
(E) four seats to the left of the author of "PBX: Benign or Malignant"

18. The symposium is further expanded to include an eighth speaker. If she is seated exactly midway between Durand and the author of "Public Health and PBX," which of the following must be true?

(A) The eighth speaker must be seated to the right of the moderator.
(B) Burris must be the author of "Radiological Aspects of PBX."
(C) The eighth speaker must be seated on the same side of the moderator as Felsenstein.
(D) The moderator must be seated next to the author of "Public Health and PBX."
(E) The eighth speaker must be seated immediately to the left of Ettis.

Questions 19–22

A is the father of two children. B and D, who are of different sexes.
C is B's spouse
E is the same sex as D.
B and C have two children: F, who is the same sex as B, and G, who is the same sex as C.
E's mother, H, who is married to L, is the sister of D's mother, M.
E and E's spouse, I, have two children, J and K, who are the same sex as I.
No persons have married more than once and no children have been born out of wedlock. The only restrictions on marriage are that marriage to a sibling, to a direct descendant, or to more than one person at the same time are forbidden.

19. F is

(A) G's brother
(B) G's sister
(C) B's daughter
(D) D's niece or nephew
(E) the same sex as H

20. According to the rules, D can marry

(A) F only
(B) G only
(C) J only
(D) J or K only
(E) F, J, or K

21. If L and H divorced, H could marry

I. D only
II F
III. D or G

(A) I only
(B) II only
(C) III only
(D) I or II, but not both
(E) II or III, but not both

22. If the generation of F and K's parents and their siblings contains more females than males, which of the following must be true?

(A) There are more females than males in F and K's generation.
(B) J is male.
(C) A is the same sex as D
(D) K and G are the same sex.
(E) D is H's nephew.

Questions 23–25

The internal combustion engine, which powers all private motorized vehicles, should be banned. It burns up petroleum products that are needed to produce plastics, synthetics, and many medicines. Once all the oil is gone, we will no longer be able to produce these valuable commodities. Yet we do not have to burn gasoline to satisfy our transportation needs. Other kinds of engines could be developed if the oil companies would stop blocking research efforts.

23. The argument above depends on which of the following assumptions?

I. We are in imminent danger of running out of oil.
II. Alternative methods of producing plastics will not be found before the oil runs out.
III. If they so desired, the oil companies could develop methods of transporation not based on the burning of petroleum.

(A) I only
(B) II only
(C) I and II only
(D) II and III only
(E) I, II and III

24. The argument above would be most weakened by the development of which of the following?

(A) An internal combustion engine that operated on one-tenth the gasoline used in a normal engine
(B) A car that operated on solar energy stored in special batteries
(C) A method of producing plastic that used no petroleum products
(D) A synthetic oil with all the properties of natural oil
(E) A means of locating numerous undiscovered oil fields

25. The argument above would be most strengthened if which of the following were true?

(A) One of the oil companies has suppressed the discovery of an engine that burns only alcohol.
(B) Some of the medicines that require petroleum for their production help to control and cure several of the world's most deadly diseases.
(C) The world's current oil reserves are about half of what they were 30 years ago.
(D) In high pollution areas, automobile exhaust fumes have been shown to cause high rates of lung cancer and heart disease.
(E) When gasoline is burned inside an auto engine, less than one-fourth of the energy produced is used to propel the vehicle.

Appendix B

Please read each problem over carefully and consider what you would do. In the space provided, indicate what you would do in the given situation and more importantly explain why/how you have reached this conclusion.

1. You're on a first date with someone special at a very elegant restaurant with very intimidating waiters. Your filet mignon arrives overdone. Do you send it back to the kitchen?

_____
_____
_____
_____

2. You work at a restaurant that serves rolls with every meal. Often the rolls are returned to the kitchen seemingly untouched. Would you serve them again?

_____
_____
_____
_____

3. You have to go to court on a drunk driving charge. Do you tell your boss the truth about why you need to take the time off from work?

_____
_____
_____
_____

4. You discover that you were invited to your cousin's wedding only because other guests canceled out. Do you still go?

_____
_____
_____
_____

5. You're driving at night. The car behind you is blinding you with its high beams. Finally, the car passes you and is now ahead of you. Do you turn your high beams on?

_____

_____

_____

_____

6. Trying to impress your newest date, you tell him/her that you're an expert skier when you're really only a beginner. He/She surprises you with a ski weekend at a new resort. Do you tell him/her you "snowed" him/her before you leave on the trip?

_____

_____

_____

_____

7. Your father is having an affair. Your mother is unaware of it. Do you tell her?

_____

_____

_____

_____

8. A friend, whom you're very competitive with, signs up for an outdoor survival program-the challenge is to spend three days and nights alone in the woods. Your friend dares you to test your resources in the same program. Would you?

_____

_____

_____

_____

9. You've always been attracted to your best friend's boy/girlfriend. They just broke up! Would you ask your best friend's ex out on a date?

_____

_____

_____

_____

10. Friends loan you a few movies for you VCR. One mislabeled tape shows your friends frolicking nude on a beach. Do you watch the rest of the "vacation" tape?

_____

_____

_____

_____

11. A radio talk show host you've been listening to for years makes an insulting remark about people of your ethnic heritage on the air. Do you call the radio station to complain?

_____

_____

_____

_____

12. You and your boy/girlfriend have an intense sexual relationship. Your lover calls at work requesting a brief romantic interlude at a friend's nearby apartment. You must make up an excuse and leave work to keep the rendezvous. Do you?

_____

_____

_____

_____

13. An overweight friend complains about the poor workmanship of clothes because seams often pull out and zippers always break. Do you suggest that losing weight might help?

_____

_____

_____

_____

14. Your current boy/girlfriend asks you how many boy/girlfriends you've had in the past. Do you tell the truth?

_____

_____

_____

_____

15. You're in a busy shoe store and are anxious to be served. The sales clerk begins to wait on you before another customer who was there longer. Do you refer the clerk to the other customer?

_____

_____

_____

_____

16. You're seated in a non-smoking section of an airplane. Two seats away in the same non-smoking section, a passenger lights up. Do you ask the smoker to put out the cigarette?

_____

_____

_____

_____

17. From your living room window, you see two members of a particular religious sect walking towards your door. The group is dedicated to making converts. Do you pretend you are not home?

_____

_____

_____

_____

18. An artist friend gives you one of her framed paintings as a gift. You're not wild about the piece, but she frequently stops by your dorm room for a visit. Do you hang it?

_____

_____

_____

_____

19. You have just earned a degree in biology. Your best job offer comes from a laboratory that does experiments on live animals. Do you accept the job?

_____

_____

_____

_____

20. Passing a playground you witness two young children having a vicious fight. Do you intervene?

_____

_____

_____

_____

Author Notes

Footnotes

[1]Of the 77 students, 2 were African-American, 2 were

Asian-American and the remaining 73 were Caucasian. Of those

responding, 45 considered themselves Protestant, 22 Catholic, 2

Agnostic, 2 "none" and 1 Jewish. Forty-eight considered themselves

upper-middle class, 25 middle class and 2 lower-middle class.

Table 1

Mean Performance Predictions as a Function of Self-Esteem and Target

Self-Esteem	Target	
	Self	Other
High	77.01	68.93
	(20.47)	(19.57)
Low	70.59	68.91
	(20.06)	(17.04)

Note. Standard deviations are reported in parentheses.

Table 2

Mean Performance Predictions as a Function of

Test Dimension and Target

Dimension	Target	
	Self	Other
Intelligence	70.30	68.49
	(22.48)	(21.02)
Morals	77.30	69.35
	(18.34)	(15.49)

Note. Standard deviations are reported in parentheses.

Table 3

Mean Performance Predictions as a Function of Test Dimension,

Self-Esteem and Target

	Target	
Dimension	Self	Other
High Self-Esteem		
Intelligence	74.08	66.39
	(24.43)	(24.77)
Morals	79.94	71.47
	(17.49)	(15.34)
Low Self-Esteem		
Intelligence	66.53	70.59
	(20.78)	(18.46)
Morals	74.66	67.23
	(19.09)	(15.68)

Note. Standard deviations are reported in parentheses.