Journal for Articles in Support of the Null Hypothesis www.jasnh.com
Vol. 2, No. 1. Copyright 2003 by Reysen Group. 1539-8714

Questioning the Generality of Behavioral Confirmation to Gender Role Stereotypes: Does Social Status Produce Self-Verification?

Theodore W. McDonald
Boise State University

Loren L. Toussaint
Idaho State University

Many studies have been conducted to determine the degree to which people (targets) may be induced to behave in ways which are consistent with a perceiver's expectations (behavioral confirmation), and the degree to which people may resist behaving in ways which are inconsistent with their self-concepts (self-verification). These seemingly opposing tendencies, and the effects of social status on their occurrence, were systematically investigated in a replication and extension of an influential behavioral confirmation study. Seventy-two college students participated in a division-of-labor task. Crossing actual and perceived sex of the target, we explored the gender-stereotyped nature of participant preferences for masculine, feminine, and gender-neutral tasks. The results failed to replicate the behavioral confirmation effect in women, and found no evidence for such an effect in men; regardless of their perceived sex, both groups showed self-verification of their gender self-concept. Social status was found to have a negligible effect on when self-verification occurs. The generality of behavioral confirmation phenomena and explanatory ability of self-verification theory are discussed.

Social psychologists have long sought to find answers to the basic question: "What causes people to act as they do?" The social psychological literature is abundant with both theoretical and empirical articles speculating on the causes of behavior and offering evidence for both situational and dispositional determinants of behavior, yet some questions remain not fully answered. One of these questions concerns how the expectations of others about our attributes, abilities, or inclusion in certain social categories may actually lead us to act in ways consistent with their expectations, even when our dominant pattern of behavior is inconsistent with these actions. Another question involves how the expectations of others, so effective at shaping behavior in some situations, may cause us to engage in behaviors that deliberately contradict these expectations, in an assertion of self-control and attitude-behavior consistency. These two phenomena are known in social psychology as behavioral confirmation and self-verification, respectively (Swann & Ely, 1984). They represent two seemingly antithetical explanations for behavior in social situations, and the relative explanatory strength of each remains in question. The present study systematically evaluated the explanatory ability of both perspectives while replicating and re-examining a celebrated social psychology study.

Background History

The power of expectancies held by perceivers to control the behavior of others has been documented for nearly a half-century in the social scientific literature. Merton (1948, 1957) first coined the term "self-fulfilling prophecy" to describe situations in which the expectancies held by a person actually cause their expectancies to be fulfilled. The most often cited example of this phenomenon comes from the seminal work of Rosenthal and Jacobson (1968). In their field experiment, the researchers informed elementary school teachers that randomly chosen students in their classes had been identified as "late bloomers", intellectually gifted children who would outpace their peers in academic performance over the course of the school year. A later examination found this expectation to be confirmed. Rosenthal and Jacobson (1968) concluded that on the basis of their observations, these performance differences were caused not by any real differences in the ability of the children, but rather more effective instructional strategies on the part of the teachers, and less willingness to accept poor quality work from the children randomly identified as "late bloomers".

Certainly, the findings of Rosenthal and Jacobson's (1968) study have strong implications regarding the lack of academic achievement in certain populations of children (e.g., racial and ethnic minorities) who may not be expected to perform well due to ignorance or subtle racist beliefs held by teachers or administrators. But powerful demonstrations of the self-fulfilling prophecy have been found in other important areas as well; other researchers have found evidence of the self-fulfilling prophecy occurring in many other situations, including job interviewing (Langer & Imber, 1980), classroom cleanliness (Miller, Brickman, & Bolen, 1975) leadership in organizations (Eden, 1992) and even seasickness (Eden & Zuk, 1995). The ability to find evidence for self-fulfilling prophecies in such diverse settings seems to provide some support for the generality of these phenomena.

A special type of self-fulfilling prophecy that has engendered particular interest among social psychologists is behavioral confirmation, in which the expectations of others induce people to act in ways that are consistent with these expectations (Snyder, Tanke, & Bersheid, 1977). Snyder and his colleagues (e.g., Skrypnek & Snyder, 1982; Snyder, 1981; Snyder, 1992; Snyder & Swann, 1978; Snyder, Tanke, & Bersheid, 1977), who conducted some of the earliest and most-cited studies on behavioral confirmation, offer some excellent examples of how a target's behavior provides behavioral confirmation to a perceiver's initial (and often erroneous) belief. An excellent example comes from their study of the physical attractiveness stereotype. In this study, Snyder, Tanke, and Berscheid (1977) induced a number of college men to believe that they were conversing via tape recorder with an attractive potential female date, and other college men to believe that they were conversing with an unattractive potential female date. By coding and analyzing portions of the interaction, Snyder and his colleagues (1977) concluded that "those (female targets) who were thought to be physically attractive by their perceivers appeared to the observer judges to manifest greater confidence, greater animation, greater enjoyment of the conversation, and greater liking of their partners" (p. 662) than those women believed by their perceivers to be unattractive. Clearly, the women acted in ways that were consistent with the attractiveness stereotype activated in their dyadic partner. These findings suggest that we as human beings, who are the targets of many perceivers in everyday life, may routinely act in ways which are consistent not with our own attitudes, beliefs, or feelings, but rather with the perceptions and stereotypes which others hold of us and our attributes. These results, and others similar to them (e.g., Andersen & Bem, 1981), seem to suggest that the power of others' beliefs over our behaviors—even when those behaviors appear freely chosen—is extremely strong.

Although few, if any, social psychologists doubt that behavioral confirmation occurs, many doubt that it occurs with the frequency that might be assumed given the large literature on the topic. Even when evidence for self-fulfilling prophecies and behavioral confirmation are found, the effects of perceiver expectancies on target behavior tend to be relatively small in magnitude, with average effect sizes ranging from .1 to .3 (Jussim, 1991; Jussim & Eccles, 1995; Madon, Jussim, & Eccles, 1997). Further, the changes in target behavior as a result of perceiver expectancies are not particularly robust, according to Smith, Jussim, and Eccles (1999). These researchers reported, after a longitudinal study of the effects of early teacher expectancy effects on the academic achievement of children and adolescents, that although evidence for initial self-fulfilling prophecies were present, target behavioral confirmation of early teacher expectancies generally dissipated over time. Results such as these cast doubt over the robustness and generality of self-fulfilling prophecies and behavioral confirmation, which Smith and her colleagues (1999) characterize as being "neither powerful nor pervasive" (p. 548).

Indeed, a simple observation of interpersonal dynamics in everyday life reveals that often people do not confirm the perceptions and stereotypes held of them. For example, a woman may resist the sexist stereotype that she knows nothing about the mechanical operation of her automobile, or an African-American man may work harder in college to disconfirm the racist notion that men such as he are intellectually inferior to others. In fact, there is a wealth of research that supports the notion that people in many social situations will resist or attempt to dispel stereotypes that are inconsistent with their self-concepts (Lecky, 1945), or how people view themselves. Several researchers have found that people resist others' beliefs and social feedback about themselves when the beliefs and feedback included negative evaluations or included negative social labels (e.g., Farina, Alan, & Saul, 1968; Kray, Thompson, & Galinsky, 2001; McNulty & Swann, 1994; Steele, 1975), and other research suggests that people who hold a self-concept that is negative will actually resist or attempt to disconfirm positive feedback, evaluations, and social labels (Swann, 1997; Swann, Pelham, & Krull, 1989; Swann, Stein-Seroussi, & Giesler, 1992). Such findings are particularly well documented in the study of individuals suffering from clinical depression, who overwhelmingly tend to seek out and receive negative evaluations (Giesler, Josephs, & Swann, 1996; Giesler & Swann, 1999), but similar findings have emerged in other areas, such as regarding academic self-concept in children (Hay, Ashman, van Kraayenoord, & Stewart, 1999).

Central Question

Behavioral confirmation and self-verification seem to be opposing social psychological processes, in that behavioral confirmation involves change in a target's thoughts, feelings, or behavior as a function of the perceiver's beliefs, and self-verification involves cognitive, affective, or behavioral resistance by the target against perceiver beliefs which are contradictory to the target's self-concept. If these processes are indeed opposing, it is important to consider which is stronger, or at least which factors may dictate when a target's behavior confirms or contradicts a perceiver's expectations. One study that successfully pitted behavioral confirmation versus self-verification was conducted by Swann and Ely (1984), who studied the competing processes in a sample of university women who participated in a dyadic interviewing task. Crossing the certainty level (high or low) of perceivers about their targets (which could be either correct or incorrect) and the certainty level (high or low) of the targets concerning their own self-concepts, Swann and Ely (1984) found results which suggested that tendencies toward self-verification are stronger than those toward behavioral confirmation, at least in their experimental setting; self-verification *always*occurred when targets were highly certain of their self-concepts, regardless of the certainty of the perceiver's expectations. Self-verification also occurred reliably when neither the perceiver nor the target were highly certain of their beliefs. The only time in which the target's behavior reliably showed behavioral confirmation was when perceivers were highly certain of their beliefs, and targets were uncertain of their self-concepts.

Swann and Ely's (1984) experiment provides evidence for at least two conclusions. First, it seems that motivation to provide verification of our self-concept may override the tendency to behave in ways that are consistent with what others expect of us. Second, measurable factors, such as certainty, may act to influence whether we engage in self-verification or behavioral confirmation. Later studies suggest that both conclusions are valid. For example, in one of the few related studies which evaluated behavioral confirmation and self-verification as opposing processes, Testa and Major (1988; see also Swann, Milton, & Polzer, 2000) also found that university women tended to respond in ways which were consistent with their own, rather than a perceiver's, beliefs in an interactive setting. So clearly, self-verification has been demonstrated as a process which can deter people from behaviorally confirming the expectations held by others, and research continues on other factors which may influence how and why we self-verify.

In addition to certainty level, some of the other tested factors believed to influence self-verification have included a desire to remain consistent with one's self-concept (Swann, Stein-Seroussi, & Giesler, 1992), a desire to maintain positive evaluations (Jones, 1973), self-esteem (Giesler, Josephs, & Swann, 1996; Swann, Pelham, & Krull, 1989), and self-liking and self-confidence (Bosson & Swann, 1999). One potential influence which as yet has not been directly studied, and which may in part dictate whether self-verification rather than behavioral confirmation occurs, is the social status of the target. Social status is a construct that is well established in the social scientific literature, and is known to have an influence on how people think, feel, and act in myriad social situations. Each person carries into an interaction with others external status characteristics, which are markers of the status ascribed to them by society. Examples of external status characteristics include race, gender, age, and level of education; each of these conveys important information about value, competence, and worth which is culturally determined, and which has been shown to affect subordination and superordination in dyadic and group settings (McDonald, Toussaint, & Schweiger, 2003; Webster & Driskell, 1985).

Ample evidence abounds which suggests that when people possess status characteristics which are highly valued by society at large, they tend to perform better in group settings (Yoder, Schleicher, & McDonald, 1998), and have more positive expectations about their worth and ability to succeed in experimental tasks (McDonald et al., 2003). Thus, it seems reasonable to assume that social status may affect the degree to which a target successfully acts in a manner consistent with his or her self-concept; targets with high status may resist being induced to act in a manner consistent with that typically exhibited by low status actors, while targets with low social status may be more easily induced to act in a manner consistent with that typically exhibited with high status actors. As mentioned previously, social status has not been directly studied in any known study of either self-verification or behavioral confirmation, although Copeland (1994) studied the effects of the related construct of social power. Therefore, a major impetus for the present study was the desire to incorporate an analysis of the impact of social status on behavioral confirmation and self-verification processes in a typical experimental paradigm.

Study to be Replicated

A rich opportunity for examining the role of social status in behavioral confirmation and self-verification processes can be found by extending the work of Skrypnek and Snyder (1982), who developed an elegant experiment which is cited often in the field of behavioral confirmation. Expanding upon previous work on stereotyping and behavioral confirmation (e.g., Snyder, 1981), Skrypnek and Snyder (1982) were particularly interested in determining the degree to which gender-based stereotypes may guide and influence behaviors which seem to confirm them. In a clever study, they randomly assigned women targets, who had been previously classified as masculine, feminine, or non-sex-typed by their scores on the Bem Sex Role Inventory (Bem, 1974, 1977), to conditions in which their male partner (the perceiver) either was given no information about them (no sex label), or believed them to be a man or a woman (male label and female label). The perceiver and target, who were never introduced and who communicated only through activating light switches to indicate their choices, completed a division-of-labor task which featured masculine, feminine, and gender-neutral tasks. The experiment featured two sets of exchanges. The first exchange was one which allowed the perceiver to select his preference first and leave the alternative to be chosen or rejected by his female partner. This exchange measured behavioral confirmation or the degree to which the female target chose or rejected tasks consistent with the male perceiver's gender-based stereotype of her. For example, a male perceiver believed that the person with whom he was working was a male. He had a choice between two tasks (a feminine one or a masculine one) and chose the masculine task. The target was then given the choice of accepting the remaining feminine task or rejecting the decision. Women targets that were labeled male were more likely to reject the feminine task, thereby evidencing behavioral confirmation. The second exchange allowed the target to select her preference first and leave the alternative to be chosen or rejected by her male partner. This exchange measured behavioral This exchange measured behavioral perseveration or the degree to which the female target would continue to select, given the choice, the task consistent with the gender-based stereotype held of her by the perceiver. The results were fascinating, revealing a main effect for label. Targets that were labeled female chose significantly more feminine tasks than targets labeled male or not labeled. Targets that were labeled male chose more masculine tasks than those labeled female or not labeled. These results are particularly intriguing for two reasons. First, perceiver's *beliefs* seemed to guide the interaction and especially the *behavior* of the target. Second, behavioral confirmation occurred not only when the perceiver had greater control over task appropriation (during the first set of exchanges), but also during the second set of exchanges, when the targets often "came to *initiate* behaviors 'appropriate' to the sex to which they had been experimentally assigned" (Skrypnek & Snyder, 1982, p. 288).

As researchers, we were particularly inspired by a footnote in Skrypnek and Snyder's (1982) article, in which the authors justified their use of only male perceivers and female targets by stating that although using both men and women in their roles of perceiver and target would have been more desirable, it was unfeasible, and that "we would have expected the same results, had the roles of male and female participants been reversed" (Skrypnek & Snyder, 1982, p. 281). Because gender is well established as an important status characteristic (Ridgeway, Johnson, & Diekema, 1994; Snodgrass, 1985, 1992; McDonald et al., 2003), with society traditionally ascribing more status to men than to women, and also ascribing more status to "men's work" than to "women's work" (Reskin, 1988), we postulated that men might be less likely to exhibit behavioral confirmation, by choosing stereotypically feminine tasks, when a perceiver believed them to be women, than women would provide behavioral confirmation by choosing stereotypically masculine tasks when a perceiver believed them to be men. In other words, we felt that men would be more likely to self-verify, by resisting behavioral confirmation to gender-discrepant tasks, because these tasks are ascribed less status because they are associated with the socially-devalued role of women (Reskin, 1988). On the other hand, we expected that women, as in Skrypnek and Snyder's (1982) original study, would be more likely to behaviorally confirm the expectations of a perceiver who believed her to be a man, because the stereotypically masculine tasks are associated with the socially-valued role of men.

In the present experiment, we attempted to create a laboratory situation similar in most aspects to that of Skrypnek and Snyder (1982). We recruited men and women for an experiment that was purported to be an examination of how people work together in pairs, and which featured a division-of-labor task. Similarly to Skrypnek and Snyder (1982), we assigned men only to the role of perceiver, but unlike in their study, we assigned both women and men to the role of the target. By manipulating the actual and perceived sex of the target, we created a design which would show how target men would act when they were perceived to be a man or a woman, as well as how women would act when they were perceived to be a man or a woman. Unlike Skrypnek and Snyder (1982), we also chose not to measure gender identity through the use of the Bem Sex Role Inventory (Bem, 1974, 1977), as the key results in their study had been found regardless of the target's gender identity. We hypothesized that, consistent with the findings of Skrypnek and Snyder (1982), women targets who were believed by their perceiver to be men would choose to perform more stereotypically masculine tasks, both when this was the only task left for them by the perceiver and when they could freely choose either task. In other words, these women would engage in behavioral confirmation and perseveration. We also hypothesized, in contrast to the predictions made by Skrypnek and Snyder (1982), that target men believed by their perceivers to be women would attempt to self-verify by resisting selecting stereotypically feminine tasks, both when this task was the only one left for them by the perceiver and when they could freely choose either task.

Method

Participants

The participants were 72 college students from a large, midwestern university, who participated for supplementary course credit or a five-dollar payment.[1] Each of the 36 participants assigned to the perceiver role were men, while 18 women and 18 men participants were assigned to the target role, depending on the experimental condition. Although no other demographic information was collected from the participants, they were recruited from a population which was 85% Caucasian, with an average age of 26 years.

Materials

When recruited, each participant was issued an information sheet that described what was purportedly a division of labor task, in which two students would work together to divide a number of tasks between them. The information sheet also doubled as a sign-up sheet, and asked the participant for their names, telephone numbers, and a brief description of themselves.

The experimental materials consisted of two lists of task-pairs to be divided between the participants during the two phases of the experiment.[2] List A and list B were each created to offer all possible combinations of stereotypically masculine, feminine, and gender-neutral tasks (see Appendix). The presentation of lists A and B was counterbalanced. Small slips of paper (trial-slips) were used for participants to write down their task preference by marking an "X" or a "check" mark next to the task that they would prefer from the following task-pair (e.g., "Wash windows" or "Play with a yo-yo").

1 Because women greatly outnumbered men in the population from which most of the sample was recruited (psychology courses), men from other courses (e.g., business) were recruited. Many of these courses did not allow for supplemental courses credit, so a $5 payment was deemed necessary for recruitment from them.

2 A list of 85 tasks were presented to the college student raters; the students were asked to rate whether the tasks were stereotypically masculine, feminine, or gender-neutral on 7-point scales (1 = most masculine; 7 = most feminine). The 16 tasks rated closest to each end-point, with the lowest standard deviations, were selected for masculine and feminine tasks. The 16 tasks rated closest to the scale's midpoint were selected for gender-neutral tasks. Ratings for each of the 16 feminine, masculine, and neutral tasks ranged from 5.95 – 6.42, 1.29 – 2.26, and 3.32 – 4.66, respectively. Some of the tasks used were drawn directly from those used by Skrypnek and Snyder (1982). No students who were employed as raters participated in the actual experiment.

Procedure

Each potential participant listed his or her name, telephone number, and some brief, self-descriptive information (adjectives that they would use to describe themselves to others; this information was never read by other participants) on the sign-up sheet at the time of recruitment. The experimenters used this information to contact potential participants, and to arrange for a time for their participation. Participant men were randomly assigned to either the perceiver or target role, while women participants were assigned only to the target role. The arrangement of assigning only men to the perceiver condition, while not ideal (as studying dyadic interactions when a woman served as a perceiver could conceivably have altered the outcomes), was selected for two reasons. First, it was not feasible to double the size of the design by creating a sex of perceiver factor. Second, and more importantly, because a major purpose of the study was to conceptually replicate and extend Skrypnek and Snyder's (1982) work, using only men in this role allowed us to remain consistent. Perceivers were members of dyads who were given some general information (first name, a self-description including bogus descriptive adjectives) about their partners, which was used to activate gender-based stereotypes. Targets were members of the same dyads who were provided with no information regarding the gender or attributes of their partner. Participants were assigned to groups such that four experimental conditions were created: 1) the perceiver believed the target to be a man, when the target was in actuality a man (MM); 2) the perceiver believed the target to be a man, when the target was in actuality a woman (MW); 3) the perceiver believed the target to be a woman, when the target was in actuality a man (WM); 4) and the perceiver believed the target to be a woman, when the target was in actuality a woman (WW). Thus, 2 x 2 design was created crossing targets' perceived sex with targets' actual sex.

One undergraduate research assistant met each participant when he or she arrived for the experiment; with very few exceptions, the research assistant was the same sex as the participant (i.e., a male research assistant met a male participant, and a female research assistant met a female participant). The participant assigned to the perceiver role and the participant assigned to the target role arrived at separate meeting areas on different floors of the psychology building, where they completed informed consent forms. Then, they were ushered separately, without having visual access to one another, to adjacent rooms in a social behavior laboratory. Once seated in a room, the participants in each dyad were issued verbal instructions. All participants were informed that the experimenters were conducting a study on how two people work together on a division-of-labor task. They were informed that they were assigned to a "minimal interaction" condition, which would require them and their co-worker to attempt to divide up a series of work without actually verbally interacting with one another. The participants were then presented with the task-pair sheets, and were told that they and their co-worker would attempt to divide up the tasks between them, and that success means, for each pair of tasks, that one person agrees to complete one task, while the other person agrees to complete the other task.

To ensure that the participants chose tasks that they would truly be willing to perform, each participant was informed that "in order to make the negotiating process more personally relevant," each of them would complete, at the end of the experiment, five of the tasks that they had selected for themselves. They were also informed that a photograph of them completing the tasks would also be taken. To substantiate this claim, each participant was presented with three photographs depicting an individual (supposedly from an earlier experimental session) engaged in a stereotypically masculine, feminine, and gender-neutral task.[3]

Differential information about their partners was provided to those participants who had been assigned to the perceiver and target roles. Perceivers were informed that "because we usually know something about those with whom we work", they would be allowed to view the personal profile completed by their co-worker. They were then showed one of two bogus profiles, to activate either a male or female stereotype. In the two conditions in which the target was to be perceived as a man, a bogus participant named John was described. This stimulus person purportedly described himself in a manner that was identical to the male target profile used by Skrypnek and Snyder (1982); he was described as independent, athletic, assertive, masculine, competitive, and ambitious. In the two conditions in which the target was to be perceived as a woman, a bogus participant named Karen was described. Also consistent with the descriptions used by Skrypnek and Snyder (1982), this woman was purportedly described herself as being shy, feminine, soft-spoken, gullible, gentle, and conventional. During the time in which purported target information was being shared with the perceiver, no information about the perceiver was shared with the target.

3 Each participant saw a same sex actor arranging flowers in a vase, fixing a light fixture, and scoring test results.

The method of negotiating the division of labor was identical in many respects to that developed and used by Skrypnek and Snyder (1982) in their earlier experiment. An experimenter informed each participant that there would be two phases of the experiment, each involving the division of 12 task-pairs. The participants were also informed that during each phase, there were to be up to three exchanges of preferences for them and their co-worker to attempt to divide each task pair. On the first exchange of the first phase (Behavioral Confirmation), both members of the dyad indicated their task preference by marking an "X" or "check". mark next to the task they preferred on a trial-slip. This first exchange was simultaneous, in that both perceiver and target made their choices at the same time. This method ensured that each participant could show their preference without this preference being affected by the choice of the co-worker. When each participant completed their choice, the trial-slips were collected by the experimenters, who compared them both in an adjacent lobby. If the participants had selected different tasks, the trial was completed. If the participants had selected the same task, the second exchange was initiated. During this exchange, the perceiver selected one of the tasks first by marking his preference on a trial-slip; this trial-slip was then presented by an experimenter to the target, who could either select the same task as the perceiver, or the unchosen task. If the target chose the task left unchosen by the perceiver, the trial was successfully concluded after exchange two. If the target selected the same task as the perceiver, exchange three was initiated. In this exchange, the trial-slip was then presented by an experimenter to the perceiver, who could either choose the same task or the unchosen task. If the perceiver chose the task left unchosen by the target, the trial was successfully concluded. If the perceiver chose the task chosen by the target, the trial was concluded unsuccessfully.

The method was virtually the same during the second phase (Perseveration), with two noteworthy differences. First, the second phase involved the use of 12 new task-pairs that had not been featured in the first phase. Second, the order of selected choices was reversed on the second and third exchange. That is, although the first exchange continued to feature a simultaneous choice format, during the second phase, the target, rather than the perceiver (as in phase one) made the first selection of a choice when the first exchange failed to produce a successful division of the task pair. If the task chosen by the target during phase two was also chosen by the perceiver during this same exchange, exchange three was initiated. In phase three, the perceiver selected a task, followed by the target. If the target selected the task unchosen by the perceiver, the trial was concluded successfully. If the target chose the task chosen by the perceiver, the trial concluded unsuccessfully.

After the 24 trials were completed, the participants were debriefed as to the actual nature of the study. No photographs of the participants were taken, and the experimenter explained the ruse regarding the pictures as a precaution against participants selecting tasks during the experiment which they would be unwilling to perform in "real life".The participants then were issued a supplemental course slip to provide to their instructor, or a $5 payment, and left the laboratory.

The primary dependent measure in all analyses was the stereotypically masculine or feminine nature of the tasks chosen by the perceiver and target. The gender-stereotyped perception of each task was determined prior to the experiment by presenting a list of tasks to undergraduate college students from two university courses, who rated each task on the degree to which each activity was stereotypically masculine or feminine. The mean of the students' ratings provided a composite stereotyped value for each task, with lower numbers indicating greater stereotyped masculinity and higher numbers indicating greater stereotyped femininity. Consistent with the procedures of Skrypnek and Snyder (1982), the sum of the stereotyped values of the tasks chosen by perceivers and targets was used as a measure of the masculine or feminine behavior of each participant.

Table 1

Mean Stereotyped Femininity of Initial and Final Task Chosen by Target (Phase I)

	Initial Task Choice		Final Task Choice	
	Target Actual Sex		Target Actual Sex	
Target Believed Sex	Female	Male	Female	Male
Female				
M	53.54	45.31	54.24	47.49
SD	7.54	7.95	6.58	10.29
Male				
M	54.96	40.90	53.56	45.60
SD	4.30	5.38	4.74	5.84

Note. N=9 per cell; higher values indicate greater stereotyped femininity

Table 2

Mean Stereotyped Femininity of Initial and Final Task Chosen by Target (Phase II)

	Initial Task Choice		Final Task Choice	
	Target Actual Sex		Target Actual Sex	
Target Believed Sex	Female	Male	Female	Male
Female				
M	54.24	43.28	55.68	45.59
SD	5.94	9.79	5.41	11.27
Male				
M	56.06	40.99	53.59	41.98
SD	5.68	5.80	6.02	6.01

Note. N=9 per cell; higher values indicate greater stereotyped femininity

Target's Behavior

Phase I. The sum of stereotyped scores on tasks chosen by the target were used as a measure of the relative feminine or masculine nature of the participant's choices. Separate 2 x 2 (Actual Sex x Believed Sex) analyses of variance (ANOVAs) were performed on *initial* and *final* task choice scores from Phase I of the experiment to determine if choices made by the target confirmed the male perceiver's beliefs about the target's sex or showed self-verification of the target's sex. Results of this analysis revealed a significant main effect of actual sex for both initial task choices, $F(1, 32) = 26.72$, $p < .001$, $\eta^2=.44$ and final task choices, $F(1, 32) = 9.47$, $p < .01$, $\eta^2=.23$. Regardless of what male perceivers believed the target's sex to be, women targets chose more feminine tasks and men targets chose more masculine tasks in both initial and final interactions (see Table 1).

Phase II. Separate 2 x 2 ANOVAs were also conducted using *initial* and *final* task choice scores from Phase II of the experiment to determine whether behavioral confirmation or self-verification would be manifested when targets were given the opportunity to initiate the final interaction. This analysis again showed a main effect of actual sex for both initial task choices, $F(1, 32) = 30.98$, $p < .001$, $\eta^2 = .49$, and final task choices, $F(1, 32) = 18.52$, $p < .001$, $\eta^2 = .36$. Women and men targets continued to self-verify their sex when given priority in making the final task choice (see Table 2).

Table 3

Mean Stereotyped Femininity of Initial and Final Task Chosen by Perceiver (Phase II)

	Initial Task Choice		Final Task Choice	
	Target Actual Sex		Target Actual Sex	
Target Believed Sex	Female	Male	Female	Male
Female				
M	41.04	42.15	43.60	46.61
SD	6.62	8.24	8.64	9.89
Male				
M	46.05	45.74	44.14	45.41
SD	9.56	6.69	6.46	6.84

Note. N=9 per cell; higher values indicate greater stereotyped femininity

Table 4

Mean Stereotyped Femininity of Initial and Final Task Chosen by Perceiver (Phase II)

	Initial Task Choice		Final Task Choice	
	Target Actual Sex		Target Actual Sex	
Target Believed Sex	Female	Male	Female	Male
Female				
M	42.01	45.37	40.71	49.69
SD	6.36	10.60	6.21	12.23
Male				
M	43.51	47.98	41.15	49.16
SD	7.21	9.28	6.22	8.52

Note. N=9 per cell; higher values indicate greater stereotyped femininity

Perceiver's Behavior

Phase I. Stereotyped scores on tasks chosen by the perceiver were summed and used as a measure of the relative feminine or masculine nature of the participant's choices. Separate 2 x 2 (Actual Sex x Believed Sex) ANOVAs were performed on *initial* and *final* task choice scores from Phase I of the experiment to determine if choices made by the perceiver differed based on the actual or believed sex of the target. No significant main effects or interaction effects were identified for perceivers' initial or final task choices in Phase I. Actual sex or believed sex of the target did not influence the choice of tasks made by men perceivers (see Table 3).

Phase II. A final pair of separate 2 x 2 (Actual Sex x Believed Sex) ANOVAs were performed on *initial* and *final* task choice scores from Phase II of the experiment to determine if choices made by the perceiver differed based on the actual or believed sex of the target. In this phase of the experiment perceivers did not differ in femininity of initial task choices (*ps* > .05). However, with regard to final task choices, perceiver men working with actual women made more masculine choices, while those working with actual males made more feminine choices, $F(1, 32) = 8.67$, $p < .01$, $\eta^2 = .21$. Initial task choices made by perceivers were similar for all conditions, but final task choices during Phase II showed perceivers differentially responding to task choices made by targets of different sexes (see Table 4).

Bargaining Strategy

To determine whether either perceivers or targets were more likely to switch from their original task choice to the alternative (when they initially chose the same task), we calculated the number of times each perceiver and each target switched their choice. These data were entered into four separate 2 x 2 ANOVAs for perceivers and targets in Phase I and Phase II. No main or interaction effects were identified for any of the four analyses (*ps* > .05). The average frequency with which a given participant group chose to switch from their original task choice to the alternative was not affected by targets' actual or believed sex.

Discussion

An examination of our results revealed that our initial hypotheses were only partially confirmed in this study. Consistent with our initial expectations, target men did not provide behavioral confirmation to the perceivers' expectations when the perceiver believed them to be women. Contrary to our expectations, women targets did not provide behavioral confirmation to the perceivers' expectations when the perceiver believed them to be men. Both findings have important implications for the processes of behavioral confirmation and self-verification, and deserve closer scrutiny.

We predicted that, because men are ascribed more status by society than women (McDonald et al., 2003; Snodgrass, 1985, 1992), and because stereotypically masculine tasks are valued more highly than stereotypically feminine tasks (Reskin, 1988), men who were believed by their perceivers to be women would not produce behavioral confirmation by choosing more stereotypically feminine tasks than men who were believed to be men. In other words, men, regardless of perceived sex, would show a tendency to self-verify because choosing a gender-discrepant task would essentially mean accepting a status devaluation. This prediction was confirmed; as seen in Tables 3 and 4, the tasks chosen by target men were not significantly different regardless of perceived sex, during both the first (behavioral confirmation) and second (perseveration) phases of the experiment. In other words, regardless of what sex they were believed to be, target men were relatively uniform in their pattern of responding throughout the study. Not only is this consistent with the predictions in this study, but it is also inconsistent with Skrypnek and Snyder's (1982) stated belief that behavioral confirmation would occur in men targets just as it had in their women targets.

We also predicted that, because women have traditionally been afforded by society less status than men (McDonald et al., 2003; Snodgrass, 1985, 1992), and because stereotypically feminine tasks are less valued than stereotypically masculine tasks (Reskin, 1988), women who were believed by their perceivers to be men would produce behavioral confirmation by choosing more stereotypically masculine tasks than women who were believed to be women. Consistent with our belief that the social status attached to gender would affect behavioral confirmation and self-verification processes, we expected that women who were believed to be men would behave in ways which seemed to confirm this expectation by choosing more masculine, and thus more valued, tasks. Such a finding would also have provided support for the generality of Skrypnek and Snyder's (1982) results. However, this prediction was not confirmed; a main effect for actual sex showed that women, like men, chose tasks that were stereotypically consistent with their actual sex, regardless of perceived sex. This effect was found during both phases of the experiment. In fact, an examination of the means presented in Tables 3 and 4 reveals strong support for self-verification among the women targets; these targets actually chose more stereotypically feminine tasks when they were believed to be men than when they were believed to be women, during both the behavioral confirmation and perseveration phases. Self-verifying behaviors by the women targets were so strong that they induced, during the perseveration phase (Phase II), the perceiver men to select more masculine tasks than they had during the behavioral confirmation phase (Phase I) (see Table 6).

The results in this study are difficult to fully explain using the status hypothesis as we initially described it. Certainly, a reluctance to accept a lower status position (by choosing stereotypically feminine tasks) could explain why target men chose similarly masculine tasks regardless of their perceived sex. A reluctance to perform lower status, stereotypically feminine tasks (Reskin, 1988) could also explain why during the perseveration phase, the target men induced the perceivers to select more feminine tasks. However, the status hypothesis seems unable to adequately describe the behavior of the women targets in either phase. During the behavioral confirmation phase, women targets who were believed to be men did not accept what appears to be a status elevation by selecting stereotypically masculine tasks. During the perseveration phase, the women targets also did not select more of these stereotypically masculine tasks. Therefore, unless we speculate that the women targets had internalized their lower status position, and had no interest in obtaining higher status by choosing stereotypically masculine tasks, these results are difficult to describe using a status explanation.

Alternative Explanations and Limitations

Before a status explanation for when behavioral confirmation and self-verification occur can be completely discounted, an improved procedure for manipulating social status should be employed. We acknowledge that our manipulation of social status through gender may have been a limitation in this study. Even a casual examination of gender-appropriate behavior among adults and children in the contemporary United States reveals that women and girls are generally afforded greater flexibility in their choice of "appropriate" professions, tasks, and activities than are men and boys. That is, whereas women and girls may engage in a wide range of both stereotypically masculine and feminine behaviors before violating norms (e.g., appearing "butch"), men and boys are restricted to a more narrow range of stereotypically masculine behaviors that, if they stray from, they may be branded as "effeminate" or gay. Thus, our manipulation of status through gender, while an empirically supported practice in a number of studies, may not have been the best way to manipulate status in this study. Manipulating status through the use of other empirically supported external status characteristics such as age or education information (McDonald et al., 2003; Ridgeway et al., 1994) may be a more appropriate method to use in future studies of this type.

The results of this study are also not consistent with what is commonly reported in the behavioral confirmation literature. The fundamental commonality of behavioral confirmation studies is that a perceiver's expectations about a target induce the target to act in ways that are consistent with those expectations. Clearly, this pattern of action is not found in the results of the present study. This is particularly interesting given the fact that the present experiment featured procedures which are nearly identical to those employed by Skrypnek and Snyder (1982). The astute researcher must then ask why the results of our replication and extension were inconsistent with Skrypnek and Snyder's (1982) results. Several possible answers exist. First, it is possible that the seemingly minor methodological differences in the two studies led to major differences in participant behavior. For example, instead of using a series of lights to indicate task choice (as did Skrypnek and Snyder (1982)), we used an exchange of paper slips passed from participant to participant by way of the experimenters. The decision to use the paper exchange system was largely pragmatic; our experimental setting did not support a light-switching system, and we believed that carefully passing notes through experimental personnel would achieve the same goals with few problems. However, it is quite possible that our procedure required more time than the procedure originally used by Skrypnek and Snyder (1982), which could have led to fatigue and boredom problems among our participants. Also, it is possible that the increased activity caused by experimenters entering and leaving the experimental setting with each participant task selection disrupted a natural pattern of participant responding. The presence of experimental personnel could also have introduced demand characteristics and experimenter expectancies, although we were careful to brief our experimenters on how to reduce the likelihood of these problems. We also used, in nearly all experimental trials, experimenters of the same sex as the participant with whom they interacted, to reduce problems associated with sex-role expectations. Still, we acknowledge that structural differences in our procedure and laboratory setting, relative to those used by Skrypnek and Snyder (1982), may have led to outcomes inconsistent with theirs.

Another possible explanation for the differences between our results and those of Skrypnek and Snyder (1982) regards potential generational differences in gender-appropriate behavior. It is quite possible that standards of what constitutes gender-appropriate behavior have become more relaxed in the two decades that have past since the original experiment. In light of the fact that the women in the present study selected more stereotypically feminine tasks than those in Skrypnek and Snyder's (1982) experiment, this explanation also seems untenable. Additionally, it is possible that we were unable to replicate Skrypnek and Snyder's (1982) results due to the fact that they measured gender identity and we did not. However, given that they found behavioral confirmation in their target women regardless of their gender identity, this explanation does not seem reasonable. A final conclusion, and one which we feel is justified by the results of this study, is that behavioral confirmation is less robust than earlier believed, and that the generality of this phenomenon is limited at best.

We believe that the results can be better understood in light of the self-verification theory provided by Swann and his colleagues (e.g., Swann, Pelham, & Krull, 1989). According to self-verification theory, people are motivated to act in ways that are consistent with their self-concept, and to resist the influence of others when this influence seems directed to contradict the self-concept. This would seem to explain why women and men both chose to select tasks which were consistent with their self-concept, provided that we hold the reasonable assumption that the participants identified with their sex and were aware of the masculine and feminine nature of the tasks from which they could select.

Support for a self-verification explanation of our results seems particularly strong given that the drive held by our participants to maintain consistency with their self-concept seemed to override the status that was inherently tied to the gender-typed tasks. As noted above, we expected self-verification to be particularly prevalent among men, since male targets would suffer a status devaluation by agreeing to perform less socially-valued feminine tasks. We also expected that women would be more likely to engage in behavioral confirmation because female targets would seemingly receive a status elevation by agreeing to perform more socially-valued masculine tasks. A close examination of the self-verification literature reveals an explanation as to why this expectation was not confirmed: people are driven to self-verify even when consistency that they are verifying is not highly valued by society. As discussed earlier, recent work has challenged the early belief held by self-verification theorists that people will only resist unflattering evaluations; in fact, Swann and his colleagues (e.g., Swann, 1997; Swann, Pelham, & Krull, 1989; Swann, Stein-Seroussi, & Giesler, 1992) as well as others (e.g., Hay, Ashman, van Kraayenoord, & Stewart, 1999) have demonstrated that certain people (such as those suffering from clinical depression or those with a negative academic self-concept) will resist flattering evaluations, and instead seek out negative evaluations that they consider to be more consistent with their self-concept. Although we certainly do not maintain that identifying as a woman is akin to being depressed or having a negative self-concept, we do maintain that identifying as a woman involves identifying with a socially-devalued group. Consistent with this point, and as is predicted by self-verification theory, the women in our study resisted the opportunity to identify with a more valued and higher status masculine role, because it was inconsistent with their self-concept.

This study joins a scant few others (e.g., Swann & Ely, 1984; Swann, Milton, & Polzer, 2000; Testa & Major, 1988) that have evaluated behavioral confirmation and self-verification as opposing processes. Our results seem consistent with these studies as well; as did Swann and Ely (1984), Swann Milton, and Polzer (2000), and Testa and Major (1988), we found that tendencies toward self-verification appear to outweigh pressures toward behavioral confirmation. This, of course, is not to suggest that behavioral confirmation does not occur—it certainly does. As noted earlier, Swann and Ely (1984) found that behavioral confirmation will override even self-verification, provided that the perceiver is highly certain of his or her beliefs, and the target is uncertain of his or her attributes. However, we argue that this is rarely the case. Certainly, in experimental and real-life situations, most people are quite aware of who they are, what they feel, and so forth. In these situations, as in our experimental setting, people will likely think, feel, and act in ways that are consistent with their self-concepts.

Conclusions and Suggestions for Future Research

This study, in the true spirit of scientific exploration, has attempted to establish some boundary conditions for the phenomena of behavioral confirmation and self-verification. Its results seem to strongly suggest that behavioral confirmation is indeed limited, and may not be nearly as robust a process as many scientists might believe. Quite simply, it appears that our desire to act in ways that verify information consistent with our self-concept override the situational social influences which others, through their perceptions of and stereotypes about us, exert. Still, discounting completely the phenomenon of behavioral confirmation would be unwise, and future studies that, like this one, probe the conditions under which our behaviors are controlled to some degree by the expectations of others, would add substantially to the science of human behavior.

References

Andersen, S. M., & Bem, S. L. (1981). Sex typing and androgyny in dyadic interaction: Individual differences in responsiveness to physical attractiveness. *Journal of Personality and Social Psychology, 41,* 74-86.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42,* 155-162.

Bem, S. L. (1977). On the utility of alternative procedures for assessing psychological androgyny. *Journal of Consulting and Clinical Psychology, 45,* 196-205.

Bosson, J. K., & Swann, W. B. Jr. (1999). Self-liking, self-confidence, and the quest for self-verification. *Personality and Social Psychology Bulletin, 25,* (10), 1230-1241.

Eden, D., & Zuk, Y. (1995). Seasickness as a self-fulfilling prophecy: Raising self-efficacy to boost performance at sea. *Journal of Applied Psychology, 1995, 80,* (5), 628-635.

Eden, D. (1992). Leadership and expectations: Pygmalion effects and other self-fulfilling prophecies in organizations. *Leadership Quarterly, 3,* (4), 271-305.

Farina, A., Allen, J. G., & Saul, B. (1968). The role of the stigmatized person in affecting social relationships. *Journal of Personality, 36,* 169-182.

Giesler, R. B., Josephs, R. A., & Swann, W. B., Jr. (1996). Self-verification in clinical depression: The desire for negative evaluation. *Journal of Abnormal Psychology, 105,* (3), 358-368.

Giesler, R. B., & Swann, W. B. Jr. (1999). Striving for confirmation: The role of self- verification in depression. In (Ed.), *The interactional nature of depression: Advances in interpersonal approaches* (pp. 189-217). Washington, D. C.: APA Press.

Hay, I., Ashman, A. F., van Kraayenoord, C. E., Stewart, A. L. (1999). Identification of self- verification in the formation of children's academic self-concept. *Journal of Educational Psychology, 91,* (2), 225-229.

Jussim, L. (1991). Social perception and social reality: A reflection-construction model. *Psychological Review, 98,* 54-73.

Jussim, L., & Eccles, J. (1995). Naturalistic studies of interpersonal expectancies. *Journal of Personality and Social Psychology, 63,* 947-961.

Kray, L. J., Thompson, L., & Galinsky, A. (2001). Battle of the sexes: Gender stereotype confirmation and reactance in negotiations. *Journal of Personality and Social Psychology, 80,* 942-958.

Langer, E. J., & Imber, L. (1980). The role of mindlessness in the perception of deviance. *Journal of Personality and Social Psychology, 39,* 360-367.

Lecky, P. (1945). *Self-consistency: A theory of personality.* New York: Island Press.

Madon, S., Jussim, L., & Eccles, J. (1997). In search of the powerful self-fulfilling prophecy. *Journal of Personality and Social Psychology, 72,* (4), 791-809.

McDonald, T. W., Toussaint, L. L., & Schweiger, J. A. (2003). *The influence of social status on token women leaders' expectations about leading male-dominated groups.* Manuscript revision in progress.

McNulty, S. E., & Swann, W. B. (1994). Identity negotiation in roommate relationships: The self as architect and consequence of social reality. *Journal of Personality and Social Psychology, 67,* 1012-1023.

Merton, R. K. (1948). The self-fulfilling prophecy. *Antioch Review, 8,* 193-210.

Merton, R. K. (1957). *Social theory and social structure.* Glencoe, IL: Free Press.

Reskin, B. (1988). Bringing men back in: Sex differentiation and the devaluation of women's work. *Gender & Society, 2,* 58-81.

Ridgeway, C. L., Johnson, C., & Diekema, D. (1994). External status, legitimacy, and compliance in male and female groups. *Social Forces, 72,* 1051-1077.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom.* New York: Holt.

Skrypnek, B. J., & Snyder, M. (1982). On the self-perpetuating nature of stereotypes about women and men. *Journal of Experimental Social Psychology, 18,* 277-291.

Smith, A. E., Jussim, L., & Eccles, J. (1999). Do self-fulfilling prophecies accumulate, dissipate, or remain stable over time? *Journal of Personality and Social Psychology, 77,* (3), 548-565.

Snodgrass, S. E. (1985). Women's intuition: The effect of subordinate role on interpersonal sensitivity. *Journal of Personality and Social Psychology, 49,* 146-155.

Snodgrass, S. E. (1992). Further effects of role versus gender on interpersonal sensitivity. *Journal of Personality and Social Psychology, 62,* 154-158.

Snyder, M. (1981). On the self-fulfilling nature of social stereotypes. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior* (pp. 277-303). Hillsdale, NJ: Erlbaum.

Snyder, M. (1992). Motivational foundations of behavioral confirmation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 67-114). Orlando, FL: Academic Press.

Snyder, M., & Swann, W. B., Jr. (1978). On the self-perpetuating nature of social stereotypes. *Journal of Experimental Social Psychology, 14,* 148-162.

Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Personality and Social Psychology, 35,* 656-666.

Steele, C. M. (1975). Name-calling and compliance. *Journal of Personality and Social Psychology, 31,* 361-369.

Swann, W. B., Jr. (1997). The trouble with change: Self-verification and allegiance to the self. *Psychological Science, 8,* (3), 177-180.

Swann, W. B., Jr., & Ely, R. J. (1984). A battle of wills: Self-verification versus behavioral confirmation. *Journal of Personality and Social Psychology, 46,* (6), 1287-1302.

Swann, W. B., Jr., Milton, L. P., & Polzer, J. T. (2000). Should we create a niche or fall in line? Identity negotiation and small group effectiveness. *Journal of Personality and Social Psychology, 79,* 238-250.

Swann, W. B., Jr. Pelham, B. W., & Krull, D. S. (1989). Agreeable fancy or disagreeable truth? Reconciling self-enhancement and self-verification. *Journal of Personality and Social Psychology, 57,* (5), 782-791.

Swann, W. B. Jr., Stein-Seroussi, A., & Giesler, R. B. (1992). Why people self-verify. *Journal of Personality and Social Psychology, 62,* (3), 392-401.

Testa, M., & Major, B. (1988). Self-verification and expectancy confirmation in social interaction: Independent or interactive processes? *Representative Research in Social Psychology, 18, (2),* 35-48.

Webster, M., & Driskell, D. G. (1985). Status generalization. In J. Berger & M. Zelditch (Eds.), *Status, rewards, and influence.* San Francisco, CA: Jossey-Bass.

Yoder, J. D., Schleicher, T. S., & McDonald, T. W. (1998). Empowering token women leaders: The importance of organizationally legitimated credibility. *Psychology of Women Quarterly, 22,* 209-222

Appendix

Task-Pairs for Phase I

List A		
1.	(N) Wash Windows	(N) Play with a yo-yo
2.	(M) Drill holes in a board	(M) Fix a light switch
3.	(M) Fix a window screen	(F) Weave a basket
4.	(N) Peel oranges	(N) Jog a mile
5.	(F) Clip coupons	(F) Arrange flowers in a vase
6.	(N) Put up wallpaper	(F) Wind a package of yarn into a ball
7.	(F) Clean jewelry	(M) Sharpen a knife
8.	(F) Prepare a baby bottle by mixing formula with milk	(N) Mix a cocktail
9.	(M) Split a log	(N) Score test results
10.	(M) Nail two boards together	(F) Ice and decorate a birthday cake
11.	(F) Remove a stain	(M) Install a doorknob
12.	(N) Learn to use e-mail	(M) Change a car's oil

Note. M=Masculine task, F=Feminine task, N=Neutral task.

Appendix, continued
Task-Pairs for Phase II

List B		
1.	(N) Proofread a paper	(N) Film with a camcorder
2.	(M) Oil squeaky hinges on a box	(M) Assemble a model car
3.	(N) "Surf" the internet	(M) Attach bait to a fishing hook
4.	(M) Sand wooden blocks	(F) Write "thank-you" notes
5.	(F) Thread a needle	(M) Clean a gun
6.	(F) Bake a pie	(N) Tune an instrument
7.	(M) Change a tire on a bicycle	(N) Paint a chair
8.	(F) Hand wash crystal	(M) Clean spark plugs
9.	(F) Iron a shirt	(F) Polish silverware using a cloth and paste
10.	(N) Balance a checkbook	(N) Change a light bulb
11.	(N) Brush a dog's teeth	(F) Dust furniture
12.	(M) Repair a leaky faucet	(F) Sew a button on a shirt

Note. M=Masculine task, F=Feminine task, N=Neutral task.

Send Manuscript Correspondence to

Theodore W. McDonald
Department of Psychology MS-1715
Boise State University
1910 University Drive
Boise, ID 83725-1715
tmcdonal@boisestate.edu

Author Note. The authors thank David H. Bauer, Heather M. Brown, and Margaret I. Swiatlowski for their help with data collection, and two anonymous reviewers for their careful and thoughtful reviews of an earlier version of this manuscript.

Received: March 6, 2003
Accepted: May 30, 2003
Revised: May 31, 2003