RESEARCH ON SELF-SERVING BIASES OF TEACHERS AND STUDENTS: THE IMPACT OF DECEPTION

Eleanor Lawson and David McKinnon

Abstract

For three decades there has been research controversy over the self-serving bias in educational settings—the tendency for teachers and students to attribute success to internal factors and failure to external factors. This research portrays teacher-student relations as potentially conflicted because of attributional disagreements over student outcomes. A number of experiments have found that when students succeed, teachers attribute the success to themselves while students attribute the success to themselves; but when students fail, teachers attribute the failure to the student while students attribute the failure to the teacher. Some studies have found the opposite trend: teachers tend to attribute student failure to themselves and student successes to the student. Similarly, students may attribute successes to the teacher and failure to themselves. Commentators suggest that this counterdefensive bias may really be a self-presentational strategy. Controversy, then, centres on why a self-serving bias appears in some studies and a counterdefensive bias in other studies, and whether these attributional biases are genuine biases or realistic attributional processing in the artificial experimental context. Most studies reporting self-serving or counterdefensive biases have been deceptive experiments in which participants have been given false success or false failure feedback as a basis for making attributions. Attributional biases have been far less apparent in nondeceptive classroom studies. The purpose of this study, then, is to see whether false feedback artifactually contributes to findings of bias. This question is explored through a role play replication of a deceptive study by McAllister (1996) who reported self-serving attributional biases for both teachers and their students.

After thirty years of controversy, deception in research is still a popular research strategy and is still the focus of lively debate (Broder, 1998; Ortmann & Hertwig, 1997, 1998). Members of ethics committees in universities and other research institutions have recently reported that deception is their main concern (Council, Smith, Kaster-Bundgaard, & Gladue, 1999). It is used most frequently in social psychology experiments: 47% of the articles in the 1992 volumes of the Journal of Personality and Social Psychology were deceptive (Sieber, Iannuzzo, & Rodriguez, 1995). Although deception is less common in education research, a survey of the Journal of Educational Psychology shows that for 1969, 1978, 1986, 1992 and 1996, the percentage of deceptive studies consistently ranges between 10% and 13% (Lawson, 1998). The deceptions take many forms, including misleading statements of purpose, secret observation, use of confederates, and a range of deceptive manipulations in experiments. The most common form of deceptive manipulation is false feedback for performance on a task or test.

Controversy over deception has centered primarily on the ethics of its use and researchers have widely assumed that deception is a sound methodology. This assumption continues
Despite contrary evidence from a corpus of research studies in the 1960s and 1970s and a few more recent methodological challenges (e.g., Baumrind, 1985). Studies showed that participants are commonly suspicious or aware of deception in their experiments. They might identify the deception through the contradictions it creates (Glinski, Glinski, & Slatin, 1971); or they might learn about the deception from previous debriefed participants (Lipton & Garza, 1978). Furthermore a majority of suspicious participants will not admit their suspicions when postexperimental checks are carried out (Straits, Wuebben, & Crowle, 1982) so their data cannot be identified and discarded. Given the evidence of participant suspicion, another set of studies examined deception’s effects and found that it can create systematic distortions in research outcomes (Carlopio et. al, 1983; Weber & Cook, 1972).

These findings had little impact upon the widespread assumption that deception is a sound methodology and were overshadowed by the ethical dimension of the debate (reviewed in Lawson, 1997). The question of deception’s methodological soundness is primary, however. If deception is not a sound research strategy it is hardly ethically justifiable. It is the purpose of this study, then, to resume and extend enquiry into the methodological impact of deception. The early methodological research typically examined deception’s effects upon a single experiment. In this study the focus is extended to include the developing pattern of outcomes in a research area in which both deceptive and nondeceptive methods have been used.

The area chosen concerns the self-serving bias in attributions made by teachers and their students for the students’ successes and failures. A self-serving bias is a tendency to attribute success to oneself and failures to external factors—even when this causal asymmetry is not warranted. If teachers and students both have self-serving biases when attributing students’ outcomes, teacher-student relations can be conflicted and classroom morale lowered (Juvonen, 1988). Most studies of self-serving bias in education have been deceptive and have investigated teachers’ attributions for students’ performance. Typically participants have been teacher education undergraduates who have been given the experimental task of teaching material to a student. The student is then tested and the teacher is given the test result, which actually comprises false success or false failure feedback.

Outcomes differed across deceptive and nondeceptive field studies. The earliest studies were deceptive and shared a similar design: teacher participants taught several trials to a (nonexistent) pupil, who was supposedly learning behind a one-way screen (e.g., Beckman, 1970; Brandt, Hayden, & Brophy, 1975). A clear self-serving pattern emerged in these studies. Critics pointed out, however, that the pattern of false success and false failure trials logically cued more internal attributions for success and more external attributions for failure (e.g., Miller & Ross, 1975). Hence they maintained that the self-serving pattern might simply reflect information processing rather than motivated bias.

Other researchers tried to design deceptive studies to overcome the possibility of an information processing interpretation (e.g., Ames, 1975; Ross, Bierbrauer, & Polly, 1974). They reduced the number of trials to one, introduced a real (confederate), and gave success and failure feedback, which they thought, would make internal and external attributions equally realistic. They hoped thereby to ascribe any self-serving pattern of attributions to motivated bias, not to realistic information processing. Surprisingly, their studies yielded marked reversals of the self-serving pattern. Explaining this outcome, researchers surmised that introducing real pupils may have aroused both the teachers’ sense of responsibility for student failures and their wish to give students credit for success (Ames, 1975; Bar-Tal & Guttman, 1981). Others argued that specified procedures might have increased self-presentational motives which manifested in the socially desirable reversal of the self-serving pattern (e.g., Bradley, 1978; Ross et. al, 1974).
To evaluate the contradictory findings across the deceptive studies, Bar-Tal and his colleagues explored the attributions of real classroom teachers for their students’ exam results and also collected the students’ attributions (Bar-Tal & Guttman, 1981; Darom & Bar-Tal, 1981). Some evidence of a self-serving pattern amongst teachers emerged, but teachers gave credit for success to students as well as to themselves. Bar-Tal & Guttman concluded that in field studies teachers give neither extreme self-serving attributions nor extreme reversals of self-serving pattern. They also emphasised that insofar as the self-serving pattern did emerge in their studies, it could be ascribed to either realistic information processing or motivated bias.

Reviewing the sequence of studies in the area, McAllister (1996) highlighted the contradictory findings: the evidence for the self-serving pattern and the evidence for the reversal of this pattern. He set out to resolve past inconsistencies. To this end he conducted both a deceptive study and a nondeceptive study taking attributions for teachers and students in both studies. Arguing that researchers’ should directly assess participants’ ascriptions to the locus (internal-external) dimension rather than inferring locus indirectly from attributions, McAllister used the Causal Dimensions Scale (Russell, 1982). In both the deceptive study and the field study he found significant evidence of the self-serving pattern: both teachers and students made internal attributions for a student's success and external attributions for a student's failure, though in the field study teachers shared credit for success with students. As both studies yielded similar patterns McAllister concluded that they provided—for the first time—clear evidence of self-serving bias in both teachers and students.

The purpose of the present study is to start exploring the effects of deception in this self-serving bias research. In principle, deceptive feedback may have three effects in a self-serving bias study: it may create or contribute to a self-serving effect, it may create or contribute to a reversal of the effect, or it may have no impact. It may be predicted that false feedback will shift attributions in the external direction. This prediction has two bases. First, studies have found that unexpected outcomes result in more external attribution (reviewed in Miller and Ross, 1975). On average, false feedback outcomes would be more unexpected than true feedback outcomes as participants’ expectations have some basis in the reality of their performance. False feedback is given, however, without regard to their performance. Second, when an experimenter manipulates a task outcome, the cause of that outcome is external. In so far as participants sense the experimenter manipulation—even vaguely—attributions should shift in the external direction.

In exploring the effects of deception in self-serving bias research, however, the further question is whether deception affects the locus of success and failure attributions differently. The causal asymmetry is likely to vary with variations in deceptive designs. An aim of this study is to begin identifying influential variations.

Method: Overview

A nondeceptive method was sought for the study. To this end a nonactive role-play procedure was used to replicate the broad design of deceptive studies on the self-serving bias. The replication most closely followed procedures used in the studies by McAllister (1996) and Ames’s (1975). McAllister randomly assigned university students into teacher-student dyads. Teachers prepared notes from a journal article and students studied these notes prior to taking a 10-item multiple choice test which teachers saw. Teachers and students were given false feedback for the student’s test performance: 9/10 for a success outcome and 5/10 for a failure outcome. They were then asked to make an attribution for the student’s outcome and complete the Causal Dimensions Scale. In the study by Ames (1975)
the false feedback was 9/10 for a success outcome and 3/10 for a failure outcome, and teachers were asked to make attributions for the (confederate) pupil’s performance.

The role play replication was designed to simulate the experience of participants who teach or learn material, who are involved in a test of that material, and who then receive performance feedback disparate with their expectations because it is false. In the present study, then, false feedback conditions were simulated through feedback that was disparate with expectations and true feedback conditions were simulated through feedback that was coherent with expectations. The effects of false feedback could then be explored by comparing attributions across false feedback and true feedback conditions. Typically, of course, the relations between expectations and true or false feedback would not be so clear-cut, though contradictions between expectations and outcome would, on average, be greater in false feedback conditions. To begin exploration of effects of false feedback, attributions were compared across false feedback and true feedback conditions.

**Participants.** A total of 151 first and second year teacher education undergraduate (109 females and 42 males) volunteered as participants.

**Procedure.** In the context of a mass lecture, questionnaire sheets were distributed to participants. These sheets randomly assigned participants to one of eight experimental conditions. The conditions varied according to Role (Teacher or Student), Outcome (Success—9/10 or Failure—3/10), and Type of Feedback (False or True). Participants in False Feedback conditions received feedback that differed from expectations by three or six marks, and participants in True Feedback conditions received feedback that aligned with their expectations. To illustrate the questionnaire, participants in the Teacher/False Success (3—9) condition (expectation 3/10, feedback 9/10), read the following vignette.

Imagine that you are in an educational psychology experiment. You are paired with another teacher education student and you are given the task of teaching this student the contents of a journal article. The article is about the effects of a pregnant mother’s use of alcohol on her unborn child. You first study the article and then you are given 40 minutes to explain it to your partner. Next the experimenter gives your partner a ten-item multiple-choice test. You see the test and think that your partner should get 3/10 questions right. Later the experimenter gives back the mark and it is 9/10.

After reading the vignette participants were asked for an open-ended attribution: "What do you think is the most likely cause of this result?" Participants then completed the Causal Dimension Scale with respect to the attribution they had given. Three items on this semantic differential scale comprise the locus subscale, which asks participants to assess the external-internal dimension of their attribution. The first locus item, for example, asks the extent to which the cause "reflects an aspect of yourself" or "reflects an aspect of the situation".

**Results**

To compare the effects of true and false feedback two forms of data were analysed. First, differences in locus placement on the Causal Dimension Scale were investigated. Second, participants’ open-ended attributions were analysed.
The Causal Dimension Scale: Locus Subscale

Differences in the locus of participants' attributions were investigated through one-way analyses of variance and post hoc multiple comparisons.

**Type of Feedback.** Analysis of variance does not yield an overall main effect for Type of Feedback. Thus, with Outcome and Role conditions combined, false feedback did not result in significantly more external attribution than true feedback.

**Type of Feedback and Outcome.** A significant main effect emerges across groups for Type of Feedback (True or False) and Outcome (Success or Failure), $F (3, 148) = 3.81, p < .012$. Post hoc multiple comparisons show a significantly higher (more internal) mean in the True Success condition than in the True Failure condition, but no significant difference between the False Success condition and the False Failure condition (Student-Newman-Keuls, $p < .05$). Thus a self-serving pattern is apparent in the True Feedback condition but not in the False Feedback condition. Additionally, the mean for the True Success condition is significantly higher (more internal) than the mean for the False Success condition. In the Success condition, therefore, false feedback was associated with more external attributions (See Table 1 & Appendix Figure 1).

<table>
<thead>
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<th>Group</th>
<th>Number of Participants</th>
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<td>12.64</td>
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<tr>
<td>True Failure</td>
<td>59</td>
<td>11.48</td>
<td>4.66</td>
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Table 1: Locus Means: Teacher and Student Conditions Combined

**Type of Feedback, Outcome, and Role** (Table 2). A significant main effect also emerged across groups for Type of Feedback, Outcome, and Role conditions, $F (7, 142) = 2.86, p < .008$). Post hoc multiple comparisons yielded some significant differences (Least Significant Differences, $p < .05$).

1. The reliability and validity of the locus subscale of the Causal Dimension Scale were checked for the context of this study. Analyses showed satisfactory reliability (Cronbach's alpha) for this subscale ($\alpha = .74$). Construct validity was demonstrated using a one-way analysis of variance. The independent variable was obtained from classification of students' attributions as internal, external, or both internal and external. The latter category was needed as some students gave two or three attributions in response to the open-ended question. The highest possible score on the locus scale was 21 (internal) and the lowest score was 3 (external). The mean for the Internal Group was 14.7, for the Both Group, 12.9, and for the External Group, 9.34. These scale means were significantly different, $F (2, 130)$
Post hoc multiple comparisons revealed that the mean for the Internal Group was significantly higher (more internal) than the means for the other two groups, and the mean for the Both Group was significantly higher than the mean for the External Group (Student-Newman-Keuls, p .05)

**Student Conditions.** For students, a self-serving pattern appears in both True Feedback and False Feedback conditions. Within each condition, responses are significantly more internal for success than for failure. (See Table 2 & Appendix Figure 2) These significant differences disappear, however, with the slightly more stringent Student Newman-Keuls test, so may reflect sampling error rather than a self-serving effect.

**Teacher Condition.** A self-serving pattern does not appear for teachers in either the True Feedback condition or the False feedback condition: in neither condition are the means for Success significantly higher (more internal) than the means for Failure. As in the Type of Feedback by Outcome analysis, however, the mean for True Success is significantly higher (more internal) than the mean for False Success (See Table 2 & Figure 3). This significant difference also disappears, with the more stringent test (Student-Newman-Keuls).

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of Participants</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
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<td>12.36</td>
<td>3.72</td>
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<td>15.00</td>
<td>3.14</td>
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<td>10.79</td>
<td>4.61</td>
</tr>
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</table>

**Table 2: Locus Means: All Treatment Groups**

**Teachers' Open-ended Attributions**

Teachers’ open-ended attributions were examined to enable more comparisons with previous studies, and to explore the finding that their attributions for success were more external on the locus subscale when feedback was false. Participants’ attributions were classified into the following categories: student, teacher, task, experimenter/marker, and luck. Interrater reliability between two raters was 87%. Most of the teachers’ attributions
were to student and/or teacher. Of 100 attributions made across all teacher conditions, 83
were to student or teacher, the remainder being distributed across task and
experimenter/marker attributions. (See Appendix, Table 1).

**Teachers’ Attributions to Teacher.**

Teacher attributions to teacher across different feedback and outcome conditions were
compared using chi-square analyses. These show that the pattern of attributions across
False Success and False Failure conditions is not independent (Fisher’s Exact test, =
9.3585, DF, 1, p < .01): when feedback was false teachers made more attributions to
themselves for a student’s failure than for a student’s success (see Appendix Table 2 &
Figure 4). No significant difference emerged, however, across True Success and Failure
conditions. Thus, a reversal of the self-serving pattern appeared with false feedback but not
with true feedback.

A further chi-square analysis showed that the pattern of attributions across True and False
Success conditions was not independent (Fisher’s Exact test =9.2273, DF 1, p < .01).
Teachers attributed student success less to themselves in the False Success condition than
in the True Success condition. (See Appendix Table 3 & Figure 4)

**Teachers’ Attributions to Student.** Teacher attributions to student across True and False
conditions were also compared using chi square analyses. No difference is apparent in
teachers’ attributions to students across True Failure and False Failure conditions. However,
the pattern of attributions across True Success and False Success conditions is not
independent (Fisher’s Exact test = 5.71, DF, 1, p < 0.019). Teachers attributed success to
students more in the False Feedback than the True Feedback condition (see Appendix,
Table 4 & Figure 5). To explore the meaning of the difference between True and False
Success conditions, teachers’ open-ended attributions to students were examined.

**Types of Teacher Attributions to Student across True and False Success Conditions.** Types
of student attributions included those commonly recognised in the attribution literature:
student ability and student effort. Another type appeared, however, which we called "student
prior knowledge". This attribution expressed the idea that the student must have known
material relevant to the test before the teaching session. In the False Success condition
more than half of the student attributions were to student prior knowledge (9.5/17
attributions).² In the True Success condition none of the attributions to student were to
student prior knowledge (0/4). Distinguishing the two False Success conditions (3—9 & 6—
9) furthermore reveals that the majority of student prior knowledge attributions (8/9.5) are
in the condition with the more marked contradiction between expectation and outcome: the
False Success (3—9) condition. Only 1.5/9.5 of the student prior knowledge attributions are
in the condition with a less marked contradiction between expectation and outcome—the
False Success (6—9) condition.

**Summary and Discussion**

Results for the locus subscale of the Causal Dimension Scale most notably showed that
combining responses for teachers and students, a self-serving pattern emerged in the True
Feedback condition: given true feedback participants made more internal attributions for
success than for failure. This difference did not appear in the False Feedback condition.
Overall, it seems that false feedback weakened the self-serving pattern. When teacher
conditions and student conditions were taken separately, it appeared that this weakening
effect largely derived from the teachers’ attributions. In the student conditions the self-
serve pattern was maintained with true feedback and also emerged with false feedback. In
the teacher conditions, however, no differences commensurate with a self-serving pattern
appeared. Although with true feedback means were in the self-serving direction, the false feedback means were not. Indeed, false feedback seemed to shift teachers' attributions in the external direction: attributions were more external in the false success than the true success conditions.

Analysis of teachers’ open-ended attributions to students and teachers amplified these trends. A significant reversal of the self-serving pattern appeared in the False

2. One participant classified as giving a student attribution included gave two student categories: prior knowledge and effort, so .5 was allocated to each.

Feedback condition: teachers were less likely to attribute students' success than students' failure to themselves. This reversal did not appear in the True Feedback condition. Analysis of teachers’ attributions for success cast more light on the reversal. Teachers made fewer attributions to themselves and more attributions to the student' for the students' success when feedback was false. For failure attributions there were no significant differences across true and false feedback conditions. It thus seems that success attributions are more influenced by false feedback than failure attributions, and that low attributions to teacher and high attributions to student in the false success condition strongly contribute to reversal of a self-serving pattern when feedback is false. Examination of types of student attributions furthermore revealed a predominance of “student prior knowledge” attributions in the false success condition, but an absence of this student attribution in the true success condition.

These results from the open-ended attributions hold implications for earlier findings of a reversal of the self-serving pattern (e.g., Ames, 1975; Ross et. al, 1974). Explaining this reversal some researchers argued that experimental procedures involving surveillance raised teachers’ concerns about self-presentation and prompted the reversal as a socially desirable response (e.g., Bradley, 1978; Ross et. al, 1974). Other researchers thought that using real pupils may have aroused teachers' sense of responsibility for student failures and their wish to give students credit for success (Ames, 1975; Bar-Tal & Guttman, 1981).

The present study challenges these interpretations and introduces a third explanation: that the reversals may be an artefact of deception. In the present study the reversal occurred in conditions of low surveillance of participants so a social desirability interpretation is not strongly supported. Nor is the other explanation supported for real students were not present to arouse the teachers’ sense of responsibility for student failure and their wish to give students credit for success. The appearance of the reversal in only the false feedback condition strongly suggests, however, that it might have been an artefact of deception: a realistic attributional response to the contradictory cues generated by the false feedback. Further support for this interpretation comes from the distribution of “student prior knowledge” attributions across False and True Success Conditions. The student prior knowledge attribution is a logical response to the contradiction between low expectation and high outcome in the False Success condition. In this condition the teacher taught material to a student and upon seeing the test gauged that the student should get 3/10 (or 6/10). When the mark of 9/10 was returned, it was logical to attribute the success to student prior knowledge of the topic. In previous deceptive studies, participants were permitted only forced choice student attributions that did not include a "student prior knowledge" alternative. Participants would have been forced to subsume a "student prior knowledge" attribution within the usual student attribution categories such as effort and ability. Reversals of the self-serving pattern may therefore have been an artefact of the expectation-outcome contradiction created by false feedback. That reversals may have been an artefact of deception is further suggested by the absence of notable reversals in the nondeceptive field studies of teachers’ attributions.
Other issues require attention as data from this study are examined further. As far as it goes the study strongly suggests that deception has caused some confounding in self-serving bias research by weakening the effect or contributing to its reversal when teachers are participants. A next question for consideration is "Why then did a significant self-serving effect for teachers emerge in McAllister’s (1996) when similar false feedback was used?" In the meanwhile it may be noted that McAllister set out to explain past inconsistencies in self-serving bias research and matched this aim with meaningful extensions of the research. An inconsistency he did not explain has been addressed in this study.
References


Appendix

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<tr>
<th>Teacher Attribution</th>
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<th>Task</th>
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**Table 1: Teacher Attributions According for Treatment Conditions.**

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<th>Teacher Attribution</th>
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**Table 2 Chi-Square Table: Teacher Attributions to Teacher in False Success and False Failure Conditions**
## Table 3. Chi-Square Table: Teacher Attributions to Teacher in False Success and True Success Conditions

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<td>Percentage</td>
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<td><strong>True Success</strong></td>
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<td>Count</td>
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| Column Total: Participants | 21 | 20 | 41 |
Table 4. Chi-Square Table: Teacher Attributions to Student in False Success and True Success Conditions