This paper describes the Self-Evaluation Maintenance (SEM) model of social behavior which consists of three variables: the psychological closeness of another, the relative performance of that other, and the relevance of the performance dimension to one's self-definition. The SEM model is described as involving two processes, the reflection process and the comparison process. Relationships among the three variables are hypothesized, such as the raising of one's own self-evaluation by the good performance of another person close to one's self. Experimental research is discussed which provides support for the hypotheses that when relevance is high the comparison process is more important than the reflection process and that when relevance is low the reflection process is more important than the comparison process. Findings of research on siblings are presented which also give supporting evidence for the model. The implications of this research to psychologists--which involve pro-social behavior, interpersonal relationships, and unit formation--are discussed. The predictions that the SEM model provides for relationships are discussed and the role of affect/emotion in the working of these processes is explored. Five pages of references as well as tables and figures are included. (ABL)
Toward a Self-Evaluation Maintenance Model of Social Behavior*

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ABSTRACT

This paper describes a Self-Evaluation Maintenance (SEM) model of social behavior. The model consists of three variables, the psychological closeness of another, the relative performance of that other, and the relevance of the performance dimension to one's self definition. These variables are hypothesized to interact to affect one another. Evidence for the model is reviewed. The systemic character of the model and the interactive nature of the predictions are commented on. Finally, the role of affect/emotion in the working of these processes is explored.
Toward a Self-Evaluation Maintenance Model of Social Behavior

I appreciate the opportunity to address you today and to describe to you some of the research that has kept me preoccupied over the last six to eight years. The research deals with something I call a Self-Evaluation Maintenance model. In the time allotted to me I'd like to (1) briefly describe that model to you; (2) describe several studies to give you a feel for the kind of research that has been completed in an attempt to explore the predictions of the model; (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. In the final part of the talk, I would like to 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.

The Self-Evaluation Maintenance (SEM Model)

The self-evaluation maintenance (SEM) model assumes that (a) persons behave in a manner that will maintain or increase self-evaluation; and (b) one's relationships with others have a 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, i.e., 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 own'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, etc. See Campbell & Tesser, 1985, for a 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 a 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 Alice. She can spend less time around her or focus on ways in which the two of them are different, etc. by reducing 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.
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.

Some Research Examples

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 this question 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. Males 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, etc. (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 in
of the 13 sessions the friend was helped more than the stranger. When relevance was high, in 10 of the 13 sessions the stranger was helped more than the friend.

Now I would like to turn to another laboratory study. This one, conducted with Jennifer Campbell (Tesser & Campbell, 1982), tested the same hypotheses. 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) and the false consensus effect (e.g., Ross, Greene, & House, 1977; Sherman, Presson & Chassin, 1984). It also permits the possibility of contrasting the SEM predictions with predictions that might be derived from a straight-forward information processing model and from balance theory.

This time we worked with friendship pairs of females. When two pairs of friends reported to the laboratory 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 judgement 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 judgement 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 friends than toward a stranger. When relevance is high this effect should be attenuated perhaps even reversed. Contrast this prediction with one that might be derived from balance theory: Since one likes or is in a unit relationship with a friend, but not necessarily with a stranger, one should attribute good things to one's friend. Or, contrast the SEM 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 that the other gave that was similar to her own answers. There were no differences as a function of closeness as predicted by the information processing model. Turning now to positivity in perception, or the number of answers the subject guessed the other would get right, we can see that the SEM prediction is upheld. As can be seen in Figure 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 appears to support the SEM model rather than
predictions derived from balance theory or the information processing model.

Indeed, some recent work on the false consensus effect seems to support the "projection" aspects of these findings. The work of Gary Marks (1984) suggests that when dealing with performance dimensions or ability dimensions rather than a false consensus effect, one obtains a false uniqueness effect. Jennifer Campbell (in press), 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 & Wan (in press) 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.

Now I would like to 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 and to make a prediction. When relevance is high the comparison processes 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 hypotheses, 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, 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, was 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.

Let me tell you at the outset, 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 were sustained. Let us look first at the behavioral index (see Figure 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, show the predicted effect while the affective index did not.

Before we take this conclusion too seriously, however, I would like to describe to you a study that was recently completed by Toni Giuliano and Dan Wegner (personal communication, May, 1985). The study was done for another purpose but seems to have some clear implication 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 nonself 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 the expert. They could either say, they themselves were an expert, the other was an expert, that they were both experts, or that neither was an expert. The researchers then computed what they called a differentiation score, i.e., the number of items that the couple agrees are the domain of one or the other member. (For example, the male marks self and the female marks other.) This differentiation score was then correlated with rated relationship satisfaction and yeilded correlation of .60.

The Giuliano and Wegner data seem to provide some long sought after evidence for the notion of complementarity in interpersonal attraction. The data are also consistant with the SEM model. It seems to me that although the prominent finding in the interpersonal attraction literature is for similarity, this similarity is likely to be found on what we have sometimes call emotional dimensions (Campbell & Tesser, 1985; Tesser, 1984). That is, values, opinions, and the like. As noted above, we are more likely to find patterns of complementarity or uniqueness associated with closeness when we look at things like ability domains or performance domains.

Now I would like to 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 to be to one's self-definition, particularly if the other person is close.

I would like to describe a study to you, that also 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 vs. private self evaluation maintenance. This issue is beyond the scope of this talk (See Tesser & Barbee, 1985; Tesser & Moore, in press; 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 vs. low in cognitive-perceptual integration.

Each of the measures produced the same pattern of results. They were therefore combined and are displayed for you in Figure 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 Del and I found and the interaction is significant.

Now I would like to leave the laboratory and take you to a real world setting, that of the family. I have had the good fortune of being associated with William Owens for a number of years. He has collected biographical data on a large number of undergraduates at the University of Georgia. 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 three years of age were closer than siblings separated by more than three 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 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 Figure 4 is the effect of closeness. That is, a positive number means more identification when the sibling is close, less than three years apart in age, than when the sibling is distant, more than three 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. It is the data for males that is displayed 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 (image) leads to greater identification. Thus, the model appears to have some non-trivial implications for self-identity and for intrafamily relationships. Those implications, particularly those concerning family relationships have only begun to be explored.

Things to Notice about the Model/Research

I have given you some idea of the SEM model and how it works. You have
also seen some illustrations of the research. Now I would like to take some
time to reflect on the research and some properties of the model. We focus
first on the research. We have attempted to make the research comprehensive.
In the Tables 1-3, I summarized only the

/Insert Tables 1-3 about here/

research associated with the Georgia group. As you can see, we have used both
cognitive and behavioral dependent variables (Tesser, in press). Second, we
have attempted to validate the findings from laboratory research in the
field. Third, 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 1), we have cognitive dependent
variables, 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 non-laboratory setting, a public school.
Similarly, in looking at the impact of quality and relevance of performance on
interpersonal closeness (Table 2) we have cognitive measures; ratings of
general similarities coming from a laboratory study and ratings of sibling
friction coming from a non-laboratory 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 3), 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.
It should also be clear that the research has implications for a variety of areas of concern to psychologists. It has implications for pro-social behavior, the helping and hurting of others to affect their performance. It has implications for one's own personal performance as well (see Tesser, 1985 for discussion). There are implications for interpersonal relationships, attraction, unit-formation and the like (see Campbell & Tesser, 1985 for discussion). It also raises some developmental questions such as What is the origin of the self-evaluation maintenance process? How do they play themselves out in families? (see Tesser, 1984 for discussion). Each of these implications are worth pursuing but are beyond the present discussion.

You should also notice, if you haven't by now, that the model is systemic (Carver & Scheier, 1981; Powers, 1973). As can be seen in Figure 5.

/Insert Figure 5 about here/

Each of the variables are at the same time both a cause and an effect. And, their status as cause or effect is indistinguishable in the "real world", but 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.

**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 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). Hence, relevance should increase with closeness. This modeling effect of closeness on relevance is in a direction opposite to the self-evaluation effect of relevance on closeness. Again, the problem can be handled by making predictions in terms of interactions.

Notice that in each case the weaker prediction is specific in terms of directional 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 effects 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.
The Epistemological Status of the SEM Model

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 processes are real how might they be detected? I believe that the operation of these processes are often relatively fast and, even more importantly, outside of conscious awareness (see Tesser, in press, section on "awareness"). Therefore, self-reports regarding the "self concept" 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 Figure 6.

/Insert Figure 6 about here/
The figure is really not as complicated as it looks. The circle on the left labeled Antecedent Conditions represents combinations of relevance, performance, and closeness. These combinations 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 emotion 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, i.e., 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 by bypassing the SEM process itself and its concomitant emotional expression.

Now focus on arrow two. 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". 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, Fisher, and Ben-Itzhak (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.

Let's turn now to arrow number 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's 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 Murray Millar and I (in preparation) went back to the laboratory. Female subjects were invited to participate with a friend. Two pairs of friends showed up 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 their 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 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 opposite direction, the overall prediction is for a three factor interaction, Performance x Closeness x Complexity.

When we analyzed the amount of time it took to complete the task, this interaction emerged at a significant level, $p < .03$ (see Figure 7).

/Insert Figure 7 about here/

Recall, 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, i.e., 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 number 1.

The predictions associated with arrows 3 and 4 (Figure 6) are much more speculative. I have talked about the self evaluation maintenance model as if
it were a set of processes independent of other processes. It seems to me
that this also is a oversimplification. I believe that self evaluation
maintenance processes are really part of a larger self system. Therefore,
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, in press). For example, one can construe
dissonance theor in self-maintenance terms (e.g., Aronson, 1969; Greenwald &
Ronis, 1978). And, indeed Steele and Liu (1981, 1983) have shown that
affirmation of the self on one dimension reduces dissonance on an unrelated
dimension. 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. Finally, Liu & Steele (under review) have shown that
self-affirmation tends to ameliorate the consequences of learned
helplessness.

I know of no work relating unrelated threats to the 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!
The final arrow, Arrow 4, 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 et al., 1981) shows that it is the emotions one experiences at the plight of another that mediates helping. Similar work needs to be done on the SEM model.

Epilogue

I have taken you on a research odyssey. One that has fascinated me over the last several years and one which I hope has interested you. Obviously, there is much to be done in attempting to understand the role of self evaluation in social behavior. I invite your collaboration.
References


### Table 1

The Impact of Closeness and Relevance on Affecting Another's Performance

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Independent Variable(s) Closeness/Relevance</th>
<th>Dependent Variable Other's Performance</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tesser &amp; Campbell (1982)</td>
<td>Laboratory</td>
<td>Closeness: Friends vs Strangers</td>
<td>Cognition</td>
<td>More positivity in guesses about friend compared to stranger on low relevance dimension; reversed on high relevance dimension.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relevance: Rated importance of social sensitivity vs. esthetic judgement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tesser, Campbell, &amp; Smith (1984)</td>
<td>Non-Laboratory</td>
<td>Closeness: Classmate most like to spend time with vs classmate least like to spend time with.</td>
<td>Rating of own and others' performance.</td>
<td>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 derog rated on both activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relevance: Activity rated most vs least relevant from among a set of school related activities.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tesser &amp; Smith (1980)</td>
<td>Laboratory</td>
<td>Closeness: Friends vs Strangers</td>
<td>Difficulty of clues given to others to guess &quot;password&quot;.</td>
<td>Friend given easier clues than stranger when task relevant; reversed when task not relevant.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relevance: Told task measures important characteristics (e.g. verbal intelligence) vs task unrelated to important characteristics.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: From Tesser (in press) with permission.
Table 2
The Impact of Quality and Relevance of Performance on Interpersonal Closeness

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Independent Variable(s)</th>
<th>Dependent Variable</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleban &amp; Tesser (1981)</td>
<td>Laboratory</td>
<td>Performance: Feedback on college bowl competition.</td>
<td>Closeness</td>
<td>The more decisively one is outperformed on a high relevant dimension the less the general similarity, of other. Performance poorer than own had no impact on closeness.</td>
</tr>
<tr>
<td></td>
<td>Non-Laboratory</td>
<td>Relevance: Topic rated most relevant vs least relevant.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tesser (1980, Study 2)</td>
<td>Laboratory</td>
<td>Performance: Sibling rated as performing poorer vs equal vs better.</td>
<td>Cognition</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Non-Laboratory</td>
<td>Relevance: Presumed to be high; performance on popularity, skills, possession and appearance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pleban &amp; Tesser (1981)</td>
<td>Laboratory</td>
<td>See above.</td>
<td>Action</td>
<td>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. Relationship reversed on low relevance dimension. Performance poorer than own had no impact on closeness.</td>
</tr>
<tr>
<td></td>
<td>Non-Laboratory</td>
<td>Performance: Presumed to be high since found in standard biography.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relevance: Ratings of similarity of occupation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tesser (1980, Study 3)</td>
<td>Non-Lab</td>
<td>Performance: Presumed to be high since found in standard biography.</td>
<td>Closeness</td>
<td>The more similar the son's accomplishment to the father's profession the more distant the relationship.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relevance: Ratings of similarity of occupation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: From Tesser (in press) with permission.
Table 3
Self-Definition: The Impact of Performance and Closeness on Relevance

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Independent Variable(s)</th>
<th>Dependent Variable</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tesser &amp; Campbell (1980)</td>
<td>Laboratory</td>
<td>Closeness: Manipulated personality similarity. Performance: Feedback of relative performance on social sensitivity and esthetic judgment.</td>
<td>Change in rated importance of social sensitivity and esthetic judgment to self.</td>
<td>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.</td>
</tr>
<tr>
<td>Tesser &amp; Paulhus (1983)</td>
<td>Laboratory</td>
<td>Closeness: Manipulated similarity of age, major, personality. Performance: Feedback of relative performance on &quot;Cognitive-Perceptual Integration&quot;</td>
<td>Rated importance of Cognitive-Perceptual Integration.</td>
<td>The poorer one's performance relative to the other the less important cognitive-perceptual integration to one's self-definition.</td>
</tr>
<tr>
<td>Tesser (1980, Study 1)</td>
<td>Non-Laboratory</td>
<td>Closeness: Siblings less than three years apart vs more than three years apart. Performance: Sibling rated as performing poorer, equal, or better on popularity skills, possessions and appearance.</td>
<td>Identification/deidentification with sibling on performance dimensions.</td>
<td>No effects 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.</td>
</tr>
</tbody>
</table>
Table 3 (continued)

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Independent Variable(s)</th>
<th>Dependent Variable</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tesser &amp; Campbell (1980)</td>
<td>Laboratory</td>
<td>Closeness: Manipulated personality similarity. Performance: Feedback of relative performance on social sensitivity and esthetic judgment.</td>
<td>Choice of task on which to work.</td>
<td>The poorer one's performance relative to another's performance the more that performance dimension is avoided. This relationship was stronger for similar than dissimilar other.</td>
</tr>
<tr>
<td>Tesser &amp; Paulhus (1983)</td>
<td>Laboratory</td>
<td>Closeness: Manipulated similarity of age, major, personality. Performance: Feedback of relative performance on &quot;Cognitive-Perceptual Integration.&quot;</td>
<td>Amount of time spent looking at biographies of person high on Cognitive-Perceptual Integration.</td>
<td>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.</td>
</tr>
<tr>
<td>Described in Tesser &amp; Campbell (in press)</td>
<td>Non-Lab.</td>
<td>Closeness: Similar sex/similar race vs. dissimilar sex/race. Performance: Relative grade point average in school.</td>
<td>How much additional school desired.</td>
<td>The only significant predictor of additional school desired was grade point average relative to similar sex/race classmates.</td>
</tr>
</tbody>
</table>

Note: From Tesser (in press) with permission.
Figure Captions

Figure 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 Tesser and Campbell, 1982.

Figure 2. The effects of relative performance and relevance on closeness to other as indexed by behavioral, behavioroid, cognitive, and affective indices. From Pleban and Tesser, 1981.

Figure 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 Tesser and Paulhus, 1983.

Figure 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 Tesser (1980) Study 1.

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

Figure 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.

Figure 7. Time to complete a secondary task as a function of task difficulty (response competition), closeness of other (friend vs. stranger) and relative performance. From Tesser and Millar (in preparation).
POSITIVITY IN PERCEPTION

Task Relevance: REL.  IRREL.
Target: FRIEND  STRANGER
PERFORMANCE OF CONFEDERATE (IN CENTILE)

A

BEHAVIORAL INDEX (CLOSENESS IN SEATING)

HI RELEVANCE
LO RELEVANCE

B

BEHAVIORAL INDEX (WORKING WITH CONFEDERATE)

C

COGNITIVE INDEX (GENERAL SIMILARITY)

D

AFFECTIVE INDEX (LIKING)

PERFORMANCE OF CONFEDERATE (IN CENTILE)
PERFORMANCE IDENTIFICATION

More Identification when Sibling is Close

More Identification when Sibling is Distant

Sibling Outperforms Self

Equal Performance

Self Outperforms Sibling
SYSTEMIC NATURE OF SEM MODEL
Seconds to Complete Task

2.2
2.3
2.4
3.6
3.7
3.8
3.9
4.0
4.1

Self Other
Self Other
Self Other
Friend
Friend
Friend

Simple Task

Different + (Combinations)