TOWARD A SELF-EVALUATION MAINTENANCE MODEL OF SOCIAL BEHAVIOR

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I. Introduction

This article describes some of the research that has kept me preoccupied over the last 6 to 8 years. The research explores social behavior through something called a Self-Evaluation Maintenance (SEM) model. In the space alloted I (1) briefly describe that model; (2) describe several studies to provide a feel for the kind of research that has been completed in an attempt to explore the predictions of the model; and (3) take a bird's eye view of the research and the model to establish the comprehensiveness of the research, the systemic nature of the model, and the interactive quality of its predictions. Next, the SEM model is fit into the perspective of related work including self-theories, social comparison theory, and Cialdini's BIRGing research. Then I review the epistemological status of the model. Here I hope to show that by focusing more on mediating processes there is something to be learned about emotion and affect. Finally, I conclude by pointing out some of the implications of the research for a variety of areas in psychology.

II. The Self-Evaluation Maintenance Model

The SEM model assumes that (1) persons behave in a manner that will maintain or increase self-evaluation and (2) one's relationships with others have a

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substantial impact on self-evaluation. The SEM model is composed of two dynamic processes. Both the *reflection process* and the *comparison process* have as component variables the closeness of another and the quality of that other's performance. These two variables interact in affecting self-evaluation but do so in quite opposite ways in each of the processes.

One's self-evaluation may be raised to the extent that a close other performs very well on some activity, that is, one can bask in the reflected glory of the close other's good performance. For example, one can point out her close relationship with her friend "the concert pianist" and thereby increase her own self-evaluation. The better the other's performance and the closer the psychological relationship, the more one can gain in self-evaluation through the reflection process. The intellectual parent of the reflection process is Cialdini's work on BIRGing (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976; Cialdini & Richardson, 1980).

The outstanding performance of a close other can, however, cause one's own performance to pale by comparison and decrease self-evaluation. Being close to a high-performing other invites comparison and results in one's own performance looking bad, thereby adversely affecting self-evaluation. And, again, the better the other's performance and the closer the psychological relationship, the greater the loss in self-evaluation through the comparison process. The intellectual parent of the comparison process comes from social comparison theory (e.g., Festinger, 1954; Goethals, 1984; Suls & Miller, 1977) and is most closely compatible with Wills' (1981) idea of downward comparison.

In both the reflection process and the comparison process, if closeness or the level of the other's performance decreases, the effects of the reflection and comparison processes are attenuated or perhaps even reversed. For example, if the other person has little to do with oneself (i.e., is psychologically distant), one cannot bask in the reflected glory of his/her accomplishments nor is one as likely to engage in comparison processes. Psychological closeness is like unit relatedness (Heider, 1958): friends are closer than strangers, persons with more characteristics in common are closer than persons with fewer characteristics in common, and so on. (See Campbell & Tesser, 1985, for a more complete discussion of the closeness variable.) Similarly, if the performance of the other is mediocre, one cannot increase self-evaluation by reflection nor is one as likely to suffer decreases in self-evaluation by comparison.

It should be apparent from the description that both the reflection and comparison processes depend on the same two variables but have opposite effects on self-evaluation: when closeness and performance are high there is a potential gain in self-evaluation through the reflection process but there is a potential loss through the comparison process. That being the case, the question arises: when will a close other's outstanding performance raise self-evaluation (via reflection) or lower self-evaluation (via comparison)? To answer this question, the *relevance* variable is introduced.

Individuals can recognize, value, and attend to the performance of others on a large variety of dimensions. However, any individual has a personal stake in doing well on only a small subset of performance dimensions. For example, being a good football player may be important to an individual's self-definition, but being a good speller may be inconsequential. A dimension is important to an individual's self-definition to the extent that he strives for competence on the dimension, describes himself in terms of the dimension, or freely chooses to engage in tasks that are related to the dimension. Another's performance is *relevant* to an individual's self-definition to the extent that the performance is on a dimension that is important to the individual's self-definition and to the extent that the other's performance is not so much better or worse than the individual's own performance that comparisons are rendered difficult.

According to the SEM model the relevance of another's performance to one's self-definition determines the relative importance of the reflection and comparison process. If the other's performance is highly relevant, then the comparison process will be relatively important and one will suffer by comparison to the close other's better performance. If the other's performance is minimally relevant the reflection process will be relatively important and one can enhance self-evaluation by basking in the reflected glory of a close other's better performance.

Perhaps the best way to illustrate the operation of the model is through an example. Suppose Alice and her good friend Barbara try out for the high school symphonic band and only Barbara is selected. Suppose further that doing well in music is an important part of Alice's self-definition. Relevance is high, so the comparison process should be more important than the reflection process: since Barbara is close and performs better than Alice, there is a potential loss in self-evaluation for Alice. To prevent this loss, Alice can do a variety of things: she can alter the closeness of her relationship with Barbara. She can spend less time around her or focus on ways in which the two of them are different, etc. By reducing the closeness, the impact of Barbara's better performance is reduced. Alice can also change her self-definition. She can spend less time studying music or decide that butterfly collecting is much more interesting, etc. By reducing the importance of music to her self-definition, the relevance of Barbara's performance is reduced. The reflection process becomes relatively more important with the consequence that Alice may actually gain in self-evaluation through her close friend Barbara's good performance. Finally, Alice can attempt to affect Barbara's performance. By reducing Barbara's performance she also reduces the threat of comparison. She can break Barbara's reed or hide her music for the next tryout or she can come to believe that Barbara's good performance was based on luck, etc. Or, she can attempt to alter her own performance by practicing more.

III. Some Research Examples

We have completed a number of studies now that tend to corroborate each of these strategies. Below I will review several of these studies to give you a feel for the kind of research that has been done. The studies look at changes in relative performance as a function of the relevance and closeness of the other person, changes in closeness as a function of the relevance and performance of the other, and changes in relevance or self-definition as a function of the other's closeness and performance.

A. THE EFFECTS OF CLOSENESS AND RELEVANCE ON PERFORMANCE

1. Affecting Another's Performance

Suppose an individual is able to facilitate or hinder another's performance. Under what conditions will she facilitate the other's performance? Under what conditions will she hinder the other's performance? The SEM model suggests that the answer to these questions is conditional. That is, helping or hurting another depends on an interactive combination of the relevance of the performance dimension and the closeness of the other. When relevance is high the comparison process is more important than the reflection process. Thus, one will suffer by the other's good performance particularly if the other is close. Therefore, in order to avoid this threat to self-evaluation, when relevance is high the closer the other the less help one would expect the other to be given. On the other hand, when relevance is low, the reflection process is more important than the comparison process. One may bask in the reflection of the other's good performance, particularly if the other is close. In order to enjoy that reflection, then, when relevance is low the closer the other the more help should be given to the other.

To test this set of hypotheses, Jon Smith and I (Tesser & Smith, 1980) designed a laboratory experiment. Male subjects were recruited and asked to bring a friend to the lab with them. Each session was composed of two pairs of friends. The four subjects were individually seated in booths around the experimenter. They were told that they would participate in a verbal task. For half the subjects, the task was described as measuring important verbal skills, leadership, et cetera (high relevance). The remaining subjects were told that the task was not related to verbal intelligence or leadership or anything of importance that we could determine (low relevance). The task was actually based on the game *Password*. Each of the subjects, in turn, was given an opportunity to guess a target word from a set of clues. The clues ostensibly came from the other three

participants who chose them from a list. Since the clues were graded in difficulty, the other participant could give clues that would make it easier or more difficult to guess the target word. The first two persons to guess the target word came from each of the two friendship pairs. By experimental arrangement, these two persons were made to perform poorly. It is the subsequent behavior of these two that we keep track of. If they want to help the other perform well (i.e., better than themselves), they could give clues that are easy; if they want to "hurt" the other (i.e., make him perform less well), they could give him difficult clues. The next two persons to perform were both friend and stranger to the former participants.

Common sense suggests (as well as a number of psychological theories) that one should help one's friend. However, the SEM model prediction is not that simple. When relevance is low and one can bask in the reflected glory of another's good performance, then, certainly one should help one's friend more than a stranger. However, this relationship should be attenuated and perhaps even reversed when relevance is high.

We looked at the number of experimental sessions in which the friend was helped more than the stranger and the number of sessions in which the stranger was helped more than the friend. The prediction from the SEM model was strongly upheld. When relevance was low the friend was helped more than the stranger in 10 of the 13 sessions. When relevance was high, the stranger was helped more than the friend in 10 of the 13 sessions.

Now I would like to turn to another laboratory study. This one, conducted with Jennifer Campbell (Tesser & Campbell, 1982), tested the same hypotheses. However, instead of examining a behavioral criterion, it examined cognitions or beliefs about the other's performance as a dependent variable. I think this study is particularly interesting because it has some very definite implications for psychological projection (e.g., Holmes, 1978; Sherwood, 1981). In most studies of projection, an individual is given information that he possesses an undesirable trait or attribute which he previously believed he did not possess. The extent to and conditions under which he attributes that trait to target others, that is, projects it, is then examined. From the present point of view, the feedback can be seen as a manipulation which lowers an individual's performance on a relevant dimension, thus increasing the target's relative performance. Given high relevance, the model predicts that individuals should tend to distort the target's performance downward (i.e., project the negative trait onto the target other). Further, the model predicts that this effect should be more pronounced given a psychologically close target than given a more distant target.

There is some evidence that such a pattern does occur with the projection of negative attributes (Secord, Backman, & Eachus, 1984; Bramel, 1963; Edlow & Kiesler, 1966). However, the obtained pattern can be explained by assuming that projection is a simple, nonmotivated information-processing strategy. If a person

learns something new about himself, he will, to the extent that the other is similar, simply assume that it is also true of the other (Holmes, 1978). This "information-processing" interpretation can be made to confront the SEM interpretation. The information-processing model implies that projection should increase with closeness regardless of the valence of the feedback: if one learns something positive about himself, he should be just as likely to project that as something negative. Furthermore, the information-processing model is mute with respect to the relevance of the feedback for the individual's self-definition. The SEM model makes different predictions. First, it does not necessarily predict any general tendency to project more onto close versus distant targets. Projection should be conditioned by the relevance and valence of the feedback. More positive and less negative feedback (i.e., positivity) should be projected onto a close target when the feedback is on a low-relevance dimension than when it is on a high-relevance dimension. Further, this difference in positivity in projection should be attenuated for a distant target. To explore the information-processing and self-evaluation maintenance explanations of social patterning in projection the following procedure was used.

Two pairs of female friends reported for each session. They were told that the study concerned personality and impression formation. Each subject was given an opportunity to describe herself to the others so that they might form impressions of one another. Then each of the participants was individually seated before a microcomputer which administered a number of items purportedly measuring social sensitivity and esthetic judgment ability. For each item, the subject was given two choices. After she chose what she thought was the correct answer and received feedback regarding that answer, she was asked to guess what answer her friend had given to the item or what answer one of the other participants, a stranger, had given to the item. The computer was programmed to provide feedback that the subject was right on half the items and wrong on half the items. Finally, subjects filled out a variety of questionnaires including items which measured the importance or relevance of social sensitivity and esthetic judgment to their own self-definition. In sum, each subject was given an opportunity to estimate the performance of a close (friend) or distant (stranger) other on both more or less relevant performance dimensions.

Recall the SEM prediction. Closeness and relevance should interact in affecting one's beliefs about the other's performance. When relevance is low one should be more charitable toward one's friend than toward a stranger. When relevance is high this effect should be attenuated, perhaps even reversed. Contrast this prediction with one which might be derived from a straightforward information-processing model. An information-processing model might suggest that one simply projects one's own answers onto one's friend. Since one's friend is more similar to the self that would be the best guess one could make.

We looked first at projection (i.e., the number of answers that the subject said

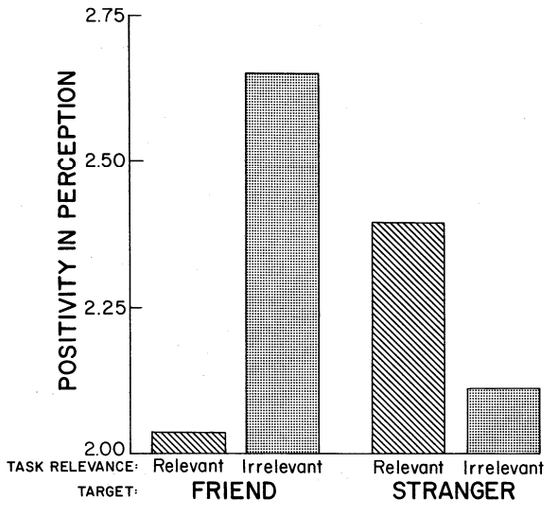

Fig. 1. Positivity in the perception of the performance of friends (close others) and strangers (distant others) on tasks which are relevant or irrelevant to one's self-definition. From Abraham Tesser and Jennifer Campbell, Self-evaluation Maintenance and the Perception of Friends and Strangers. *The Journal of Personality*, **50**:3, pp. 261–279. Copyright © 1982 by Duke University Press.

that the other gave that was similar to her own answers). There was not an overall difference as a function of closeness, as predicted by the information-processing model. Let us now consider positivity in perception, or the number of answers the subject guessed the other would get right. On this form of the dependent variable the SEM prediction is upheld. As can be seen in Fig. 1, when the task is irrelevant, subjects are more charitable toward the friend than toward the stranger. When the task is relevant, however, just the opposite is the case. Subjects are more charitable toward the stranger than toward the friend. Thus, the data appear to support the SEM model's predictions regarding defensive projection rather than predictions derived from the information-processing model.[1]

Some recent work on the false consensus effect (Marks & Miller, 1986; Ross, Green, & House, 1977) seems to support the "projection" aspects of these findings. According to the false consensus hypothesis people have a tendency to assume falsely that others will exhibit the same behaviors, attributes, and values

[1]The SEM hypothesis can also be contrasted with a balance theory hypothesis (Heider, 1958). Since one likes or is in a unit relationship with a friend but not necessarily with a stranger, one should, according to balance theory, attribute good things to one's friend. As noted in the text, this *general* difference was not obtained. Only in the low-relevance condition was one more charitable to one's friend.

as themselves. There has been a substantial amount of research on this bias and the general finding tends to substantiate the hypothesis (Mullen, Atkins, Champion, Edwards, Hardy, Story, & Vanderklok, 1985). However, the SEM model suggests that when it comes to performance, particularly performance on a relevant dimension, one should not see others as similar but rather as performing less well. In a recent theoretical review, Marks and Miller (1986) conclude that this is the case. For example, Gary Marks (1984) found that when dealing with performance dimensions or ability dimensions rather than a false consensus effect, one obtains a false uniqueness effect. Jennifer Campbell (1986), in a very sophisticated analysis of the accuracy issue in projection and the false consensus effect, similarly found a false uniqueness effect when dealing with performance or ability dimensions. Further, this false uniqueness effect becomes even more pronounced as the performance dimension becomes more self-relevant. Finally, Suls and Wan (1987) found false uniqueness effects on estimates of fear when such estimates could bolster one's perceived self-competence. I think the cross-fertilization among these approaches (psychological projection, false consensus, and the SEM model) will turn out to be a good thing.

2. *Affecting Own Performance*

If one conceptualizes performance in relative terms, then comparison and reflection processes can be affected not only by changing another's performance but by changing one's own performance as well. Let us focus first on relevant performance. When a close other's performance is relevant to one's self-definition there is the potential for one to suffer lowered self-evaluation via the comparison process. One way to reduce this potential is to increase one's own efforts (behavioral) or facilitatively distort the perception of one's own performance (cognitive).

There is some preliminary evidence consistent with both of these resolutions. Tesser, Campbell, and Campbell (reported in Tesser & Campbell, 1986) looked at own actual performance among high school students. Relevance of school was defined in terms of interest in having additional education. It follows from the model that given high relevance of school, (1) the better another's performance, the more one will try and, hence, the better one's own performance; and (2) this will be particularly true if the other is close (i.e., a friend). On the other hand, given low relevance, (3) the overall impact of others' performance on one's own should be attenuated, and (4) the difference between friends and nonfriends should also be attenuated.

The effects of socioeconomic status, sex, and race were statistically removed from each respondent's own grade point average (GPA). Respondents were divided in terms of high or low interest in school. Within these groups, respondents' own "residualized" GPA was correlated with the GPA of a classmate that the respondent nominated as a friend and a classmate that the respondent did not nominate as a friend. The pattern of correlations conformed to theoretical expectations. The only correlation which was significantly more positive than zero is that among high-relevance respondents and their friends. When school is relevant, i.e., respondents want more education, the difference between the correlations for friends and nonfriends is significant. When school is not relevant, the corresponding difference in correlations is not significant. None of the other differences in correlation are significant.

There is also evidence for the distortion of one's own performance. Tesser, Campbell, and Smith (1984) compared performance ratings that fifth and sixth graders made of their own performance on a relevant activity and on an irrelevant activity with the ratings made by their teacher. If the teachers' ratings are interpreted as an "objective" benchmark then the students distorted their performance upward on the relevant activity and downward on the irrelevant activity.

Although these studies are consistent with the present viewpoint, they are correlational and there are a number of plausible alternative explanations of the results. What is needed is a more detailed theoretical analysis and more focused research. Generally, I would expect that performance which is important to one's self-definition is well practiced and actually difficult to improve. So it becomes important to specify the conditions under which threat from the comparison process will affect increased efforts to improve own performance. Since it is difficult to improve performance, attempts at actual improvement should be more likely when another's performance is unambiguously better than one's own performance (and difficult to distort) and it is difficult or costly to reduce the level of that close other's performance. Further, if one believes that effort will result in better performance, then increased task effort might be more likely as a result of the threat of comparison.

The good performance of a close other could result in increased own effort because the other's performance is "inspirational." That is, the good performance of a close other may redefine the possibilities for the self: "If he/she can do it so can I." My guess is that the inspirational effect is most likely when (1) the close other has not outperformed the self in the past and/or (2) the other's better performance relies on a new (to the self) instrumentality. Both conditions define a *possibility* for self-improvement: in the first instance, when someone who has not been better than the actor becomes better than the actor it may suggest that the actor can also improve. The introduction of a new instrumentality, the second condition, also suggests that the actor can improve himself, this time by doing things differently.

To this point we have focused on the conditions under which persons may attempt to increase their own efforts to make their performance better. The SEM model suggests that there are also circumstances under which one may actually perform at a less-than-optimal level. In dealing with the maximization of own

performance we focused on the comparison process of the SEM model. People can maintain a positive self-evaluation by the reflection process as well. One can bask in the reflected glory of a close other's outstanding performance if that performance has little relevance to one's self-definition. One way of making another's performance look good is to make one's own (relative) performance look bad. This leads to the prediction that when the performance of another is low in relevance to the self the closer the other the greater the possibility that one will actually perform poorer than he/she would when that other's performance is self-relevant.

Since there is a general tendency for people to want to do well, the prediction of self-handicapping may not seem plausible. Therefore, qualifications of this prediction may be in order. For example, from an intuitive perspective the relevance of the activity to the other person should play a role. If the performance is highly relevant to the other (but low in relevance to the self), there is an added inducement to handicap one's own performance. Under high relevance to the other, one's own poorer performances provide something for the other. That is, while the self is basking in the other's (relative) accomplishment, the other is not threatened by comparison. The closer the other the more important the other's potential feelings. Therefore, the closer the other person the greater the impact of relevance-to-other on self's own performance.

Clearly, this line of thinking is speculative. A better understanding of the determinant of own effort on own self-handicapping is important from both a practical and a theoretical perspective. It would seem then that this would be a productive line of research to pursue.

B. THE EFFECTS OF RELEVANCE AND PERFORMANCE ON CLOSENESS

Now we focus on some research dealing with the effects of relevance and performance on closeness. How should relevance, or self-definition, interact with another's performance to affect closeness? Let's go back to the basic dynamics of the SEM model to make a prediction. When relevance is high the comparison process is more important than the reflection process and one will suffer by the other's good performance, particularly if the other is close. In order to avoid this potential threat to self-evaluation we would expect that when relevance is high the better the other's performance the less close or the more distance one will put between one's self and the other. On the other hand, when relevance is low and the reflection process is important there is the possibility of basking in the reflected glory of another's good performance, particularly if that other is close. Therefore, in order to experience that potential gain, when relevance is low, the better the other's performance the closer one should put oneself to another.

To test this hypothesis, we (Pleban & Tesser, 1981) returned to the laboratory. When our male subjects showed up they found one other subject already there. Both participants filled out a questionnaire which asked them to indicate how important various areas were to their self-definition. The areas consisted of things like rock music, current events, hunting and fishing, and so on. After finishing the questionnaire, the two subjects competed in a kind of college bowl competition. The experimenter, on a random basis, selected a topic that was either high or low in relevance to the subject's self-definition. The other subject, actually a confederate, had previously memorized the answers to all the questions. When the questioning began, the confederate varied his performance so that he either clearly outperformed the real subject, performed about the same, or was outperformed by the real subject. Following the question-and-answer period the subjects were given feedback about how they did. The subject learned that he had performed about average, near the 50th percentile. The subject also learned that the confederate was clearly better (performing at the 80th percentile), slightly better (performing at the 60th percentile), slightly worse (performing at the 40th percentile), or much worse (performing at the 20th percentile). Thus, we had manipulated relevance to the subject's self-definition and the relative performance of the other.

In order to measure closeness, we asked the subjects to go into an adjoining room. The confederate sat down first and we simply measured how close or far the subject sat from the confederate. After they were seated, a questionnaire containing alternative, paper and pencil, measures of closeness was administered. Recall our expectations: when relevance is high, the better the other's performance the less close the subject should put himself to the other. When relevance is low, the better the other's performance the closer the subject should put himself to the other.

It should be noted at the outset that level of performance made no difference when the subject outperformed the confederate. However, when the confederate outperformed the subject, each of the expectations from the SEM model was sustained. Let us look first at the behavioral index (see Fig. 2), the distance the individual sat from the confederate. As can be seen, as the confederate's performance improved from the 60th percentile to the 80th percentile the subject's distance increased when the topic was one of high relevance; the subject's distance decreased or closeness increased when the topic was of low relevance. Similar effects were obtained with the behavioroid index (Aronson & Carlsmith, 1968), "Would you want to work with this (confederate) again?" and with the cognitive index, "How much are you and this confederate alike?" There were no reliable effects on the affect index, "How attracted are you to this confederate?" Taken together these results offer some nice support for the hypotheses and also suggest that the closeness variable be defined in unit-formation terms rather than affect terms. Both the behavioral and the cognitive indices of closeness showed the predicted effect, while the affective index did not.

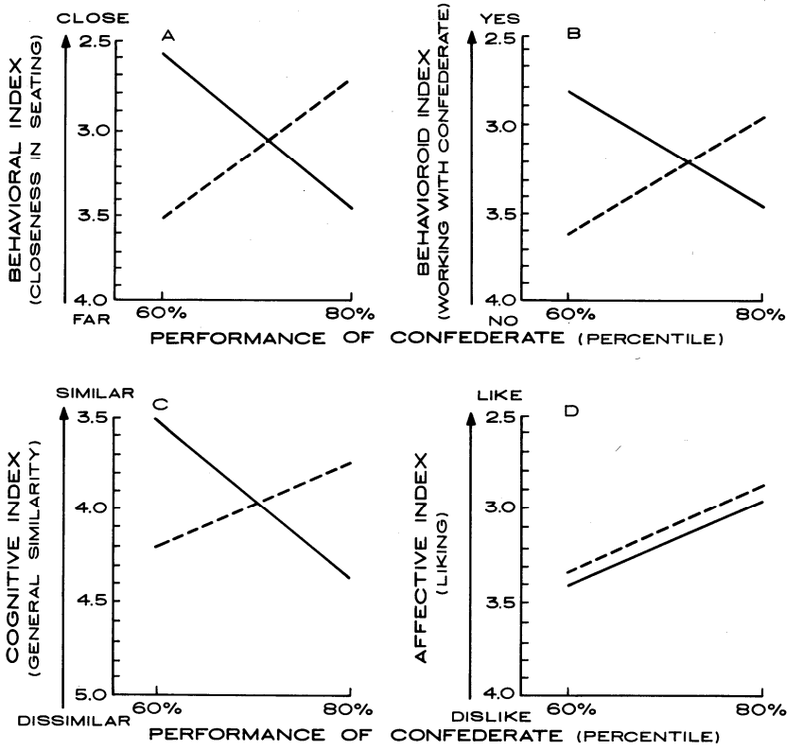

Fig. 2. The effects of relative performance and relevance on closeness to other as indexed by behavioral, behavioroid, cognitive, and affective indices. Solid lines indicate high relevance; broken lines indicate low relevance. From Pleban and Tesser (1981).

Before we take this conclusion too seriously, however, I would like to describe a study by Toni Giuliano and Dan Wegner (personal communication, May, 1985). The study was done for another purpose but seems to have some clear implications for the self-evaluation maintenance model and its predictions about closeness. The model predicts that we should be close to others who (1) do not outperform us on things that are self-definitional and thereby do not threaten us by comparison, but (2) do outperform us on things that are not self-definitional so that we can bask in their reflected glory. Giuliano and Wegner gave 50 couples a list of topics, including things like restaurants, movies, money and business, phone numbers, famous sculptures, and so on. For each topic, each member of the couple had to indicate which of them was an expert, that they were both experts, or that neither was an expert. Let us assume that areas in which one claims expertise are more relevant than areas in which one does not claim expertise. If one's partner acknowledges one's expertise there is no threat

by comparison as a result of closeness. Further, to acknowledge another's expertise in an area in which one does not claim personal expertise (low relevance) is to provide for the opportunity to bask in the reflected glory of that other, particularly if the other is close.

Giuliano and Wegner computed what they call a differentiation score (i.e., the number of items on which one member of the couple claims expertise and the other member corroborates that claim). The SEM model leads us to expect that the greater the number of such items; that is, the higher the differentiation score, the closer the couple. Giuliano and Wegner correlated the differentiation score with the couple's rated satisfaction with the relationship. The correlation was in the predicted direction and it was substantial, $r = .60$.

Although there are undoubtedly alternative explanations, the Giuliano and Wegner data seem to be consistent with the SEM model. They are also consistent with the notion of complementarity in interpersonal attraction. Couples that show a large number of areas in which there are acknowledged *differences* in expertise are more satisfied with the relationship. The prominent finding in the interpersonal attraction literature is that persons who are *similar* to one another tend to be more satisfied (e.g., Byrne, 1969). Elsewhere (Campbell & Tesser, 1986; Tesser, 1984) we have argued that much of the evidence for similarity leading to attraction concerns similarity on what might be called emotional dimensions. That is, values, opinions, and the like. As noted above, patterns of complementarity or uniqueness are more likely to be associated with closeness on things like ability domains or performance domains.

C. THE EFFECTS OF PERFORMANCE AND CLOSENESS ON RELEVANCE

Now let us turn to some examples of research on the determinants of self-definition or the relevance parameter. Again, the model makes some very specific predictions. Recall that the relevance parameter directly weights the comparison process and inversely weights the reflection process. Thus, the relevance of an activity increases the importance of the comparison process relative to the reflection process. When another's performance is better than one's own, one should reduce the relevance of that performance dimension. This would permit one to bask in reflected glory rather than suffer by comparison. Further, one's tendency to reduce relevance should be greater the closer the other person. In short, the better another's performance in an activity the less relevant should that activity be to one's self-definition, particularly if the other person is close.

The study to be described here has both behavioral and cognitive measures of relevance or self-definition. The laboratory study was completed in collaboration with Del Paulhus (Tesser & Paulhus, 1983). Pairs of male subjects were told that the experiment concerned the validation of a personality inventory. Half the

subjects were led to believe that the two of them were scheduled at the same time because they were very much alike in a number of different ways (the close condition). The remaining subjects were led to believe that they were scheduled at the same time because they were very different from one another (the distant condition). The subjects were then seated before a microcomputer and worked on a task which they were told measured cognitive–perceptual integration. After working on the task for some time, they were given feedback. Subjects learned that they had outperformed the other subject or that the other subject had outperformed them at cognitive–perceptual integration. Thus, we had manipulated closeness and performance. (The study was actually more involved than this and dealt with the issue of public versus private self-evaluation maintenance. This issue, however, is beyond the scope of this article. See Tesser & Barbee, 1985; Tesser & Moore, 1987; and Tesser & Paulhus, 1983, for discussion. There were three measures of relevance: an interview measure in which the subjects were asked how important cognitive–perceptual integration was to them; a questionnaire measure, again asking how important cognitive–perceptual integration was; and a behavioral measure. The behavioral measure involved surreptitiously observing the amount of time the subjects spent reading biographies of persons they believed were high in cognitive–perceptual integration versus low in cognitive–perceptual integration.

Each of the measures produced the same pattern of results. They were therefore combined and are displayed in Fig. 3. Recall our prediction: the better another does relative to the self, the less relevant should be the performance dimension, particularly when that other is close. This is precisely the pattern that was found and the interaction is significant.

Now we leave the laboratory and look at data from a "real world" setting, that of the family. These data have been collected by William Owens, who has over the last several years collected biographical data on a large number of undergraduates at the University of Georgia (e.g., Owens & Schoenfeldt, 1979). One of the questions that he has asked these freshmen is "During the time you spent at home, how successful were your brothers and/or sisters in such things as popularity, skills, possessions, and appearance?" They were able to respond, "The other was more successful," "We were equally successful," or "I was more successful." Thus, there was a measure of relative performance among siblings. But what about a measure of closeness? Certainly siblings are close. While this is true, we (Tesser, 1980) took difference in age as an index of relative closeness. That is, we assumed that siblings separated by less than 3 years of age were closer than siblings separated by more than 3 years of age. Now we had measures of relative performance and closeness. What about relevance? Recall that relevance has to do with self-identity. Fortunately, Owens included a couple of items which dealt with identification with the sibling: "How much were you like your brother or sister in skills and ability . . . ways of acting in social situations?" Now we had, if not direct measures, at least proxies for each of the

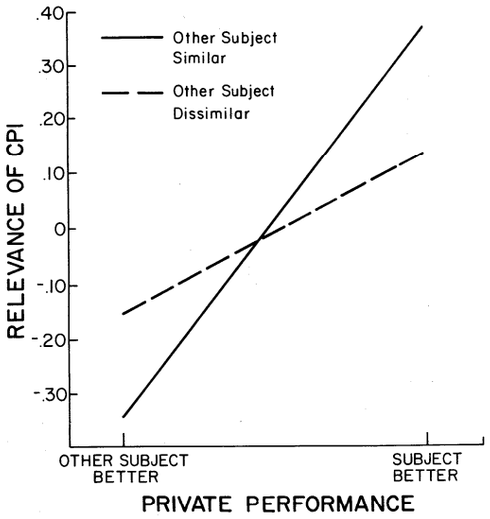

Fig. 3. The effects of relative performance on cognitive–perceptual integration (CPI) and similarity (i.e., closeness) of other on the relevance of CPI to one's self-definition. Relevance is averaged over behavioral, interview, and questionnaire measures. From "The definition of self: Private and public self-evaluation management strategies" by A. Tesser and D. Paulhus, 1983, *Journal of Personality and Social Psychology,* **44,** 672–682. Copyright 1983 by the American Psychological Association. Adapted by permission.

items we needed to test the hypothesis. We are interested in the interactive effects of closeness and performance on relevance or, in this case, identification with the sibling.

We focused only on the respondents from two sibling families. The data displayed in Fig. 4 are the effect of closeness. That is, a positive number means more identification when the sibling is close (less than 3 years apart in age) than when the sibling is distant (more than 3 years apart in age). A negative number means less identification when the sibling is close than when the sibling is distant.

There were no effects for females.[2] It is the data for males that are displayed,

[2]Although SEM predicitions have been supported in several studies including females, on the few occasions on which gender effects have been found the SEM effects have been stronger for males than for females. This may mean a variety of things. Perhaps the tasks used had differential relevance for males and females; perhaps the comparison process (competition) is less important for females than for males (Bond & Vinacke, 1961; Gilligan, 1982). It is worth noting in this context that the differences between males and females may also characterize differences between cultures which may make the model more or less applicable. For example, when the comparison process is presumed to be important, the formulation may work best for people with a desire to enhance their self-evaluation *individualistically,* such as Western or even American society. Societies with a more collectivist orientation, in which individual value is presumably less prized (such as Soviet Russia in theory), might not show the same kind of effects.

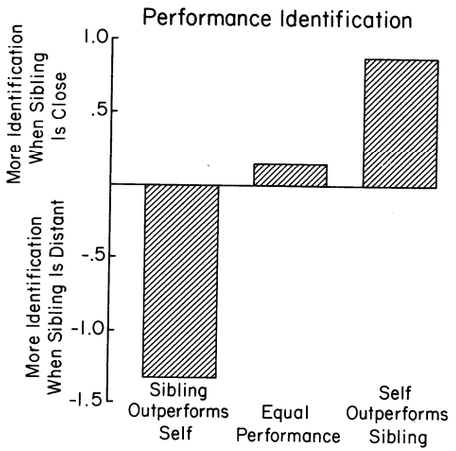

Fig. 4. The effects of closeness of age and perceived relative performance of sibling on performance identification with sibling. Data for male subjects only. Data from "Self-esteem maintenance in family dynamics" by A. Tesser, 1980, *Journal of Personality and Social Psychology*, **39**, 77–91. Copyright 1980 by the American Psychological Association. Adapted by permission.

and these data are quite consistent with the model. When the respondent believes he is outperformed by his sibling, then the closer (in age) the sibling the less the identification with the sibling. On the other hand, when the respondent believes he outperforms his sibling this closeness effect is reversed: greater closeness (in age) leads to greater identification. Thus, the model appears to have some nontrivial implications for self-identity and for intrafamily relationships.

The implications of the SEM model for family relationships have only begun to be explored. For example, there has been some discussion of the use and development of SEM processes in a family context (Tesser, 1984). And there are some preliminary, archival data bearing on the dynamics of father–son relationships (Tesser, 1980, Study 3). In spite of these beginnings, however, some of the fascinating and fundamental questions about the applicability of comparison and reflection processes in parent–child relationships have yet to be dealt with in any definitive way.

IV. Things to Notice about the Model/Research

I have discussed the SEM model and how it works and provided some illustrations of the research. Now I will reflect on the research and some properties of the model.

A. ON THE COMPREHENSIVENESS OF THE RESEARCH

Let us focus first on the research. We have attempted to make the research comprehensive. In Tables I–III, I summarize only the research associated with the Georgia group. The research may be characterized as follows: (1) we have used both cognitive and behavioral dependent variables (Tesser, 1985), (2) we have attempted to validate the findings from laboratory research in the field, (3) the studies themselves tend to be both experimental and correlational.

So, for example, in looking at the impact of closeness and relevance on affecting another's performance (Table I), we have cognitive dependent variables (i.e., ratings of performance) and a behavioral dependent variable (the giving of more or less difficult clues). Two of those studies were done in a lab; however, one was performed in a nonlaboratory setting, a public school. Similarly, in looking at the impact of quality and relevance of performance on interpersonal closeness (Table II) we have cognitive measures—ratings of general similarities coming from a laboratory study and ratings of sibling friction coming from a nonlaboratory study. We also have behavioral measures—the distance a participant sits from another and his willingness to work with another coming from a laboratory study and the relationship between fathers and sons coming from an archival study. Looking now at the impact of closeness and performance on relevance (Table III), again we see a variety of cognitive measures from both laboratory and nonlaboratory sources and behavioral or action measures, such as the choice of the task on which to work, coming from both laboratory and nonlaboratory studies.

B. ON THE SYSTEMIC NATURE OF THE MODEL

You should also notice that the model is systemic (Carver & Scheier, 1981; Powers, 1973). As can be seen in Fig. 5, each of the variables is at the same time both a cause and an effect. And, its status as cause or effect, although indistinguishable in the "real world," is made possible through the magic of laboratory experimentation. In the laboratory one or two of the factors can be varied independent of the others. Notice also that each of the model variables enters into relationships with both of the remaining model variables. And they do so in an interactive way. Thus, for example, performance is a result of closeness in interaction with relevance; closeness is a result of performance in interaction with relevance. Similarly, performance causes relevance in interaction with closeness and relevance causes performance in interaction with closeness. Each of the variables is systemically and interactively tied up with the other two.

TABLE I

THE IMPACT OF CLOSENESS AND RELEVANCE ON AFFECTING ANOTHER'S PERFORMANCE[a]

Study/setting	Independent variable(s): Closeness/relevance	Dependent variable: Other's performance	Outcome
Tesser & Campbell (1982)/laboratory	*Closeness:* Friends versus strangers *Relevance:* Rated importance of social sensitivity versus esthetic judgment	Cognition: Guesses about correctness of others' responses to social sensitivity and esthetic judgment items.	More positively in guesses about friend compared to stranger on low-relevance dimension; reversed on high-relevance dimension.
Tesser, Campbell, & Smith (1984)/nonlaboratory	*Closeness:* Classmate most like to spend time with versus classmate least like to spend time with. *Relevance:* Activity rated most versus least relevant from among a set of school-related activities.	Cognition: Rating of own and others' performance.	Self and close other rated as similar in overall performance; both rated as better on self's relevant activity; self rated higher than other on relevant activity, lower than other on irrelevant activity. Distant other derogated on both activities.
Tesser & Smith (1980)/laboratory	*Closeness:* Friends versus strangers *Relevance:* Told task measures important characteristics (e.g., verbal intelligence) versus task unrelated to important characteristics.	Action: Difficulty of clues given to others to guess "password."	Friend given easier clues than stranger when task relevant; reversed when task not relevant.

[a]From Tesser (1985).

TABLE II

THE IMPACT OF QUALITY AND RELEVANCE OF PERFORMANCE ON INTERPERSONAL CLOSENESS[a]

Study/setting	Independent variable(s): Other's performance/relevance	Dependent variable: Closeness	Outcome
Pleban & Tesser (1981)/laboratory	*Performance:* Feedback on college bowl competition. *Relevance:* Topic rated most relevant versus least relevant.	Cognition: Ratings of general similarity, of other.	The more decisively one is outperformed on a high-relevant dimension the less the general similarity; reversed when dimension is of low relevance. Performance poorer than own had no impact on closeness.
Tesser (1980, Study 2)/nonlaboratory	*Performance:* Sibling rated as performing poorer versus equal versus better. *Relevance:* Presumed to be high; performance on popularity, skills, possessions, and appearance.	Cognition: Sum of items dealing with sibling friction.	When respondent was outperformed by sibling, the closer they were in age the greater the friction i.e., beliefs about distance. Relationship attenuated when respondent was not outperformed by sibling.
Pleban & Tesser (1981)/laboratory	See above.	Action: (1) Distance participant sits from other. (2) Willingness to work with other again.	The more decisively one is outperformed by another on a high-relevance dimension the further one sits and the less willing one is to work with the other. Relation reversed on low-relevance dimension. Performance poorer than own had no impact on closeness.
Tesser (1980, Study 3)/nonlaboratory	*Performance:* Presumed to be high since found in standard biography. *Relevance:* Ratings of similarity of occupation.	Action Ratings of closeness from biographical information given about a scientist and his father.	The more similar the son's accomplishment to the father's profession the more distant the relationship.

[a]From Tesser (1985).

TABLE III

SELF-DEFINITION: THE IMPACT OF PERFORMANCE AND CLOSENESS ON RELEVANCE[a]

Study/setting	Independent variable(s): Closeness/performance	Dependent variable: Self-definition (relevance)	Outcome
Tesser & Campbell (1980)/laboratory	*Closeness:* Manipulated personality similarity. *Performance:* Feedback of relative performance on social sensitivity and esthetic judgment.	Cognition: Change in rated importance of social sensitivity and esthetic judgment to self.	The poorer one's performance relative to the other the less important the performance dimension to self-definition. This relation was stronger for similar than for dissimilar others.
Tesser & Paulhus (1983)/laboratory	*Closeness:* Manipulated similarity of age, major, personality. *Performance:* Feedback of relative performance on "Cognitive–Perceptual Integration"	Rated importance of Cognitive–Perceptual Integration.	The poorer one's performance relative to the other the less important cognitive–perceptual integration to one's self-definition.
Tesser (1980, Study 1)/nonlaboratory	*Closeness:* Siblings less than 3 years apart versus more than 3 years apart. *Performance:* Sibling rated as performing poorer, equal, or better on popularity skills, possessions, and appearance.	Identification/deidentification with sibling on performance dimensions.	No effect for females. For males: When the sibling outperformed the respondent, the closer the sibling the less the identification. This relation was reversed when the respondent was outperformed by the sibling.
Tesser & Campbell (1980)/laboratory	*Closeness:* Manipulated personality similarity. *Performance:* Feedback of relative performance on social sensitivity and esthetic judgment.	Action: Choice of task on which to work.	The poorer one's performance relative to another's performance the more the performance dimension is avoided. This relationship was stronger for similar than dissimilar other.
Tesser & Paulhus (1983)/laboratory	*Closeness:* Manipulated similarity of age, major, personality. *Performance:* Feedback of relative performance on "Cognitive–Perceptual Integration."	Amount of time spent looking at biographies of person high on Cognition–Perceptual Integration.	The poorer one's performance on Cognitive–Perceptual Integration relative to another the less time spent looking at the biographies of people high in Cognitive–Perceptual Integration. This relationship was stronger for similar than dissimilar others.
Described in Tesser & Campbell (1987)/ nonlaboratory	*Closeness:* Similar sex/similar race versus dissimilar sex/race. *Performance:* Relative grade point average in school.	How much additional school desired.	The only significant predictor of additional school desired was grade point average relative to similar sex/race classmates.

[a]From Tesser (1985).

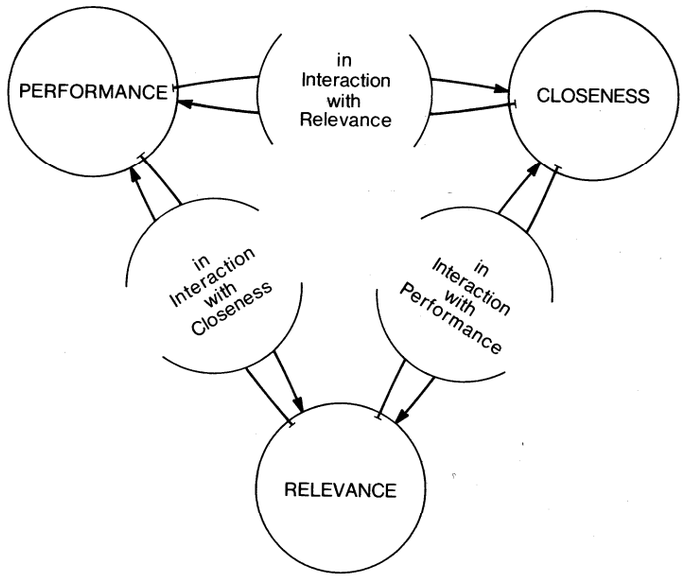

Fig. 5. Schematic illustration of the systemic nature of the self-evaluation maintenance model.

V. Strong Predictions and the Liberating Quality of Interactions

In presenting the SEM model I have discussed the relationships among closeness, performance, and relevance as if these variables are related only because of their hypothetical effects on self-evaluation. In many cases, such an assumption seems unrealistic. For example, any exchange theorist (e.g., Thibaut & Kelley, 1959) would argue that we are generally more likely to help, i.e., reinforce the performance of, persons who are close to us and in a better position to affect our own outcomes than persons who are distant. Such a proposition makes good sense and the present model does not negate this idea. The model, however, makes the strong prediction that when performance is on a highly relevant dimension, a psychologically distant other is more likely to receive help than a close other. A weaker prediction, one that is both consistent with the model and with the exchange theory proposition, is that the advantage a close other has over a distant other in terms of receiving help will decrease with increases in relevance. Notice that this weaker prediction allows for the possibility that both exchange and self-evaluation processes may be operating simultaneously.

There is much research indicating that similarity leads to attraction (e.g., Byrne, 1971) for a variety of reasons (cf. Berscheid & Walster, 1977), including the need to evaluate one's own abilities (cf. Festinger, 1954; Latane, 1966; Suls & Miller, 1977). This research would suggest that an individual should be more attracted (i.e., increase closeness) to another who performs on a relevant dimension than to another who performs on an irrelevant dimension. This effect of relevance on closeness is opposite in direction to the self-evaluation maintenance effect of relevance on closeness. Again, to allow for both effects, we need only state our predictions in terms of the directional effects of performance on the slope of the line relating relevance to closeness. Instead of simply asserting that relevance decreases closeness, we predict that as performance is better the relationship of relevance to closeness should become less positive (or more negative).

There is another extra-model effect worth mentioning. Another person who is close is more apt to serve as a model than another who is distant (Bandura, 1971). That is, a person who is close is more available to learn from. If one does learn more from others who are close one will show greater resemblance to close others: one's self-definition will become more like the self-definition of close others. Thus, what another chooses to do is more likely to have implications for self if the other is close. In short, relevance should increase with closeness. This modeling effect of closeness on relevance is in a direction opposite to the self-evaluation maintenance effect of relevance on closeness. Again, the problem can be handled by making predictions in terms of interaction with performance.

Notice that in each case the weaker prediction is specific in terms of the direction of differences in relationships. The predictions are not made in terms of main effects nor in terms of specific signs of relationships. Making such interaction predictions from the SEM model has two important liberating qualities for theory testing. First, it allows for the detection of SEM effecfs even in the presence of other, sometimes contrary, effects as in the examples above. Second, interaction predictions also allow for making meaningful predictions given only ordinal information about the independent variables. To elaborate this point, consider the theoretical effects of relevance. If relevance is high, comparison processes are important and attempts to facilitate another's performance should be negatively related to closeness. If relevance is low, reflection processes are important and attempts to facilitate another's performance should be positively related to closeness. Given only ordinal information about levels of relevance it is impossible to predict even the direction of the relationship between closeness and facilitating another's performance with any confidence. We can, however, make a specific interaction prediction: the greater the relevance, the more negative (less positive) should be the relationship of closeness to performance.

VI. The Model in Perspective

To this point I have given a broad-brush description of the SEM model and reviewed a sample of the available evidence to evaluate it. The SEM model

draws on a number of research traditions in psychology and sociology. The model is generally related to what might loosely be called self-theory. Its more specific antecedents include social comparison theory and Cialdini's research and theorizing on "BIRGing" phenomena. Below I deal with each of these.

A. SELF-THEORY

The self-evaluation model has at its core the assumption that persons behave so as to maintain a positive self-evaluation. Such a notion is not new. William James (1907) discussed it at the turn of the century. While most contemporary psychologists agree that persons tend to see themselves in a positive light (cf. Greenwald, 1980; Taylor & Brown, 1986), whether such positive self-perception is motivated or a cold information-processing strategy is still debatable. Thus, some investigators see self-serving attribution biases as motivated (Bowerman, 1978; Bradley, 1978; Zuckerman, 1979) while others see them as the result of information-processing strategies and biases (Nisbett & Ross, 1980; Miller & Ross, 1975). There is even an emerging literature to suggest that self-serving biases/distortions may be associated with positive mental health (Taylor & Brown, 1986). For example, compared to normals, mildly depressed/low self-esteem individuals are less vulnerable to an illusion of control (e.g., Greenberg & Alloy, 1987) and more accurate (and less optimistic) in estimating future task performance (e.g., Campbell & Fairey, 1985). This is not to say that even nondepressed/high self-esteem persons do not have some negative self-conceptions (e.g., shy, fat; Wurf & Markus, 1983, 1986). The general thrust, however, is toward positivity. Obviously maintenance of positive self-evaluation is central to the SEM model and, therefore, so are these issues.

The relevance parameter of the model deals specifically with the substance of one's self-definition and there are a number of self-theories that address this question as well (cf. Gordon & Gergen, 1968). McGuire (e.g., McGuire, 1987; McGuire, Child, & Fujioka, 1978; McGuire & Padawer-Singer, 1976) has noted that psychological investigations of self-concept have focused very narrowly on self-evaluation or self-esteem. However, when persons are allowed to choose the dimensions that are salient or significant to them, fewer than 10% of their choices deal with self-evaluative dimensions (McGuire & Padawer-Singer, 1976). Although self-evaluation dimensions per se may constitute only a small fraction of spontaneous choices, the large majority of the dimensions chosen are subject to evaluation. For example, attributes such as actor, jogger, bridge player, gardener, expert on baseball, and mother are not in themselves self-evaluative, but performance on these attributes is certainly subject to evaluation. The SEM model suggests that the relevance of these "nonevaluative" attributes for one's self-definition is determined to a large extent by attempts to maintain a positive self-evaluation.

Hazel Markus (1977) has suggested that the substance of one's self inheres in relatively enduring self-schemas. These schemas serve to make pertinent areas of the individual's functioning more salient, easier to remember, and easier to organize. Persons who are self-schematic with respect to a particular attribute in Markus' terms are, in the terminology of the present model, persons for whom that attribute is relevant.[3] Thus, the two bodies of research appear to be complementary. Markus' work details the effects of relevance on information processing (e.g., Markus & Wurf, 1987) and the present work makes some suggestions about the conditions under which self-schemata will change.

From a symbolic interactionist position (Mead, 1934), the self emerges from social interaction (Stryker & Statham, 1985). Thus, Cooley (1902) developed the notion of the looking-glass self. One's view of one's self comes from what one imagines others think of him/her. The present thesis also suggests that others play a crucial role in determining the substance of self but that the actor himself is a more active ingredient in the genesis of imagined (and real) consensus. I have already detailed how others' closeness and performance affect one's self-view. Perhaps the interpersonal aspects of these dynamics lead persons to share the same view of one another. That is, it is to each actor's advantage, especially if they are in a close relationship, to agree on how they see one another. It is to Actor A's advantage to see Actor B as the kind of person who is good at "X" if Actor A is good at "Y," just as it is to Actor B's advantage to see himself as good at "X" if Actor A is good at "Y." By doing this both can take joy in and promote the accomplishments of the other without being threatened by those accomplishments. Thus, one might speculate that persons negotiate their self-identity with those around them (Secord & Backman, 1965; Swann, 1983, Swann & Predmore, 1985). The result of such a process would be a kind of bargain in which the participants agree on a set of complementary identities. The agreement would serve to validate one another's view of self while enhancing one's own view of self.

B. SOCIAL COMPARISON THEORY

In 1942, Hyman introduced the term "reference group" to refer to the idea that persons *select* gorups (or individuals) for a process of self-appraisal and often these groups are not groups to which the individual belongs. The concept of reference group continues to be useful within sociology (cf. Hyman & Singer, 1968). From a psychological perspective, however, perhaps the best articulated and heuristically useful theory within this tradition is Festinger's (1954) theory of

[3]In the present approach relevant dimensions are dimensions on which persons strive for excellence. According to Markus, people can have self-schemas on nonperformance dimensions—some people have a fat self-schema (Markus, Sentis, & Hammill, 1979). Even here, however, it is possible to think of someone striving to become thin.

social comparison processes. The theory has continued to be influential in psychology since its inception (cf. Latane, 1966; Suls & Miller, 1977; Goethals, 1984). The present SEM model borrows freely from the spirit of this theory although there are some important distinctions.

A broad-brush sketch of social comparison theory and the SEM model would show both approaches concerned with self-appraisal and both approaches using the behavior of others as a key element in such appraisals. Further, the kinds of variables each approach incorporates bear a resemblance to one another. Both are concerned with differences in performance, getting in and out of relationships (groups) with others, and the personal importance of various attributes. Both approaches are also systemic in character—each variable is both a cause and a consequence of at least some of the others (although this aspect is more explicitly dealt with in the SEM model). On the other hand, the approaches differ with respect to their emphasis, the kinds of research they generate, and their specific workings.

Social comparison theory is predicated on the notion that persons want to understand their world. They come together, communicate, and influence one another to gain cognitive clarity, to validate their opinions and to evaluate their skills. The theory does prominently include the notion that there is a unidirectional drive upward with respect to abilities, and a number of subsequent workers have focused on the role of self-evaluation maintenance (e.g., Gruder, 1977; Hakmiller, 1966; Thornton & Arrowood, 1966; Wheeler, 1966; Friend & Gilbert, 1973; Wills, 1981, 1985; Wood, Taylor, & Lichtman, 1985). However, the emphasis of the original theory is clearly on gaining cognitive clarity rather than on self-enhancement. In contrast, the present approach starts at the point at which the person already knows how to evaluate his abilities (and opinions) and deals with the consequences of such knowledge.[4] The motivational emphasis is not on reducing uncertainty but rather on maintaining or enhancing self-evaluation.

Much of the classical research generated by the theory of social comparison processes is only tangentially relevant to the present formulation. The rank-order choice experimental paradigm is an example. In this paradigm, an individual is given feedback (i.e., a score on a particular attribute) and is then asked which other scores in the distribution he would like to examine. A typical finding with this paradigm is that subjects tend to want to see scores of others slightly higher than themselves (e.g., Wheeler, 1966). These findings can be interpreted as supporting both cognitive clarity and self-evaluation maintenance motives (e.g.,

[4]Brickman and his colleagues (Brinkman & Bulman, 1977; Perloff & Brickman, 1980) have dealt with social comparison-like situations in which persons know where they stand with respect to some ability. The questions they raise and sensitively deal with are as follows: When will an individual avoid or seek comparison? When will he display or withhold information about his own performance?

Gruder, 1977). However, desire for private information about score distributions is not equivalent to affecting the public psychological distance to another. Indeed, these two variables behave quite differently (Wheeler, Shaver, Jones, Goethals, Cooper, Robinson, Bruou, & Butzine, 1969; Wilson & Benner, 1971). The latter is more nearly what is meant by closeness in the present model. Furthermore, none of the studies, to this writer's knowledge, varies the relevance of the performance dimension. Thus, interpretation of the outcomes in terms of the SEM model is only possible if one is willing to make some assumption about relevance. The rank-order choice paradigm is typical of the kind of research generated by social comparison theory.

The two approaches also differ in the scope of research areas they touch upon. This difference is not necessarily inherent in the formulations themselves, but in the way in which they have been stated. Thus, classical research on social comparison theory tends to deal with interpersonal attraction and influence.[5] The SEM model more explicitly deals with a larger variety of areas: prosocial behavior—affecting another's performance by helping or hurting; self-identity—the relevance parameter; and interpersonal relationships—the closeness parameter.

The models are also quite different in their specifics. The "comparison component" of the SEM model comes formally closest to social comparison theory. Recall, however, that the comparison component is only half of the SEM model. The SEM model also includes a "reflection component," the notion that persons can gain in self-evaluation by being close to a high-performing other on a low-relevance dimension. There is no analogous component in the theory of social comparison processes.

C. CIALDINI'S BIRGING RESEARCH

The reflection component of the model comes closest to Cialdini's research on "Basking in Reflected Glory," or BIRGing (Cialdini *et al.*, 1976). Cialdini and his co-workers have found that persons tend to put themselves into close association with "winners." For example, college students are more likely to wear clothing that identifies their own school following a winning football weekend than following a losing football weekend. Students are more likely to use the pronoun "we" when describing a football game that their school team won than when describing a football game that their school lost. Further, the latter tendency is more pronounced after the students have undergome a failure experience

[5]In fairness, it should be noted that contemporary researchers are applying the theory to a variety of contexts; for example, adjustment to cancer (Wood *et al.*, 1985), help-seeking (Wills, 1983), and derogation of outgroups (Crocker & McGraw, 1984). However, each of these applications adopts self-esteem maintenance as the underlying social comparison motive.

than after they have undergone a success experience. This finding suggest that BIRGing is in the service of self-evaluation maintenance.

Cialdini and Richardson (1980) explain BIRGing in terms of Heider's (1958) balance theory. The argument is that if a person is in a positive unit relation with a positively evaluated entity, then balance forces will lead the person to be positively evaluated. As a further test of this explanation, they reasoned that if a person is in a negative relation with another entity, to the extent that the entity was negatively evaluated, balance forces would cause the person to be positively evaluated. In an experiment designed to test this idea subjects were given either a success or failure experience and were then given an opportunity to rate (compliment or "blast") their own university (positive association) or a rival university (negative association). Consistent with the balance theory prediction, the tendency to compliment one's own university and blast the rival university increased with prior threat to self-evaluation.

The BIRGing research and theorizing is quite consistent with the SEM model. However, the BIRGing research is more generally interpreted in terms of self-presentation rather than private self-evaluation. Further, there is no relevancc parameter in the BIRGing approach and it deals only with the reflection half of the SEM model. On the basis of the research reviewed here, I would argue that a more complete picture must include both reflection and comparison processes and a way of weighting these processes, i.e., a relevance parameter.

VII. SEM and Emotion: The Epistemological Status of Self-Evaluation

Previous research intended as direct tests of the model has focused only on indicants of performance, closeness, and relevance. There has been no attempt to measure "self-evaluation." We viewed self-evaluation as

> . . . a hypothetical construct, a theoretical fiction which is used to organize and make comprehensible the relationships among the variables that have empirical indicants, i.e., relevance, performance, closeness. Similarly, self-evaluation maintenance is viewed as a hypothetical process much like "dissonance reduction" is viewed as a hypothetical process in dissonance theory. Neither dissonance reduction nor self-evaluation maintenance is directly measured or observed, but both models are testable because they make specific predictions concerning the observable antecedents and observable consequences of the hypothesized process. (Tesser & Campbell, 1983, pp. 8–9).

This assumption has served us well. The model seems to do a good job of accounting for the behaviors in its purview. However, the research has advanced to the stage that tests of this assumption are warranted. If self-evaluation pro-

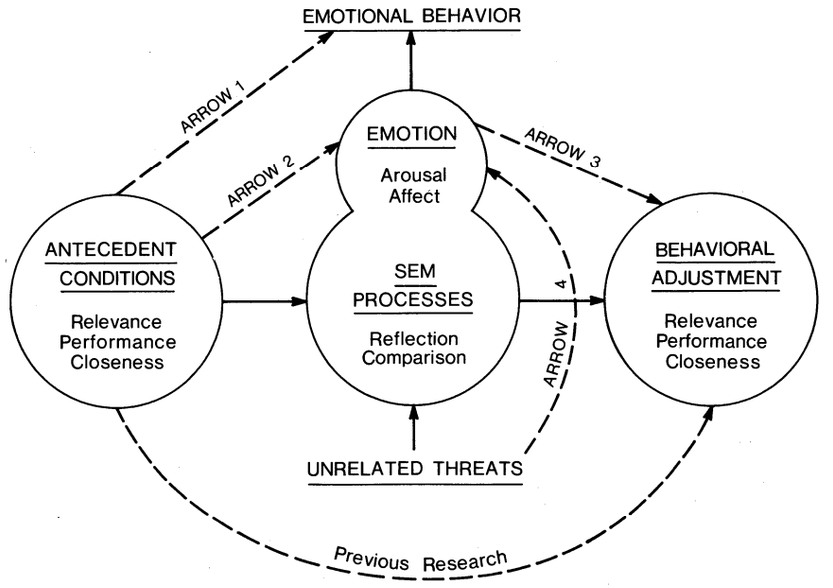

Fig. 6. Schematic representation of the operation of the self-evaluation maintenance model showing antecedent conditions which produce changes in reflection/comparison. The operation of reflection/comparison is accompanied by emotion and results in behavioral adjustment. See text for a more complete description.

cesses are real how might they be detected? I believe that the operation of these processes is often relatively fast and, even more importantly, outside of conscious awareness (see Tesser, 1986, section on "awareness"). Therefore, self-reports regarding the "self-esteem" may have limited utility. However, there is a more promising possibility. If these processes are real, they should manifest themselves in changes in affect/arousal. Threats to self-evaluation should result in negative affect, while promises to self-evaluation should lead to positive affect.

I have tried to illustrate some of these ideas in Fig. 6. The figure is really not as complicated as it appears. The circle on the left labeled *Antecedent Conditions* represents combinations of relevance, performance, and closeness. These combiinations of relevance, performance, and closeness should either threaten self-evaluation through comparison or promise a gain in self-evaluation through reflection. That is, they should cause changes in the hypothetical self-evaluation maintenance processes. The snowman-like figure in the center represents the self-evaluation maintenance processes. While the reflection and comparison processes are not directly observable, the emotions associated with these are. That

is, threats and promises should be associated with arousal and negative and positive affect. The circle on the other side of the intervening process is *Behavioral Adjustment,* namely, changes in relevance or performance or closeness in order to maintain self-evaluation. The solid circles and arrows represent theoretical entities. The broken arrows represent potentially observable relationships.

All of the work reviewed to this point related the Antecedent Conditions to Behavioral Adjustments bypassing the SEM process itself and its concomitant emotional expression.

Now focus on Arrow 2. If the present construal of events is true, then we would expect particular combinations of relevance, performance, and closeness to result in emotional expression. Fortunately, there is some research that addresses the point. This research was carried out by Rodin and her colleagues (Bers & Rodin, 1984; Salovey & Rodin, 1984) and Nadler, Fisher, and Ben-Itzhak (1983). Salovey and Rodin (1984) completed an experiment on what they call "social comparison jealousy."[6] In this experiment participants were given feedback that they did well or poorly on a dimension that was relevant or irrelevant to their self-definition. They were also provided information that another participant had done well on either the relevant or the irrelevant dimension. From the perspective of the SEM model the condition that poses the greatest threat to self-evaluation is the one in which the participant does poorly on a relevant dimension and the other does well on this dimension. Salovey and Rodin compared this condition to the remaining seven conditions in the experiment. They found that participants in this condition reported more anxiety, more depression, and less positivity of mood than participants in the other conditions.

When one person helps another, the person who is receiving help is implicitly demonstrating inferior performance. Therefore, if the help is on a dimension which is relevant to the recipient's self-definition, then comparison processes should come into play and the closer the relationship of the helper the greater the threat to self-evaluation. In a recently completed study, Nadler *et al.* (1983) had participants try to solve a mystery. The task was described as tapping important skills (high relevance) or luck (low relevance). The participant's solution was wrong and he was given a clue from either a friend (close other) or a stranger (distant other). Some participants went through this experience once and some went through it twice. Participants then rated their affect on a series of scales. From the perspective of the model the most threatening condition is the one in which help was received twice from a friend on the task which was described as relevant. Indeed, this turned out to be the condition associated with the most negative affect. None of the other conditions appeared to differ from one another.

[6]Salovey and Rodin (1986) distinguish social-comparison jealousy from romantic jealousy. Romantic jealousy tends to be associated with greater and more negative affect.

A. A STUDY ON AROUSAL

Let's turn now to Arrow 1. If it is true that the antecedent conditions have an impact on emotion, then it should also be true that the antecedent conditions should have an impact on emotional behavior that is unrelated to the SEM model; that is, unrelated to relevance, performance, or closeness. We know, for example, that arousal tends to facilitate or speed up responses on low-competition or simple tasks but also tends to interfere with or slow down responses on high-competition or complex tasks. Therefore, we might predict that when the threat of comparison is particularly high *or* the promise of reflection is particularly high, there will be an increase of arousal and, hence, the facilitation of simple responses and the interference with complex responses.

To test these ideas, we (Tesser, Millar, & Moore, in press) went back to the laboratory. Female subjects were invited to participate with a friend. Two pairs of friends were scheduled for each experimental session. After briefly becoming acquainted with one another and filling out measures of the relevance of social sensitivity and esthetic judgment, each subject was individually seated before a computer and responded to a computer-administered test on social sensitivity and on esthetic judgment. Following this test, subjects were given feedback about individual items. Half of the items were from the social sensitivity test and half from the esthetic judgment test. On each feedback item the subject was told whether she was right or wrong and whether her friend or a stranger (a member of the other friendship pair) was right or wrong. The feedback was further arranged such that the subject was correct and the other incorrect on half the items while the subject was incorrect and the other correct on the remaining items. In order to vary response competition (task complexity) the subject performed a task at the end of each feedback trial. For the simple task (low-response competition) they were given a single digit, randomly selected from 0 to 9, and they had to punch that number into the computer five times as quickly as they could (e.g., 44444). For the complex task they were given five independently and randomly selected digits (e.g., 09422). Again, their job was to punch these into the computer as fast as they could.

Let us review our expectations. Both the threat of comparison and the promise of reflection should result in arousal. The threat of comparison results from the better performance of another, particularly a close other, on a relevant dimension. The promise of reflection also results from the good performance of another, particularly a close other, but on an irrelevant dimension. Since closeness and performance interact to produce both comparison and reflection, then closeness and performance (regardless of relevance) ought also to interact in producing arousal. Arousal, in turn, should facilitate performance on the simple task and interfere with performance on the complex task. Since these effects go in

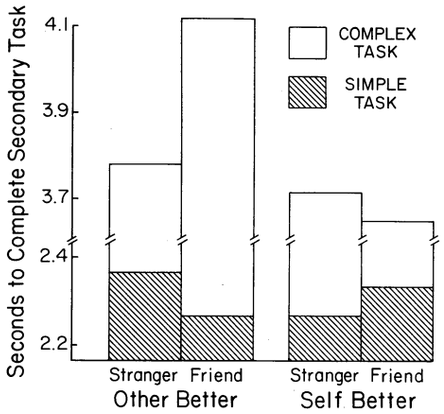

Fig. 7. Time to complete a secondary task as a function of task difficulty (response competition), closeness of other (friend versus stranger), and relative performance. From Tesser, Millar, & Moore (in press).

opposite directions, the overall prediction is for the three-factor interaction, Performance × Closeness × Complexity.

When we analyzed the amount of time it took to complete the task, this interaction emerged at a significant level (see Fig. 7). Recall that the most arousing conditions are where a close other outperforms the self. Under high relevance this combination produces threat and under low relevance it produces the promise of enhancement. We can see from the figure that where the other outperforms the self as we increase closeness, i.e., go from "stranger" to "friend," there is a slowing down on the difficult task and a speeding up on the simple task. Similarly, if we look only at the close other as we increase other's performance, that is, go from "self outperforms other" to "other outperforms self," there is a slowing down on the complex task and a speeding up on the simple task. Thus, we have some preliminary evidence consistent with the predictions associated with Arrow 1.

B. A STUDY ON AFFECT

The arousal study described above produced results consistent with the SEM model. However, the emotional products of the comparison process (pain) and the reflection process (pleasure) manifested themselves in terms of a single, nonvalenced index of arousal. To make the case more convincing it would be nice to have evidence on a valenced (i.e., positive/negative) index of emotion. Such an index should show persons experiencing positive emotions when reflection is maximized and negative emotions when comparison is maximized.

In an attempt to provide this evidence, we (Tesser, Millar, & Moore, in press) returned to the laboratory. Our approach was quite simple. We would provide participants with feedback concerning performance relative to a friend or stranger on a high- or low-relevant task and videotape their facial expression while they received this feedback. Their facial expressions could then be rated in terms of pleasantness/unpleasantness while receiving the feedback. These rated expressions would serve as our index of valenced emotion.

Pairs of female undergraduates who were friends were recruited for a study on "logical reasoning" and "esthetic judgment." When they arrived at the lab the relevance to their self-definition of logical reasoning and esthetic jtdgment was measured and they were then seated in individual cubicles before a microcomputer. The computer administered a series of items which purportedly measured "logical reasoning" and "esthetic judgment." Each item, regardless of type, required the subject to make a series of responses. In order to make our preprogrammed feedback more credible, participants were told that their item performance was graded not only on their final response but on the entire sequence of responses. After some practice, participants were given eight critical trials. The feedback, in randomized order for each subject, was defined by fully crossing the following variables: Performance (Self Better versus Other Better), Closeness of Other (Friend versus Stranger), and Domain (Logical Reasoning versus Esthetic Judgment); since logical reasoning was more relevant for some subjects and esthetic judgment was more relevant for other subjects this served as our relevance manipulation. Participants' facial expressions were recorded on videotape and later rated for pleasantness by two raters who were blind to condition. It was possible to assess the reliability of ratings over the eight conditions for each participant. The reliability was satisfactory, median = .93. Finally, on a postexperimental questionnaire, participants made a self-report assessment of their mood for each of the eight conditions.

Pleasantness of facial expressions for the eight conditions is shown in Fig. 8 in terms of a closeness effect, i.e., the difference in pleasantness of expression in connection with feedback concerning a friend over that of a stranger. The results provide some support for the model. According to the model, when a task is high in relevance the comparison process is important; the better performance of a close other is more threatening than the better performance of a distant other. Consistent in direction with this expectation, the figure shows that when the feedback concerns a high-relevant task and the self outperforms the other there is greater pleasantness to the close other than to the distant other. However, when the other outperforms the self there is a *decrease* in pleasantness to the close other (relative to the distant other). According to the model, when a task is low in relevance, the reflection process should be relatively important. Under these circumstances the better performance of a close other provides greater promise to self-evaluation than the better performance of a distant other. As expected, the figure shows the low-relevance conditions to be the mirror image of the high-

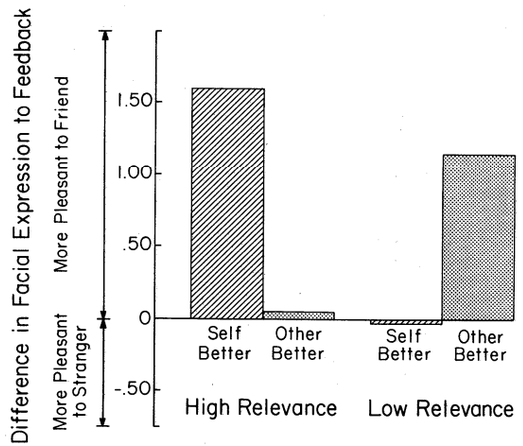

Fig. 8. Difference in pleasantness of facial expression to close (friend) and distant (stranger) other as a combined function of performance feedback (self better versus other better) and relevance of task to subjects' self-definition. From Tesser, Millar, & Moore (in press).

relevance conditions. When the self outperforms the other there is no difference in pleasantness of expression in connection with feedback concerning the close and the distant other. However, when the other outperforms the self there is an increase in pleasantness associated with the close other (relative to the distant other). The results are complicated, embodying a three-factor interaction: Relevance × Performance × Closeness. But this is what the model predicts. It is precisely because the prediction is complex and the results seem to fit that we have more confidence in the model.

There were, however, some "common sense" expectations and even some predictions from the model that did not emerge. For example, overall expressions were not more pleasant when self outperformed other than when other outperformed self, nor was such an effect of relative performance more pronounced on the relevant task (an expectation derivable from the SEM model). These effects did, however, turn up on self-reports of affect. What did not turn up in the self-reports was the more complex, less transparent three-factor interaction. These data are reminiscent of Nisbett & Wilson's (1977) suggestion that persons sometimes tell more than they know. That is, self-reports, in this case of affect, may reflect one's naive theory concerning the factors that influence affect rather than the factors that actually do influence affect.

Taken together the results of the arousal study and the results of this study provide nice evidence for the idea that the operation of SEM processes will leave its fingerprints on emotional changes. The arousal study shows that the SEM processes will show themselves in tasks affected by emotion (Fig. 6, Arrow 1),

and the present study shows that the SEM processes will show themselves more directly in emotional expression (Fig. 6, Arrow 2).

C. THE RETROSPECTION OF SEM EMOTIONS

The previous two studies produced results that were consistent with the idea that SEM processes have predictable emotional outcroppings. In the first of these, a performance index of arousal behaved as predicted. Arousal measures, however, do not reveal differences in positivity/negativity. Therefore, the second study was run. A nonreactive, unobtrusive *directional* measure of affect, pleasantness/unpleasantness ratings of facial expression, also produced results which were consistent with the model. However, these ratings tell us little about the *qualitative* differences in emotion associated with various SEM circumstances. For example, when we are outperformed by someone on a relevant task we may not only be aroused and feel unpleasant, we may also experience the emotion of jealousy or envy (Sabini & Silver, 1982; Salovey & Robin, 1986). Or, when someone performs particularly well at something that is not personally relevant, not only may we feel aroused and positive, but we may also feel pride in that other's accomplishment.[7]

Qualitative differences in emotion have been indexed in a variety of ways including observation of the patterning of muscles in the face (e.g., Hager & Eckman, 1983) and the patterning of physiological indicators (e.g., Ax, 1953; Caccciopo & Petty, 1981; Schwartz, Weinberger, & Singer, 1981). Perhaps the most common way of studying differences in emotion is through self-report (e.g., Russell, 1980). Indeed, self-report is seen by some as the preferred method (e.g., Mackay, 1980). If, however, one believes that persons are often unaware of their feelings and if one recalls that there are sometimes nontrivial discrepancies between self-reports and other behaviors (as in the study reported immediately above), then one must have serious reservations about this approach. Nevertheless, self-report may provide a good beginning in our attempt to understand something about the quality of emotions produced in SEM situations: self-reports are easy to get and, more importantly, they can be used to make subtle, qualitative distinctions among emotions as long as there is language (and common understanding) to support those distinctions. With these points in mind we (Tesser & Collins, 1987) collected self-report data bearing on the emotional experiences associated with SEM situations.

The SEM model has three directly manipulable variables associated with it—

[7]I know of no single word in the English language that conveys this idea, but there is a word in Yiddish, *Nachas* (transliteration), in Spanish, *orgullo,* in Portugese, *orgulho,* and perhaps some other languages as well.

interpersonal closeness, relative performance, and relevance of the performance dimension to one's self-definition. If each of these dimensions is dichotomized and all combinations are taken, they form eight canonical situations: (1) close other who performs better on a highly relevant dimension, (2) distant other who performs better on a highly relevant dimension, and so on. Thirteen males and thirteen females, run one at a time, were asked to recall, as vividly as possible, an instance of each situation. For example, they were asked to recall a situation of high relevance where a close other performed better: "All of us have things at which it is personally important to do well—it may be video games, or rock and roll trivia, or playing an instrument, etc. Try to recall a situation in which you and another person were performing on such a dimension that is important to you and the other person performed better than you. Think specifically of an instance in which this other person was one with whom you had some kind of relationship, e.g., a friend, a relative, someone from your own hometown." Subjects were encouraged to describe the situation in detail and "to put themselves into the situation and recall as best they can the feelings they experienced." Order of the eight situations was counterbalanced across subjects. Following the elicitation of each situation subjects were guided in the recall of their emotional reactions.

The work of Smith and Ellsworth (1985) was closely followed in eliciting reports about emotion. They found that the recall of emotional situations could be characterized in terms of six dimensions: pleasantness, self–other responsibility/control, certainty, attentional activity, anticipated effort, and situational control. Therefore, subjects were interviewed about the extent to which a number of items related to these dimensions characterized their recollections. They were also given a questionnaire asking them to rate the extent to which they experienced 18 different emotions in each situation: 15 of these duplicated those used by Smith and Ellsworth and 3 were introduced because of their presumed association with the reflection process (pride in other) and the comparison process (envy and jealousy).

Rather than treating the canonical situations as a single factor with eight qualitatively different levels, the data were analyzed in terms of a 2^3 ANOVA in which the generating factors (Closeness, Performance, and Relevance) served as independent variables. Although manipulation checks revealed that Closeness was satisfactorily manipulated, it had very little influence on self-reports of the situational dimensions related to emotion or to ratings of the emotions themselves. Therefore, we collapsed over Closeness in reporting the results in Tables IV and V.

As can be seen in Table IV, one's relative performance and its relevance to one's self-definition are associated with the dimensions that distinguish emotion-producing situations according to Smith and Ellsworth. Smith and Ellsworth's first factor, Pleasantness, is indexed by the first three entries. It is not surprising to learn that situations in which one outperforms another are seen as more

TABLE IV
RATINGS ON SMITH AND ELLSWORTH'S DIMENSIONS AS A FUNCTION OF PERFORMANCE AND RELEVANCE[a]

Smith & Ellsworth dimensions	Means				Tests of effect $F(1,24)$		
	Low relevance		High relevance				
	Other better	Self better	Other better	Self better	Relevance	Performance	Relevance × Performance
Enjoyable	9.38	11.37	4.90	15.54	<1	131.12***	80.08***
Obstacle	8.10	6.22	12.77	8.50	30.64***	18.52***	4.09
Legitimate	4.83	5.88	1.92	5.85	8.44**	22.98***	8.82**
Other responsible	6.13	4.71	5.75	4.62	<1	15.91***	<1
Self responsible	5.60	6.33	6.31	7.62	8.69**	10.13**	1.96
Other control	5.31	4.85	5.94	4.96	1.53	2.23	<1
Self control	6.29	6.49	5.90	7.73	1.83	9.21**	11.70**
Certainty	11.62	10.76	9.85	10.42	4.43*	<1	1.53
Attention	6.83	7.04	11.79	10.88	38.46***	<1	1.34
Effort	6.08	6.35	11.15	8.65	36.74***	4.93**	5.85*
Situational control	3.48	3.92	3.92	3.17	1.56	<1	<1

[a]Respondents were asked to characterize each of the eight canonical SEM situations on a number of dimensions using a 9-point scale. Table entries comprise various combinations of these responses. Thus, "Enjoyable" is the sum of responses to the questions "How pleasant was it to be in this situation?" and "How enjoyable was it to be in this situation?" Other combinations in abbreviated, paraphrased form are as follows: "Obstacle"—"necessity to solve problems" plus "obstacle in path to what wanted"; "Legitimate"—"how fair" minus "feel cheated/wronged"; "Other responsible"—"how responsible is other person/thing"; "Self-responsible"—how responsible is self"; "Other control"—"degree of other's control"; "Self-control"—"degree of self-control"; "Certainty"—"how well understand" plus "how well can predict" minus "how uncertain"; "Attention"—"consider thing further" plus "devote attention"; "Effort"—"need to exert self" plus "mental/physical effort required"; "Situational control"—"importance of circumstances beyond anyone's control."

*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

enjoyable, having fewer obstacles, and being more legitimate than are situations in which the other outperforms self, particularly when the performance is relevant. In addition, persons rate relevant situations as having more obstacles and being less fair (legitimate) than irrelevant situations.

The items beginning with "Other Responsible" and ending with "Self-control" tap Smith and Ellsworth's Responsibility/Control dimension. Persons tend to characterize situations in which they outperform another as situations in which they have greater and the other has less responsibility/control. On the other hand, the only variable that affects Smith and Ellsworth's certainty and attention dimensions is relevance. Highly relevant situations are associated with less certainty and greater attention than are less relevant situations. While relevance and performance do not affect Smith and Ellsworth's situational control dimension, they do affect the effort dimension. Better relative performance is associated with less effort but only on more relevant tasks; in general, relevant situations exact more effort than irrelevant tasks.

Subjects also rated the extent to which each situation elicited various emotions. As can be seen in Table V, some emotions were affected only by the relevance of the situation. Thus, regardless of performance, more relevant situations were associated with more challenge, fear, guilt, interest, and surprise than less relevant situations. Boredom was affected by relevance (higher relevance is associated with less boredom) and performance (own better performance is associated with less boredom). The results suggest that the relevance manipulation seems to have an orienting function. It has a main effect on Smith and Ellsworth's Attention dimension and on the emotions of interest, surprise, and boredom, and that main effect is unqualified by any interaction.

On the other hand, most of the emotion ratings were affected by Performance, and, importantly, by the interaction of Relevance and Performance. A general summary (with one exception) is that the more relevant the situation the greater the impact of performance on emotional experience: own better performance is associated with greater happiness, hope, and pride than other better performance, particularly when the situation is relevant; other better performance is associated with greater anger, contempt, disgust, envy, frustration, jealousy, sadness, and shame than own better performance, particularly when the situation is relevant. Although pride was on the original Smith and Ellsworth list, envy and jealousy were added because of their presumed connection with the comparison process. It is noteworthy that these emotions were more affected by Performance when Relevance was high and, according to the SEM model, the comparison process is more important when relevance is high.

As might be anticipated, pride-in-other, the only emotion clearly associated with the reflection process, produced a different pattern. It is higher when other outperforms self. This difference, however, is more pronounced when the situation is low in relevance. (Recall that the reflection process is more important under low relevance than under high relevance.) This variable was also affected

TABLE V
EMOTIONS ASSOCIATED WITH PERFORMANCE AND RELEVANCE

Emotions	Means				Tests of effect $F(1,24)$		
	Low relevance		High relevance				
	Other better	Self better	Other better	Self better	Relevance	Performance	Relevance × Performance
Challenge	5.71	5.63	7.02	6.44	11.78**	1.07	<1
Fear	2.12	2.08	3.56	2.85	11.06**	3.62	1.84
Guilt	2.12	2.20	3.23	2.73	10.94**	<1	1.49
Interest	5.37	5.71	7.15	7.62	72.09***	2.36	<1
Surprise	3.56	4.20	5.17	5.63	23.74***	2.53	<1
Boredom	3.73	2.76	2.10	1.69	17.85***	6.20	<1
Happiness	4.25	6.08	2.46	8.10	<1	170.35***	111.22***
Hope	4.42	4.84	4.85	6.75	14.76**	11.58***	9.53**
Pride[a]	3.23	5.78	3.69	7.94	20.81***	62.08***	10.98**
Anger	3.48	2.12	6.56	1.92	33.42***	88.98***	63.28***
Contempt	3.46	3.24	5.37	3.15	9.34***	7.25**	14.99***
Disgust	3.58	1.94	6.17	1.87	14.09***	80.12**	28.10***
Envy[a]	4.60	1.82	7.08	1.75	18.17***	276.09***	22.97***
Frustration	4.67	3.02	7.06	2.40	6.67*	111.72***	22.83***
Jealousy[a]	4.23	1.73	7.13	1.48	19.67***	218.45***	35.13***
Sadness	3.37	2.00	6.44	2.10	33.70***	299.19***	31.12***
Shame	3.19	1.82	5.46	1.75	17.72***	66.35***	21.90***
Pride in others[b]	5.42	3.12	4.15	3.56	2.44	15.31***	5.81*

[a]Presumed to result from the threat of comparison.
[b]Presumed to result from the promise of reflection.
*$p \leq .05$. **$p \leq .01$. ***$p \leq .001$.

by closeness: persons had more pride in close others than in distant others, particularly when the other outperformed the self.

These data make it clear that persons do recollect situations that vary in ways that the SEM model says are important as also varying on the dimensions that, according to Smith and Ellsworth (see also Abelson, 1983; Roseman, 1984; Scherer, 1982), affect qualitative differences in emotion. Further, these situations also appear to be associated with qualitatively different emotions. More specifically, although closeness had less impact than the model would suggest (and less than we would expect on the basis of Salovey and Rodin's 1984 work), there appears to be some evidence for the SEM processes. Recall that the importance of the comparison process is directly related to relevance, and the importance of the reflection process is inversely related to relevance. Emotions that we might intuitively expect to be most closely associated with the comparison process, such as envy, pride, and jealousy, were most affected by performance when the task was high in relevance; the emotion that we might intuitively expect to be most closely associated with the reflection process, pride in other, was most affected by performance when the situation was low in relevance.

In sum, the reports of qualitative differences in emotion seem to provide some additional support for the utility of viewing SEM processes as having emotional concomitants. The data are encouraging. In light of our initial skepticism concerning self-reports, however, we regard them as preliminary.

VIII. The Causal Role of Affect in SEM Processes

Arrow 3 (Fig. 6) draws our attention to another question. If the self-evaluation maintenance processes result in emotion, then we ought to be concerned with whether that emotion is strictly a correlate of SEM processing, i.e., an epiphenomenon, or whether it plays a mediational role in behavioral adjustment. I know of no work addressing this question. Again, however, the question is important and there are some hints in the literature about how to proceed. For example, some creative work by Dan Batson (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981) shows that it is the emotions one experiences at the plight of another that mediate helping. Similar work needs to be done on the SEM model.

IX. The Embeddedness of SEM Processes

The point to be made in connection with Arrow 4 (Fig. 6) is also speculative. The self-evaluation maintenance model has been presented as if it were a set of

processes independent of other processes. It seems likely that this is an oversimiplification. That is, self-evaluation maintenance processes may really be part of a larger self-system. If this is true, then threats to the self that are unrelated to the SEM model should facilitate the operation of self-evaluation maintenance processes and unrelated enhancement of self should decrease the need to engage in these processes.

In general, the self-system appears to be relatively encompassing. It appears to cross-cut a number of apparently unrelated domains (e.g., Greenberg, Pyszczynski, & Solomon, 1987). For example, Apsler (1975) found that embarrassment, a threat to self-esteem, resulted in greater helpfulness on an unrelated task, a presumed attempt to bolster self-evaluation. Liu and Steele (in press) have shown that self-affirmation tends to ameliorate the consequences of learned helplessness.

One of the most influential theories in social psychology is the theory of cognitive dissonance. Several prominent theorists (e.g., Aronson, 1969; Greenwald & Ronis, 1978) have suggested that this theory can be construed in terms of self-maintenance. Indeed, in a series of elegant studies Steele and Liu (1981, 1983) have convincingly implicated the self in dissonance studies. In one study, (Steele & Liu, 1983), for example, the student subjects were given either high choice or low choice to write an essay which was discrepant with their attitudes, i.e., they wrote in favor of a tuition increase. After completing this essay, the subjects filled out a questionnaire covering political–economic values. For half the subjects this was an important value orientation and filling out the scale allowed them to reaffirm that value. For the remaining subjects it was an irrelevant value orientation. Finally, attitudes toward a tuition increase were measured. The typical dissonance effect is greater attitude change in the direction of the essay with greater choice. This effect was found only for the subjects who did not have an opportunity to affirm their self-values. Dissonance reduction did not manifest itself if subjects had an intervening opportunity to reaffirm an important self-value. Thus, dissonance processes appear to the part of the operation of a larger self-system. (See Steele, this volume, for an extended discussion of this research.)

More to the point, I know of no work examining unrelated threats and self-evaluation maintenance processes to see their combined effects on emotion. However, the work of Cialdini and his colleagues (Cialdini *et al.*, 1976; Cialdini & Richardson, 1980) on BIRGing has demonstrated that unrelated threats to the self result in behavioral adjustments that look very much like the result of the reflection process. Their findings are clear. When self-esteem is threatened by failure on a task, persons are more likely to bask in the reflected glory of a group with which they are associated or to "blast" a group with which they are not associated. This happens, even though the task at which they failed had nothing to do with the target groups!

X. Conclusion

It should be clear that the SEM approach has implications for a variety of areas of concern to psychologists. It has implications for prosocial behavior, the helping and hurting of others to affect their performance. It has implications for one's own personal performance as well. There are implications for interpersonal relationships, attraction, unit formation, and the like (See Campbell & Tesser, 1985, for discussion). It also raises some developmental questions: What is the origin of the self-evaluation maintenance processes? How do they play themselves out in families? (See Tesser, 1984, for discussion.) Lowered self-evaluation and negative affect are the hallmarks of depression. The SEM model provides a social psychological perspective for understanding these symptoms. Each of these implications is worth pursuing, but they are beyond the present discussion.

Acknowledgments

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