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UMI
MOTIVATIONAL, PERFORMANCE AND AFFECTIVE CONSEQUENCES
OF MASTERY AND PERFORMANCE ACHIEVEMENT GOALS

by

Maayan Davidov

A thesis submitted in conformity with the requirements
for the degree of Master of Arts
Graduate Department of Psychology
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Motivational, Performance and Affective Consequences of Mastery and Performance Achievement Goals

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Abstract

The present study examined the nature and consequences of the three achievement goals depicted in Elliot's tripartite model (Elliot, 1997; Elliot & Harackiewicz, 1996). 145 college students were randomly assigned a performance-approach, performance-avoidance or a mastery goal, regarding a social perception task. Following the task, participants received positive or negative performance feedback. In accordance with predictions, the mastery goal led to more beneficial outcomes than either performance goal, in both feedback conditions. Compared to both performance groups, mastery participants felt less externally controlled as they awaited the task, reported higher enjoyment and interest in the task, and had more optimistic predictions regarding future performance. The two performance goals had mostly similar outcomes, although a few interesting differences were also observed. Higgins's (1996) regulatory focus theory was also examined in this context, but was not supported. Theoretical implications for the tripartite model of goal framing and future research directions are discussed.
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Motivational, Performance and Affective Consequences of Mastery and Performance Achievement Goals

The early achievement motivation theories emphasized the fundamental distinction between approach and avoidance. The desire to approach success (or competence) and the desire to avoid failure (or incompetence) were recognized as two independent motivational orientations, and both these motivations were perceived as important determinants of achievement behavior (Lewin, Dembo, Festinger & Sears, 1944; McClelland, 1951, 1985; Atkinson, 1957).

The approach-avoidance distinction was initially preserved in the more cognitive achievement goal theories that followed (Dweck & Elliott, 1983; Nicholls, 1984), but this distinction was soon abandoned, and another distinction came to be the center of attention: mastery vs. performance goals. Although different achievement theorists utilize different terms to label these two achievement orientations, it has been suggested that the various frameworks are conceptually similar (Ames & Archer, 1987; Ames, 1992). Mastery and performance goals constitute two basic achievement orientations: a mastery goal (also termed learning, task-involvement) is focused on the development of competence and task mastery through self-improvement and learning, whereas a performance goal (or competitive, ability, ego-involvement) is focused on the demonstration of competence relative to others.

Much research has been conducted on the effects of the two achievement orientations on intrinsic motivation. Intrinsic motivation is generally defined in the literature as activities that are performed freely, not because of any demands or constraints but out of the sheer interest and enjoyment the activity provides (Ryan, Koestner & Deci, 1991; Anderson & Rodin, 1989; Elliot & Harackiewicz, 1996). Research on the influence of performance and mastery goals on intrinsic
motivation has produced a complex set of findings. It is generally agreed that mastery goals promote intrinsic motivation by fostering challenge seeking, persistence and task involvement (e.g. Nicholls, 1989; Dweck, 1985). However, there is disagreement with respect to performance goals. Some theorists contend that performance goals (or ego-involvement) are generally detrimental to intrinsic motivation, because they tend to foster conditions that undermine it, such as evaluative pressure, performance anxiety and feelings of being externally controlled (e.g. Anderson & Rodin, 1989; Ryan, Koestner & Deci, 1991). Other theorists, however, maintain that the deleterious effects of performance goals are quite limited, and have demonstrated that in some situations (e.g. when competence cues are not salient), as well as for some people (e.g. people high on need for achievement), performance goals can actually enhance intrinsic motivation (e.g. Sansone, 1989; Harackiewicz, 1989; Harackiewicz & Elliot, 1993).

**The Tripartite Model of Achievement Orientation**

Recently, Elliot and his colleagues (Elliot & Harackiewicz, 1996; Elliot & Church, 1997; Elliot, 1997) have suggested an achievement goal conceptualization that integrates both the "classic" approach-avoidance distinction and the "contemporary" performance-mastery distinction. This framework retains the mastery orientation, which is considered an approach orientation, and partitions the performance orientation into independent approach and avoidance components. Thus, the new framework includes three distinct achievement orientations: a *mastery goal*, focused on the development of competence and task mastery; a *performance-approach goal*, directed towards the demonstration of competence relative to others; and a *performance-avoidance goal*, aimed at avoiding the demonstration of incompetence relative to others. This new framework has the potential to resolve the inconsistent findings regarding
In the first test of this tripartite model, Elliot and Harackiewicz (1996) experimentally manipulated the three orientations, and gave all participants (bogus) positive feedback. The results indicated that mastery and performance-approach goals both equally enhanced intrinsic motivation, whereas the performance-avoidance orientation undermined it. Task involvement was found to be an important mediator of these effects of performance goals on intrinsic motivation. The authors concluded that only performance goals directed at the avoidance of failure and incompetence undermine intrinsic motivation, whereas performance goals aimed at the demonstration of success and competence do not. This conclusion seems consistent with the position taken by these researchers in the past on the issue of the effects of performance goals on intrinsic motivation (e.g. Harackiewicz, 1989; Harackiewicz & Elliot, 1993). As mentioned above, these authors and their colleagues have been continuously maintaining that in some cases, performance goals could have beneficial consequences. Here, they in fact suggest a new criterion for predicting the outcome of performance goals – the distinction between approach and avoidance orientations, with performance-approach depicted as beneficial and performance-avoidance as detrimental to intrinsic motivation.

In my opinion, however, this conclusion seems too sweeping, and may not apply to situations that differ in important ways from the specific experimental context utilized by Elliot & Harackiewicz (1996). More specifically, it seems likely that under different conditions, i.e. conditions that are more representative of situations in the work and academic settings, a performance-approach orientation would actually be deleterious to intrinsic motivation (although perhaps less so then a performance-avoidance goal). One crucial aspect appears to be the self-
relevance of the task, or the importance attributed to it. The experimental activity used by Elliot & Harackiewicz ("Nina-puzzles") and the way in which it was presented to participants (as a game), could have fostered a perception of the task as only minimally important to one’s self. Under these benign conditions participants could have easily discounted the importance of the goal presented to them, and thus any negative consequences of the performance-approach orientation were less likely to be salient.

In addition, Elliot & Harackiewicz used only positive feedback in their manipulation, and thus the differences between the orientations in a negative feedback situation were not examined in their study. Yet, negative feedback can most likely lead to more divergent outcomes of the three orientations compared to the effects of positive feedback. This is based on theory and past research that have suggested that a mastery orientation, but not performance goals, can buffer against the deleterious consequences of negative feedback (e.g. Anderson & Rodin, 1989). Thus, under negative feedback, a mastery goal can be hypothesized to lead to more positive outcomes than a performance-approach goal. A performance-avoidance goal, on the other hand, is likely to lead to even more negative consequences under negative feedback than it was shown to produce in positive feedback (in Elliot & Harackiewicz, 1996), since negative feedback would present an even more stressful context. Elliot and Harackiewicz (1996) were aware of the benign nature of the performance goal context in their experiments, and noted that in other contexts performance-approach and mastery goals may affect intrinsic motivation differentially. The main purpose of the present experiment was to further differentiate the effects of the three achievement orientations proposed by Elliot & Harackiewicz. Thus, the activity utilized was made more self-relevant, and both negative and positive feedback were administered.
In addition to identifying the different outcomes associated with the three achievement orientations, it is of considerable importance to explain why the different orientations promote these distinct outcomes. Some recent work (Elliot & Church, 1997; Elliot, 1997) might shed some light on the nature of the processes underlying the three goals, and the divergent pattern of outcomes they are hypothesized to lead to. In this work, the tripartite model was further developed, and was conceptualized as an individual difference model. A hierarchical aspect was added to the model, by specifying the antecedents and the consequences of the three achievement goals. According to this extended conceptualization, the three achievement goals are determined by two factors: the individual’s competence-relevant motive dispositions, and his/her competence expectancies. More specifically, it is proposed that there are two basic independent motive dispositions – the need for achievement and the need to avoid failure, and these combine together with the person’s high or low competence expectations to directly influence the achievement goal the person will adopt. The achievement goals, in turn, directly influence the person’s achievement-relevant outcomes, i.e. his or her behavior, thoughts and feelings in the achievement situation (e.g. intrinsic motivation, performance on the task, etc.). According to this model, mastery and performance avoidance goals are more ‘pure’ orientations, in that each is determined primarily by one dominant motive disposition. A performance-avoidance goal serves the motivational function of fear of failure, combined with low competence expectancies, whereas a mastery goal serves the motivational function of achievement motivation combined with high competence expectancies. Performance-approach, on the other hand, is a more complex form of regulation, since it can serve both motivational functions. Thus, unlike its earlier depiction by Elliot & Harackiewicz (1996) as grounded in self-regulation according to potential positive outcomes only, the hierarchical model portrays performance-approach goals as
motivated by both positive and negative outcomes (i.e. the desire for success and achievement, as well as the fear of potential failure). In terms of competence expectancies, individuals with performance-approach goals are considered to have high expectations for success. Thus, high competence expectancy fosters adoption of approach achievement goals (mastery or performance-approach, depending on the person's motive dispositions), while low competence expectancy leads to the adoption of a performance-avoidance goal.

Elliot & Church (1997) conducted a correlational study in a natural setting (classroom), and found evidence for the hierarchical model. First, mastery, performance-approach and performance-avoidance goals (measured continuously) were generally found to be correlated in the predicted directions with competence expectancies and the two motive dispositions. Furthermore, the achievement goals predicted students' responses on the two achievement-relevant outcomes measured – intrinsic motivation (measured by self-reports of interest and enjoyment in the class) and performance (determined by the grade on a multiple-choice test). It was found that mastery goals were related to greater intrinsic motivation and were unrelated to graded performance; performance-approach goals facilitated graded performance and were unrelated to intrinsic motivation; and performance avoidance goals were related to both lower intrinsic motivation and lower grades. These results support the tripartite model, as they demonstrate that the three achievement goals differ from each other in predicted ways in their antecedents and consequences.

However, it seems that the three goals could be even further differentiated, particularly with regard to their consequences. First, Elliot & Church examined only two potential outcomes – intrinsic motivation and graded performance. There are many other kinds of achievement-relevant consequences that were not assessed in their study, such as participants' affect and self-
Mastery and Performance Achievement Goals

esteem prior to and following performance feedback (receipt of grade), their continued interest in the course material once the course ended, their interest in related material they were not evaluated on, students' behavior in relevant situations (both in and outside class), and so on. Obtaining a wide range of measures can contribute to a more extensive and complete characterization of the three achievement goals and their consequences. Moreover, the outcomes obtained by Elliot and Church were measured in a limited way, with intrinsic motivation assessed only through self-reports, and performance assessed using one specific kind of criterion (a multiple-choice test). Since many achievement-related consequences are complex, multi-faceted phenomena, the use of more than one measure to assess these outcomes seems desirable. For example, intrinsic motivation is ordinarily assessed using a behavioral as well as a self-report measure (e.g. Harackiewicz & Elliot, 1993; Elliot & Harackiewicz, 1996; Ryan, Koestner & Deci, 1991; Anderson & Rodin, 1989). Similarly, there are many criteria to evaluate performance other than a multiple-choice task (e.g. quality of responses on an open-ended task, quantity of responses, speed of response, etc.). Since different aspects, or types, of performance emphasize different abilities, it seems likely that the performance outcomes of the different achievement goals would depend on how performance is assessed. Measuring the different aspects or manifestations of an outcome can thus lead to a more accurate and complete understanding of the consequences of the three achievement goals. In the present study several kinds of dependent variables were obtained, often using more than one indicator, in an attempt to further characterize and differentiate the three achievement orientations. Examples of some of these measures, that were not obtained in the previous testings of the tripartite model, are: feelings of being externally controlled, affective responses to performance feedback, shifts in the
level of self-esteem, challenge-seeking level, predicted future performance, behavioral inclinations, and others. These measures will be discussed in more detail shortly.

Regulatory-Focus Theory

Another theory in which the approach-avoidance distinction is central, is Higgins’s (1996, 1997) theory of regulatory-focus. Although this is a general theory of self-regulation, not specific to achievement behavior, it seems to be importantly related to Elliot’s tripartite model of achievement goals (which in itself seems extendable to self-regulation beyond the achievement domain). Regulatory-focus theory distinguishes between two types of regulatory focus: a promotion focus, centered on advancement, growth, and accomplishment (nurturance needs), and a prevention focus, centered on protection, safety and responsibility (security needs). According to Higgins (1996, 1997), these two types of self-regulation are acquired through socialization processes, and can also be temporarily induced by situational factors. A promotion focus is concerned with the presence and absence of positive outcomes, i.e. aspirations and accomplishments, whereas a prevention focus is concerned with the absence and presence of negative outcomes, i.e. responsibilities and safety. Furthermore, Higgins’s regulatory-focus theory maps onto his earlier self-discrepancy theory. Self-discrepancy theory (Higgins, 1987) states that people can have two different kinds of self-guides: ideal self-guides, i.e. what they or their significant others would like them ideally to be (hopes and aspiration), and ought self-guides, i.e. what they or others think they ought to be (duties and responsibilities). Thus, ideal self-guides involve a promotion focus, and ought self-guides a prevention focus (Higgins, 1997; Higgins, Shah & Friedman, 1997). According to regulatory-focus theory, the two regulation forms foster different strategic means: the natural strategy for promotion self-regulation is the
approach of matches to desired end-states, whereas for prevention self-regulation the natural strategy is the avoidance of mismatches to desired end-states. Thus, Higgins’s regulatory-focus theory and Elliot’s tripartite model of achievement goals share an interesting theoretical similarity, particularly the distinction between approach (or promotion) and avoidance (or prevention) forms of self-regulation.

Aside from the theoretical resemblance, what seems particularly important is that very similar experimental manipulations have been used to study these two theoretical frameworks. More specifically, Higgins’s manipulations of promotion and prevention regulatory focus (Higgins, Shah & Friedman, 1997; Higgins & Crowe, 1997) are very similar to Elliot and Harackiewicz’s (1996) manipulation of performance-approach and performance-avoidance goals, respectively. Thus, a secondary purpose of the present study was to map Higgins’s regulatory-focus theory onto Elliot’s tripartite achievement goal model. As explained below, this aim was pursued mainly by assessing the emotional consequences of the different orientations/regulation forms. Higgins has claimed and demonstrated that promotion and prevention goals have different emotional consequences (e.g. Higgins, 1996; Higgins, Shah & Friedman, 1997): attaining one’s goal leads to cheerfulness-related emotions when a promotion focus is accessible, but leads to quiescence-related emotions when a prevention focus is salient. Similarly, failure to meet one’s goal leads to dejection-related emotions in a promotion focus, but to agitation-related emotions in a prevention focus. In the present experiment, the emotional responses to positive and negative feedback were assessed for the three achievement goals, and compared to Higgins’s findings.

In my opinion, the tripartite model has at least two advantages relative to regulatory-focus theory, in terms of its capacity to explain different phenomena related to self-regulation. First,
this model includes three, rather than two, distinct forms of self-regulation. More specifically, while the tripartite model portrays two different kinds of approach goals (mastery and performance-approach), regulatory-focus theory makes no such distinction. Thus it seems likely that the tripartite model can account for more situations. It should be noted that although in some cases Higgins presents his theory as including four, rather then two, regulatory forms (all four combinations of promotion/prevention and approach/avoidance; e.g. Higgins, 1996), he seems to consider promotion-approach and prevention-avoidance as the two predominant forms, and has concentrated his theory and research on them (Higgins, 1996, 1997). Second, unlike the tripartite model, Higgins’s theory lacks a clear hierarchical notion. Elliot’s hierarchic conceptualization seems particularly useful, since it can explain complicated situations of self-regulation, which regulatory-focus theory does not seem to explain. For example, in certain cases people appear to be attempting to approach success on a phenotypic level, while the underlying, genotypic motive for their behavior is mainly the avoidance of failure (e.g. people are putting themselves through demanding experiences because they need external validation for their worth). In Elliot’s framework, such a person could be said to hold a performance-approach goal since, as noted earlier, this achievement orientation stems from a combination of fear of failure with need for achievement and high expectations for success. Regulatory-focus theory, however, does not include such notion of ‘approach in order to avoid’, and thus does not seem to account for such situations (at least in its present conceptualization). Thus, the present study attempted to show that the tripartite model has better predictive and explanatory power than Higgins’s regulatory focus theory, i.e. can better explain participants’ emotional responses to success and failure feedback than can regulatory-focus theory. Recall that according to Higgins’s theory and findings (e.g. Higgins, Shah & Friedman, 1997, Study 4), a prevention focus (equivalent to
performance-avoidance) leads predominantly to quiescence-agitation emotions, whereas a promotion focus (equivalent to performance-approach) leads mostly to cheerfulness-dejection emotions. The present study sought to replicate Higgins's finding with regard to performance-avoidance, but in performance-approach a different pattern than that noted by Higgins was expected. The study also attempted to further extend Higgins's framework by adding the mastery orientation. More specifically, it was predicted that Higgins's manipulated promotion focus, which corresponds to Elliot's performance-approach manipulation, would produce moderate responses on both cheerfulness-dejection and quiescence-agitation emotional dimensions (rather than predominantly cheerfulness-dejection emotions). Although this prediction is inconsistent with Higgins's theory and previous findings, it is consistent with the tripartite model, in which performance-approach goals are portrayed as a complex form of self-regulation, grounded in both positive and negative outcomes (hope for success and fear of failure). Furthermore, it was thought that Higgins's finding in the promotion condition (Higgins, Shah & Friedman, 1997, Study 4) was due to the rather self-irrelevant and unimportant task used in his study, which made failure to meet the promotion goal an inconsequential outcome and thus likely decreased the salience of agitation-related emotions. Moreover, his results can also be attributed to the absence of a more 'pure' promotion focus – like a mastery goal – from his manipulations, relative to which his promotion focus could have yielded milder cheerfulness-dejection responses. Contrary to a performance-approach goal, the performance-avoidance and mastery orientations were expected in the present study to produce 'purer' emotional reactions. A performance-avoidance goal, corresponding to Higgins's prevention focus, was predicted to be predominantly related to quiescence-agitation emotions (consistent with Higgins's theory and findings). A mastery goal on the other hand, thought to be a purer form of promotion focus than Higgins's manipulation,
was predicted to be primarily associated with cheerfulness-dejection emotions (consistent with Higgins’s theory, but not tested previously).

The Present Study

In the present study, the three achievement orientations (performance-approach, performance-avoidance and mastery) were induced using an experimental manipulation. The effects of the achievement orientations were then examined using various measures of affect, performance and intrinsic motivation, under both positive and negative feedback conditions. In both performance conditions, participants were presented with a normative standard which they needed to surpass — in order to demonstrate competence (in the performance-approach group), or to avoid demonstrating incompetence (in the performance-avoidance group). For both performance groups, positive feedback indicated the fulfillment of the goal, and negative feedback the failure to meet it. The mastery goal group was not informed of any normative standard, but rather encouraged to learn from the experience and develop a skill. For the mastery group, negative feedback should not necessarily indicate failure to meet the goal, as negative feedback can carry valuable information that one can utilize in order to improve on the task.

Pre-Feedback Effects: The Nature of the Goal Oriented State

The predicted effects can be divided into pre- and post-feedback effects. The pre-feedback effects reflect the nature of the induced goal state, and can thus help to further define the three states. Included here were the nature of the participants’ anticipation as they awaited the task session, whether they felt externally controlled, their level of task involvement, and the nature of their actual performance on an open-ended task. Participants induced to form performance-
avoidance goals (i.e. focused on avoiding the demonstration of incompetence), were predicted to feel nervous and worried as they anticipated working on the task, to feel externally controlled, and to be less task involved and rather distracted while working on the task. In terms of the nature of their performance strategies on an open-ended task, which involved describing how they made some of their decisions when working on the task, they were expected to demonstrate a relatively shallow level of processing. More specifically, they were predicted to produce rather vague and general responses, aimed at confirming their previous answers. The mastery-oriented participants, on the other hand, were expected to approach the task with positive anticipation, feeling eager, challenged and curious rather than threatened or externally controlled. While working on the task, they were predicted to show a high level of task involvement compared to the other groups. With regard to their performance strategies on the open-ended task, they were expected to demonstrate more in-depth processing, as reflected by more specific, complex and flexible responses. Finally, performance-approach oriented participants were expected to fall between these two extremes, and incorporate some of the characteristics of both. They were predicted to approach the task feeling rather externally controlled as well as nervous and worried, but also to feel quite eager and challenged as they awaited the task session. While working on the task, they were predicted to be less task involved than the mastery oriented participants, although not as distracted as participants with a performance-avoidance goal. Finally, on the open-ended task they were expected to produce more material than the other groups, as a means of demonstrating, albeit superficially, that they are competent at the task (their performance-approach goal). However, due to the processes hypothesized to underlie this achievement orientation, the material produced is predicted to be of a similar quality to the
performance-avoidance group – that is, less complex and more vague and confirmatory responses.

Post-Feedback Effects: The Effects of the Goal Oriented State on Responses to Feedback

The post-feedback measures reflect the joint effect of the goal orientation and performance feedback (positive or negative). The measures obtained post-feedback were classified into three groups: (1) Intrinsic motivation indicators: these included behavioral and self-report indicators of intrinsic motivation and a measure of behavioral inclination. (2) Performance-related measures: included here were measures of the participants’ desire to learn more about the task, their self-efficacy as indicated by their predictions regarding future performance, and their challenge-seeking level. And (3) Affective measures: these included measures of the nature and strength of participants’ emotional responses to the feedback, and their level of situational self-esteem.

(1) Intrinsic Motivation:

The performance-avoidance group was expected to show a low level of intrinsic motivation for the task, following both positive and negative feedback. The performance-approach group was expected to show a moderate level of intrinsic motivation following positive feedback, but a low level following negative feedback. Furthermore, it was hypothesized that either performance group may exhibit a pattern of discrepancy between the behavioral and self-report indicators of intrinsic motivation in the negative feedback condition. That is, a pattern of high persistence on the task during a free-choice period combined with low levels of self-reported interest and enjoyment in the task was expected (Anderson & Rodin, 1989). Such a pattern would reflect what Deci and Ryan termed internal control (e.g. Ryan, Koestner & Deci, 1991; Ryan, 1982), that is, persistence in an activity out of internal pressure to reach a certain
outcome. This is in contrast to intrinsic motivation, in which the activity is performed out of interest and enjoyment, not internal pressure. Since for the performance participants, negative feedback indicated they have failed to reach their goal, it was predicted that these groups might demonstrate the above-mentioned pattern of internal control. Finally, mastery-oriented participants were predicted to show a high level of intrinsic motivation under both positive and negative feedback conditions, as reflected by all three intrinsic motivation measures (self-report, behavioral and behavioral inclination). The mastery goal was therefore predicted to lead to greater intrinsic motivation than either performance condition, in both positive and negative feedback. It was also hypothesized to give rise to true intrinsic motivation, as opposed to internal control. Thus, unlike either performance goal, the mastery orientation was predicted to buffer against the detrimental effects of negative feedback on intrinsic motivation.

(2) Performance:

With respect to participants’ predictions regarding their future performance on the task (indicative of their self-efficacy), the performance-avoidance group was predicted to be the most pessimistic. Thus, this group was hypothesized to predict a decrease in their performance-level following positive feedback, and expect an equal or lower level of performance following negative feedback. The performance-approach group was predicted to show greater self-efficacy in positive feedback, i.e. expect to perform similarly in the future, but was also expected to be quite pessimistic following negative feedback, by predicting the same level of performance in the future. The mastery orientation, on the other hand, was once again expected to buffer against a helpless response-pattern following negative feedback. Thus, mastery-oriented participants

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1 It was unclear, however, whether both performance groups would exhibit this pattern, or only one of them, and if so which one (neither theory nor previous findings warranted more specific predictions on this issue).
receiving negative feedback were expected to predict a higher level of performance on a future task session. Following positive feedback, the mastery group was hypothesized to demonstrate high self-efficacy, by predicting a similar level of performance in the future.

The mastery group was also expected to show a more optimal level of challenge seeking than the other two groups. That is, mastery participants were expected to present themselves with a moderate level of challenge, in contrast to performance participants who were predicted to seek either very low challenge (that would insure success) or very high challenge (that would constitute self-handicapping [Jones & Berglas, 1978]). Moderate levels of challenge carry more diagnostic information as well as a greater risk of failure attributable to one's low ability. Hence, by providing oneself with a moderate level of challenge one risks more, but is also more likely to gain, than by presenting oneself with a very high or low levels of challenge.

Finally, in both feedback conditions, the group expected to show the highest level of interest in learning more about the task, i.e. in receiving explanations about the true answers to the task-questions, was the mastery group. The performance-avoidance group was expected to show the least interest in receiving explanations, whereas performance-approach participants were predicted to fall in between these extremes. Performance-approach participants were also expected to show an increased interest in receiving explanations about their correct, as opposed to incorrect, responses compared to the other groups. It was thought that performance-approach participants would especially seek this kind of information because it would act to confirm their competence, thereby serving their goal. Explanations about incorrect answers cannot provide this group with the type of validation they seek, and hence this group was predicted to request less of them compared to the other groups.
(3) Affect:

Performance-avoidance oriented participants were expected to show greater feedback-consistent emotional change on the quiescence-agitation emotional dimension (relative to the cheerfulness-dejection dimension). Thus, they were expected to feel very relieved and relaxed as a result of meeting their goal (more so than happy and satisfied), and extremely agitated and uneasy following a failure to meet their goal (more so than disappointed and dejected). Mastery oriented participants, on the other hand, were expected to show the opposite pattern, i.e. predominantly feedback-consistent emotional change on the cheerfulness-dejection emotional dimension. They were expected to feel mainly happy and satisfied following positive feedback (rather than relieved or relaxed, as they were under no pressure previously), and were predicted to feel somewhat disappointed and dejected following negative feedback (but not worried and agitated). Finally, performance-approach participants were expected to show a moderate level of feedback-consistent emotional change on both the quiescence-agitation and cheerfulness-dejection emotional dimensions. Thus, they were expected to feel both happy and relieved following positive feedback, and moderately dejected as well as agitated following negative feedback.

In terms of situational self-esteem, the two performance groups were expected to demonstrate greater fluctuations in self-esteem as a function of feedback, i.e. to demonstrate high levels of self-esteem following positive feedback (particularly the performance-approach group) and low self-esteem levels following negative feedback (particularly the performance-avoidance group). The mastery-oriented participants, on the other hand, were predicted to be less affected by feedback. Though it was thought that their situational self-esteem may increase somewhat as
a result of positive feedback, their mastery-oriented state was predicted to buffer against a drop in self-esteem following negative feedback.

**A Neutral Goal Control Group**

The experiment also included a control group, for which no particular orientation towards the task was induced. The main reason for the inclusion of this condition was to examine whether the responses exhibited and reported by the control participants could be predicted from the individual differences reported by them on some relevant personality dimensions. The main individual difference measures that were obtained as predictors were participants' ratings of the three achievement goals on a self-report measure developed by Elliot (Elliot & Church, 1997). Other personality dimensions, such as measures of self-esteem, need for achievement and narcissism, were also obtained. Since this part of the study was very exploratory in nature, no specific hypotheses concerning it will be presented.

**Method**

**Overview**

Participants were presented with a social perception task, the object of which was to examine photographs of couples and determine the nature of their relationships. Subsequently, participants read one of four randomly assigned written descriptions of the purpose of the study and their goal for the task session. These written descriptions were designed to influence participants' achievement orientation towards the task, i.e. promote the adoption of a performance-approach goal, performance-avoidance goal, mastery goal, or no specific goal (control). Participants then completed the task set, and were given feedback on their performance. Half of the participants were randomly assigned positive feedback, and the other
half negative feedback. Process measures tapping affect, thoughts and goals were obtained prior to feedback. An open-ended task was also completed before feedback to enable examination of participants' performance strategies. Three types of outcome measures – intrinsic motivation indicators, performance-related measures and affective measures – were obtained following feedback. A behavioral indicator of intrinsic motivation was obtained during a free-choice period.

The basic design was a 4 (achievement goal: performance-approach, performance-avoidance, mastery, neutral) x 2 (feedback: positive, negative) factorial.²

Participants

Participants were 193 undergraduates enrolled in introductory psychology courses at the University of Toronto (129 females and 64 males). Of these, 145 participants (97 females and 48 males) were in one of the three experimental goal conditions (performance-approach, performance-avoidance, mastery) and 48 participants (32 females and 16 males) were in the control group. Students were recruited by a sign-up method; most of them (over 80%) participated in the experiment as a means of receiving a partial course credit, and the rest received cash payment for their participation. Participants were randomly assigned to the eight conditions, yet equal proportions of females to males in all the cells were insured.

² However, since the neutral achievement goal was included in the design for exploratory purposes only, and no hypotheses were made regarding this condition, the analyses reported in the Results section were performed on the three experimental groups only (performance-approach, performance-avoidance and mastery). Thus, for the sake of the analysis, the design was a 3 (achievement goal) x 2 (feedback) factorial.
Procedure and Materials

Two participants were scheduled simultaneously for a study on social perception, and one of four female experimenters ran the experimental session. Upon arrival at the experimental laboratory, each participant was shown to his or her room, and instructed how to use the headphones and the signal light to communicate with the experimenter. The participants were informed that although both of them would be run simultaneously, this was done only to save time and resources, and there would be no interaction between them during the experiment. Once the participants were settled, they completed a mood baseline questionnaire. In an effort to decrease demand characteristics and promote honest responses, participants were told that since people’s mood can affect the results of the research, their mood and feelings would be assessed several times during the experiment, so that any influences of mood could be statistically corrected for later. These mood measures were printed in a different font than the other questionnaires, and on a colored (instead of white) paper, to separate them from the other measures.

General cover story. All participants were told that the researchers study interpersonal relationships and social interaction, and that the purpose of the study was to evaluate a social perception task that had been developed previously.

The social perception task. The task was modeled after a task designed by Sternberg (1986). It involved examining photographs of couples, and deciding whether each couple was ‘Genuine’ (really a romantic couple) or ‘Posed’ (not really a couple). Participants indicated their

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3 This questionnaire included the following sub-scales: Feeling Externally Controlled, Agitation, Quiescence, Dejection, Cheerfulness, High Self-esteem and Low Self-esteem. For more information, please refer to the description of the Affective Measures (pp. 27-29).
answers on an answer-sheet, and expected to be given the correct answers at a later stage. This activity was chosen for the present study for two reasons. First, a previous study conducted in our lab indicated that university undergraduates generally tended to find the activity enjoyable and desire to perform competently at it. Second, this task could easily be made self-relevant, due to its pertinence to important aspects of life (social interaction, interpersonal relationships, etc.).

The task was presented as a “type of puzzle” in which one tries to pick up the non-verbal cues that people emit when they are interacting with others. The participants were told that very often these non-verbal cues are better indications of people’s true feelings than the verbal messages that people send. At this point, participants were given two practice photographs to respond to, in order to familiarize them with the task. The experimenter told each participant that he or she answered the first photo correctly and the second photo incorrectly. Subsequently, participants completed a short questionnaire assessing their initial level of interest and enjoyment in the task (Pre-Enjoy). Previous studies have found a significant main effect of Pre-Enjoy, indicating that people who tend to report greater liking of the activity prior to manipulation also tend to report liking it more after the manipulation, at the end of the experimental session (e.g. Elliot & Harackiewitz, 1996, Experiment 2). Thus, assessment of Pre-Enjoy enabled me to covary out this influence. Participants also responded to a more general item, designed to identify those participants who did not consider social perception to be an important skill (“I think social perception is an important skill”, strongly disagree = 1, strongly agree = 7). It was

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4 The true nature of the couples, however, was in fact not known to us in most cases, as this information was usually not obtained when the photographs were taken.

5 The items measuring Pre-Enjoy were conceptually similar to the items in the post-test measure of enjoyment (Enjoy). The exact wording of items was slightly different, since the Pre-Enjoy items were adapted to reflect the early time of administration.
thought that it would be necessary to exclude from the analysis participants whose response on this item indicated very low interest in social perception (in case there were any).

**Achievement goal manipulation.** At this point, the experimenter told the participants that she wanted to explain to them the purpose of the study, and their goal for the upcoming task session, in more detail. Thus, each participant received one of four randomly assigned written descriptions of the 'purpose of the study'. These descriptions constituted the manipulation of the achievement goal orientation. The experimenter was blind to the type of description received by each participant (the description was handed to the participant inside a closed file-folder).

Participants in both *performance* conditions read the following:

The purpose of this study is to collect data on the social perception task by comparing U of T students to one another in their performance on the task. In our previous research we have found that students tend to vary in their performance, and we are interested in investigating the pattern of this variation.

In the *performance-approach* condition, the description continued as follows:

Your goal for today’s session is to demonstrate that you have good social perception skills. For instance, if you score higher than a majority of U of T students, that is, if you get a lot of answers right (10 or more correct), you will demonstrate that you have high social perception ability. On the other hand, if you don’t score higher than a majority of students, i.e. you don’t get a lot of correct answers, then you won’t demonstrate high social perception ability.

Participants in the *performance-avoidance* condition read the following ending:

Your goal for today’s session is to demonstrate that you do not have poor social perception skills. For instance, if you score lower than a majority of U of T students, that is, if you get a lot of answers wrong (more than 5 wrong), you will demonstrate that you have poor social perception ability. On the other hand, if you don’t score lower than a majority of students, i.e. you don’t get a lot of wrong answers, then you won’t demonstrate poor social perception ability.

Participants in the *mastery* condition read the following:

The purpose of this study is to collect data on U of T students’ reactions to the social perception task, in order to develop and improve it. In our previous research we have
found that students tend to vary in their reactions to the task, and we are interested in investigating the pattern of this variation.

Today’s session can be an interesting learning experience for you, as it will give you an opportunity to learn more about social perception. Thus, your goal for today’s session is to try to learn new things about social perception, and to develop your own skills in this domain.

Participants in the neutral (control) condition read the following:

The purpose of this study is to collect data on students’ reactions to the social perception task, in order to develop and improve it. In our previous research we have found that students tend to vary in their reactions, and we are interested in investigating the pattern of this variation.

Your goal for today’s session is to engage in the task, and then to answer various questions about your impressions and reactions to it.

These goal framings were closely related to the manipulations used in other relevant studies, most notably in Elliot and Harackiewitz (1996, Experiment 2) and in Higgins, Shah and Friedman (1997, Study 4). After reading the description, participants were asked to restate in their own words their goal for the upcoming task session (and were allowed to take another look at the written description in order to answer this question). Participants were told that their answer was required in order to make sure that the information they read was clearly given. The actual purpose of this procedure was to enhance the salience of the goal, and increase the likelihood that participants would remember and adopt it.

Following receipt of the manipulation, participants completed a short mood measure assessing their affect as they anticipated the task session (this measure included three scales: Feeling Externally Controlled, Positive Anticipation and Negative Anticipation). Then, participants were given the task materials, and completed the task-set (15 photographs). After completion of the task, participants filled out a questionnaire that included process measures tapping thoughts and goals: Task Involvement, Thoughts about Performance, and Competence Valuation. An additional item included in this questionnaire was designed to assess the perceived
difficulty of the task, which was assumed to indicate the participant’s self-efficacy (“While working on the social perception task, I thought about how difficult it is to figure out whether the couples are genuine or posed”, strongly disagree = 1, strongly agree = 7).

Subsequently, participants completed an open-ended task, which was used to assess the nature of their performance strategies. In this task, participants were required to describe how they made their decision about two of the photos. Participants were instructed to write down in point form “the things about the photographs that you considered when you made your decision”. They were given two minutes for each photo to complete this task. Upon completion of this activity, the participants were given feedback about their performance.

Performance feedback. The performance feedback included the participant’s raw score, and a verbal comment from the experimenter. Participants were randomly assigned to one of two feedback conditions – positive or negative feedback. The experimenter learned the participant’s feedback condition just prior to feedback administration (the feedback to be given was written on a note inside an envelope, which was opened right before the administration of the feedback). This step was taken because it was thought that prior knowledge of the feedback condition might bias the experimenter’s interaction with the participants before feedback. Participants were given back their answer-sheet from the task session, on which the experimenter had marked the “correct” and “incorrect” answers as well as the participant’s raw score (the number of correct and incorrect answers). The answer-sheets were marked according to two fixed schemes, so that participants in each feedback condition received the exact same score and same correct and incorrect answers. Participants in the positive feedback condition received a raw score of 12 correct and 3 incorrect answers. This score was above the norm set for both performance conditions, i.e. more than 10 correct answers for performance-approach, and less than 5 incorrect
answers for performance-avoidance. In addition, the experimenter verbally commented on the participant’s score, saying, "That’s actually a very good score". Participants in the negative feedback condition received a raw score of 8 correct and 7 incorrect answers, which was below the norm set for both performance conditions. In addition, the experimenter verbally commented on the participant’s score, saying, "That’s actually not such a good score".

Upon receipt of feedback, participants completed one performance-related outcome measure (interest in receiving explanations about the photos), and a mood questionnaire assessing affective outcome measures (Agitation, Quiescence, Dejection, Cheerfulness, High Self-esteem and Low Self-esteem).

Free-choice period. After completion of the questionnaire, each of the participants was told that the other participant had to go to the washroom, and therefore he or she would have to wait a few minutes until the other participant came back. The experimenter offered the participant some magazines and newspapers to read in the meantime, as well as some games (supposedly used in other experiments) that he or she could try out – a game version of the social perception task, and some embedded-figure puzzles (“Nina-puzzles”). Participant were presented with all the options, and told they could do whatever they wanted.

The task format used for the free-choice period was a slightly modified version of the original task. In this version, the participant could uncover the correct answer for each photograph, by using a special marker to highlight the area beneath the photo. This version was chosen for the free-choice period because it enabled the participant to receive veridical information without the experimenter’s involvement. Moreover, this version enabled a simple and non-invasive (in terms of participants’ privacy) quantification of the amount of free-play with the task, while being essentially similar to the original task. At the end of the experiment,
the amount of free-play with the social perception task was documented by counting the number of sheets marked by the participant. This measure served as the behavioral indicator of intrinsic motivation.

After four minutes, participants were told that the experiment would now resume, and completed a questionnaire assessing various outcome measures: two intrinsic motivation indicators – interest and enjoyment in the task (Enjoy), and willingness to participate in a follow-up study (Follow-up), and a performance-related outcome measure – predictions regarding future performance. In addition, participants responded to an item assessing Perceived Competence (“How well do you feel you did on the social perception task?” Not at all = 1, Very much so = 7).

**Challenge measure.** At this point, the experimenter told participants that there was still time to do one more short task-set, and that on this set, they could choose the level of difficulty of the photographs that they wanted to do. Participants were told that they could choose between levels 1 (the easiest) and 9 (the most difficult). They indicated their preferred level, as well as the level of difficulty they thought the previous task-set had, on a numeric scale.

**Manipulation checks.** At this point, participants completed a suspicion check followed by manipulation checks, while the experimenter supposedly prepared the materials for the last task set. In order to check the manipulation of the goal orientation, participants were asked to indicate which goal, out of four goals listed, was the one that they read earlier in the description of the purpose of the study. The goals were worded similarly to the way they appeared in the written descriptions. Also, participants were asked to indicate whether they were given any numeric goal that they should try to achieve (a certain number of correct or incorrect answers they should try to reach), and if so – what goal. In order to check the feedback manipulation, participants were

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6 For the exact wording of the manipulation checks, refer to Appendix E.
asked to indicate their score on the task, how satisfied they were with that score, and what was the lowest score they would have been satisfied with. They were also asked to indicate whether they reached the numeric goal presented to them (if there was any). Upon completion of the manipulation checks, participants were told that the experiment was over, and that there would actually not be another task session.

Individual difference measure. After the experimental session was completed, but before debriefing, the participants were asked to complete a final one-page questionnaire, which was presented as related to another study, conducted by other researchers. Participants were told that this other study was investigating U of T students' attitudes towards their psychology courses. This questionnaire was in fact the Achievement Goal Questionnaire (Elliot & Church, 1997).

At this point participants were thoroughly debriefed, especially regarding the false negative feedback, and other aspects of the experiment involving deception. The experimenter made every effort to eliminate any possible negative feelings that the feedback, or other aspects of the experiment, might have caused. In addition, participants were queried about their activities during the free-choice period. Following debriefing, the students were thanked for their participation, and given their experimental credit (or cash payment).

Measures

Affective Measures. Three different mood questionnaires were completed during the experiment (at baseline, following manipulation of achievement goal, and following feedback). Each mood questionnaire included a list of adjectives, which consisted of several sub-scales (with 4-6 adjectives per sub-scale). For each adjective, participants were asked to “circle the number that best describes HOW YOU FEEL RIGHT NOW”. The scale was a 9-point Likert scale that
ranged from *Not at all* (1) to *Extremely so* (9), with the midpoint (5) labeled *Somewhat*. Each of the three mood questionnaires included a different composition of sub-scales (see below), according to the measures that needed to be collected at each point in the experiment. Overall, the following nine mood sub-scales were included in the experiment (for the full scales, refer to Appendix A): (1) *Feeling Externally Controlled* (e.g. pressured, forced; Cronbach’s α=.81). This scale was based on a measure that was developed for a previous study conducted in our lab. (2) *Positive Anticipation* (e.g. eager, challenged; Cronbach’s α=.89). (3) *Negative Anticipation* (e.g. worried, nervous; Cronbach’s α=.84). Scales 2-3 were developed for the present study, using some items from Elliot & Harackiewicz (1996). (4) *Agitation* (e.g. agitated, uneasy; Cronbach’s α=.85). (5) *Quiescence* (e.g. calm, relaxed; Cronbach’s α=.83). (6) *Dejection* (e.g. sad, disappointed; Cronbach’s α=.88). (7) *Cheerfulness* (e.g. happy, satisfied; Cronbach’s α=.90). Items for scales 4-7 were taken from Higgins, Shah & Friedman (1997) and other items were added as well. (8) *High Self-esteem* (e.g. competent, confident; Cronbach’s α=.91). (9) *Low Self-esteem* (e.g. inadequate, insecure; Cronbach’s α=.90). The items for scales 8-9 were taken from McFarland & Ross (1982).

The mood baseline questionnaire assessed participants’ base level on seven sub-scales: Feeling Externally Controlled, Agitation, Quiescence, Cheerfulness, Dejection, High Self-esteem and Low Self-esteem. These scores were obtained in order to serve as covariates in the analysis.

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7 The Agitation scale (scale 4) was close in nature to the Negative Anticipation scale (scale 3), although the Agitation scale included more items that reflected nervousness rather than worry, and the opposite was true for the Negative Anticipation scale. The main difference between the two scales, however, was the time of completion. The Negative Anticipation scale was administered while participants prepared for the task session, whereas the Agitation scale was completed after the administration of feedback.
of the relevant mood measures. The mood questionnaire completed following manipulation (immediately before the task session) collected the affective process measures. This questionnaire included the following three mood sub-scales: Feeling Externally Controlled, Positive Anticipation and Negative Anticipation. Finally, the mood questionnaire completed following feedback collected the affective outcome measures. It included the following six sub-scales: Agitation, Quiescence, Cheerfulness, Dejection, High Self-esteem and Low Self-esteem.

**Process measures tapping thoughts and goals.** *Task Involvement index:* this measure began with the following stem: “While working on the social perception task, I…”, and participants were asked to rate the completions provided. The responses were indicated on a 7-point scale, ranging from *strongly disagree* (1) to *strongly agree* (7). Since task involvement is a construct that incorporates both absorption in the activity and a lack of distraction from it (Elliot & Harackiewicz, 1996), the Task Involvement index included both absorption items (e.g. “…was totally absorbed in the task”, “…lost track of time”) and distraction items (e.g. “…thought about things unrelated to the task”, “…had trouble focusing my attention on the task”). Overall, the Task Involvement index included six items, with four absorption and two distraction items (Cronbach’s α=.71; for the full scale, refer to Appendix B). Some of the items were taken from Task Involvement indexes used in previous studies (Harackiewicz & Elliot, 1993; Elliot & Harackiewitz, 1996), and some new items were added as well. *Thoughts about Performance:* three items tapping thoughts and concerns about performance/competence were rated together with the task involvement items (Cronbach’s α=.68.; e.g. “…thought about whether I was doing well or poorly”). Some of the items were taken from previous studies (e.g. Harackiewitz &

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8 Ideally, all the nine mood sub-scales should have been included in the mood baseline questionnaire. However, due to time constraints and concern for taxing participants’ concentration, two of the sub-scales were not included in this questionnaire (Positive Anticipation and Negative Anticipation).
Elliot, 1993) and some new items were added as well. Competence Valuation items: this measure included three items, representing different meanings of 'competence'. One item (taken from Elliot & Harackiewitz, 1996) tapped into the performance notion of competence: “How important to you is your performance on the social perception task?” (1 = not at all, 7 = very much). In the second item, competence was indicated by learning (the mastery notion of competence): “How important is it to you to learn new things from your experience with the task?” (1 = not at all, 7 = very much). And, the third item focused on the need to avoid demonstrating incompetence: “How concerned are you about doing poorly on the social perception task?” (1 = not at all, 7 = very much).

Measure of performance strategies. A measure of participants' performance strategies was obtained by analyzing participants' responses to an open-ended task. In this task, participants were asked to describe how they made their decisions about two of the photos in the task-set. More specifically, they were asked to write down in point form “the things about the photo that you considered when you made your decision”. These responses were coded for the quantity of ideas/cues listed, in two ways: (1) the number of ideas according to the participant's own breakdown into points; and (2) the number of ideas expressed altogether in the answer (regardless of the participants' own breakdown into points). The responses were also coded for the quality and complexity of the ideas in two ways: (1) the proportion of specific vs. general (or vague) ideas expressed; and (2) the mentioning of 'counter-cues', i.e. cues supporting the decision opposite to the one made by the participant. It was thought that a higher proportion of specific ideas vs. ideas of general or vague nature indicates greater complexity and a deeper level

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9 For the complete scale refer to Appendix B.
10 Out of the total number of ideas listed (according to the participant's own breakdown into points).
of processing. Similarly, the inclusions of ‘counter-cues’ was thought to indicate a more complex decision process, in which the cues supporting each decision were weighed against each other, as opposed to listing only the cues supporting one’s previous answer (a confirmatory response). A single judge, unaware of the research hypotheses coded all responses. A second judge coded a randomly selected sample consisting of 20% of the answers.

Intrinsic motivation outcome measures. Free-choice persistence (Free-Play): was measured by the number of social perception photographs for which the participant has verified the answer during the free choice period (i.e. number of sheets marked). This measure served as the behavioral indicator of intrinsic motivation. Interest and enjoyment (Enjoy): This measured served as the self-report indicator of intrinsic motivation. Participants were asked to summarize their overall reactions to the social perception task by indicating how much they agreed with each of seven statements. Four statements were phrased positively (e.g. “I found the task very interesting”, “It was fun to examine the photographs”), and three were phrased negatively (e.g. “I think the task is boring”, “I didn’t like the task at all”). The reliability of this measure was high, with Cronbach’s α=.90. Some of the items in this measure were used in previous studies on achievement goals and intrinsic motivation (e.g. Harackiewitz & Elliot, 1993; Elliot & Harackiewitz, 1996), and some new items were added as well. Participants indicated their responses on 7-point scales ranging from strongly disagree (1) to strongly agree (7).

Willingness to participate in a follow-up study (Follow-up): this self-report measure of

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11 The photos selected for this task were ambiguous, and thus included cues for both 'genuine' and 'posed' responses.
12 Unfortunately, at the time this thesis was submitted the coding of the open-ended responses was not yet completed. Hence, the effects pertaining to participants’ performance strategies could not be analyzed at that time, and are thus not included in the Results section. Readers interested in these effects can contact Maayan Davidov to receive an Addendum describing these effects.
13 For the full scale, refer to Appendix C.
behavioral inclination served as an additional indicator of intrinsic motivation. Participants were informed that the researchers were planning a follow-up study on the task in the near future. Two items were included in this measure. The first item asked the participants whether they agreed to be contacted for this follow-up study (a yes/no question). In the second item participants were asked, "If we call you, how likely is it that you'll agree to participate in the follow-up study?" (not at all likely = 1, very likely = 7).

**Performance-related outcome measures.** *Interest in explanations about the photos:* participants' motivation for receiving explanations regarding the non-verbal cues contained in the photographs was assessed using one item. This item informed participants that they would be able to look at explanations for some of the photos at the end of the session. However, it was said that because of time limitations, each participant would be able to look at no more than 5 photo explanations. Participants were then asked to indicate if they were interested in receiving explanations, and if so – to which photographs (no more than 5). Participants' answers were coded for the number of photo explanations requested, and for the proportion of explanations for correct vs. incorrect answers the participant requested. *Predicted future performance:* this measure provided an indication of the participant’s self-efficacy and anticipated competence at the specific task. It could also shed some light on the nature of the participants' attributions (i.e. whether they made ability attributions for their success/failure). The measure included two items. In the first item, participants were asked to indicate how many correct answers (out of 15 photographs) they think they would get on a future task-set (Predicted Score). In the second item, participants were asked to predict how they would rank relative to other undergraduates on a future task-set (Predicted Percentile). Responses were indicated on an 11-point percentile scale, ranging from Lower 5% to Upper 5% (for the full items, refer to Appendix D).
Challenge seeking level: in this measure, participants were asked to (1) indicate what they thought to be the level of difficulty of the previous task-set, and (2) choose the level of difficulty of the set they wanted to work on in a subsequent task session. They indicated their responses on 9-point scales, ranging from very easy (1) to very difficult (9), with the midpoint (5) labeled moderate.

Individual difference measures. The main scales used were the Achievement Goal Questionnaire (Elliot & Church, 1997), the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), Rosenberg’s Self-esteem scale (Rosenberg, 1965), and the Achievement Orientation sub-scale of Jackson’s (1974) Personality Research Form. These scales, with the exception of the Achievement Goal Questionnaire, were administered in a pre-testing procedure. The Achievement Goal Questionnaire was administered at the end of the experiment, because it was not possible to include this scale in the pre-testing procedure attended by most of the participants. Since this aspect of the study was very exploratory in nature, these scales will not be described any further.
Results

Overview of Analysis

All the analyses reported in this section were performed on the three experimental groups (performance-approach, performance-avoidance and mastery), excluding the control group.  

Unless otherwise noted, all pre-feedback dependent measures were tested using a one-way analysis of variance, with achievement goal as the independent variable. The post-feedback dependent measures were tested using a 3 (achievement goal condition) x 2 (positive–negative feedback) analysis of variance. Scores on multi-item measures were computed by averaging the items comprising the scale (in case of missing data on multi-item scales, averages were computed without the missing items). Mood baseline scores were used as covariates in the analyses involving the relevant mood measures, and Pre-Enjoy was used as a covariate in the analysis of Enjoyment. In order to test the specific predictions made, the achievement goal effect was partitioned into 2 planned orthogonal contrasts: the performance-mastery contrast compared both performance conditions to the mastery group (each performance condition +1, mastery condition -2), and the approach-avoidance contrast compared the two performance conditions to

14 The control group was included in the experiment for exploratory purposes only, and no predictions regarding this group were made. Therefore, this group was not included in the analyses reported in this section. The data generated by the control group were not yet analyzed at the time this thesis was submitted. Readers interested in this exploratory examination can contact Maayan Davidov.

15 Gender was not included as an independent factor in the final analyses for several reasons. First, the purpose of this study did not include addressing the issue of gender differences, and hence no specific predictions regarding gender were made. Second, as a result of the previous point, the study was not designed in a way that would enable a powerful examination of gender effects (e.g. only a third of the participants were males, the task selected was not tested to be of equal importance to both genders, etc.). Third, in a set of preliminary analyses performed on all the dependent variables, gender was included as an additional independent variable. Though there were a handful of gender interactions on secondary variables (e.g. gender by goal interactions on Thoughts about Performance and Competence Valuation item # 3), none of the main measures, such as Enjoyment, Predicted future Performance, and Free-play, were affected by the inclusion of gender in the analysis. Thus, gender was not included in the final analyses reported in this section. Interestingly, on those secondary variables that did show gender interactions, men usually exhibited a pattern consistent with prediction, whereas women showed a different pattern. Readers interested in more information regarding this issue can contact Maayan Davidov.
one another (performance-approach +1, performance-avoidance −1, mastery 0). Whenever the approach-avoidance contrast yielded a significant result, two additional non-orthogonal contrasts comparing each of the performance conditions to the mastery condition (approach-mastery, avoidance-mastery) were also conducted.

**Manipulation and Suspicion Checks**

**The achievement goal manipulation.** The main item used to assess the goal manipulation asked participants to recognize the one goal, out of possible four, which was presented to them earlier in the experiment (see Appendix E, item 4). 121 out of 145 participants (83.4%) correctly recognized the goal that was presented to them. Two judges coded the severity of the manipulation check problems of each of the 24 participants who answered the recognition item incorrectly. The judges examined the participants' responses to the recognition item and to the three remaining manipulation check items, as well as the participants' open-ended restatement of the goal presented to them immediately after reading it. Agreement was reached regarding 11 participants who should be excluded from the analysis due to a high likelihood that they failed to pay attention to or understand the goal manipulation. The excluded participants answered all or most of the other items incorrectly. The remaining 13 participants who responded incorrectly to the recognition item (but answered all or most of the other items correctly) were included in all the analyses.

**The feedback manipulation.** 139 participants (96%) correctly reported their score (number of correct answers) at the end of the experiment. The incorrect answers on this item were only

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16 A yes/no question about being given a numeric goal, an item asking to recall the exact numeric goal given, and a yes/no question asking whether the numeric goal was reached (see Appendix E, items 5, 6, and 7).
17 For the wording of the question, see item 1 in Appendix E.
off by one point, and always in the direction of feedback (in positive feedback — a point up, in negative — a point down). Furthermore, the Anova on the item assessing the participants' satisfaction with their score revealed a highly significant effect for feedback, \(F(1,125)=294.64, p<.0001\). As expected, participants who received positive feedback reported being much more satisfied with their score than those receiving negative feedback, \(M_{\text{positive}}=5.81, M_{\text{negative}}=2.64\) (a 7-point scale).\(^{18}\) Thus, it appears that the feedback manipulation was effective.

**Suspicion checks.** In addition to those excluded for failure to recognize the goal manipulation, three participants were excluded from the analysis for reasons of suspicion. Their suspicion checks indicated that they correctly suspected the feedback given in the experiment was bogus.

To summarize, then, 131 out of the 145 original participants were included in the analyses reported in this section (with 11 participants excluded for manipulation check problems, and 3 for suspicion).\(^{19}\)

Finally, it should be added that the item asking participants about the importance of social perception prior to the manipulations ("I think social perception is an important skill") revealed

\[^{18}\text{There was also a significant main effect for achievement goal on the satisfaction item, }F(2,125)=4.28, p<.05. The approach-avoidance contrast revealed a significant effect, }F(1,125)=4.55, p<.05, \text{ with participants being more satisfied with their score in the performance-approach group (}M=4.59\text{) than in the performance-avoidance group (}M=4.01\text{). The non-orthogonal planned contrasts comparing each performance condition to the mastery group yielded a significant approach-mastery effect }F(1,125)=7.73, p<.01, \text{ with the mastery group (}M=3.98\text{) reporting less satisfaction with their score than the performance-approach group. No other significant effects were obtained on this measure, although the performance-mastery contrast approached significance }F(1,125)=3.59, p=.06. Since the sole purpose of including the satisfaction item in the experiment was to use it as a manipulation check of feedback, no predictions were made regarding any effects of achievement goal on this measure. Thus, these goal effects were unexpected.}

\[^{19}\text{It should be noted, however, that the exclusion of the 14 participants was not the reason for the pattern of results reported in this section. A set of supplementary analyses was performed on all the dependent variables, in which all 145 participants were included. The inclusion of the excluded participants did not affect the pattern of the results on the various measures. However, the significance of the effects tended to be somewhat stronger without the excluded participants. This outcome was expected since non-manipulated and suspicious participants are likely to contribute some undesirable noise (which was the reason they were excluded in the first place).}
that, as assumed, participants considered social perception to be an important skill \( M=6.21, SD=.08, \) on a scale of 1-7, with the actual ratings ranging from 4 to 7). Thus, none of the participants was excluded from the analysis based on this item. These high ratings lend support to the assumption underlying the task chosen for this study, namely, that the task tapped into a domain viewed by the participants as important and self-relevant.

**Pre-Feedback Effects – The Nature of the Goal Oriented State**

The dependent variables collected after the achievement goal manipulation, but prior to the feedback manipulation, reflect the nature of goal oriented state. These variables were collected in order to further define and characterize the three goal orientations, by examining how these goals affect the participant’s emotions and thoughts while approaching the task and engaging in it. The pre-feedback variables included the following dependent measures: Affective measures, Task Involvement, Thoughts about Performance and Competence Valuation.

**Effects on the Pre-Feedback Affective Measures**

The mood-scale completed immediately after the goal-manipulation included three sub-scales: FeelingExternally Controlled, Positive Anticipation and Negative Anticipation. As a preliminary step, all three sub-scales were examined using Factor Analysis. Based on this analysis, some changes were made to the original Feeling Externally Controlled scale, but none were necessary for the other two scales. The original, theory-based, Feeling Externally Controlled scale included six items. However, two of the items (‘in control’ [R] and

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20 As explained in footnote 12 (p. 31), the results regarding participants’ performance strategies on the open-ended task could not be presented.
Mastery and Performance Achievement Goals

'constrained') were not included in the final scale. The item ‘in control’ was originally thought to represent the opposite end of feeling externally controlled, but was evidently perceived otherwise by the participants. In a principle component analysis with oblique rotation, all five negatively phrased control items loaded highly onto one factor (loadings=.88-.61), whereas ‘in control’ loaded only weakly onto that factor (.20). In fact ‘in control’ was more strongly associated with the positive anticipation items (.32). A reliability analysis confirmed that ‘in control’ did not measure the same construct as the other ‘control’ items, since the reliability increased when this item was excluded (α with ‘in control’=.78, α without ‘in control’=.81). The reason for excluding the other item, ‘constrained’, was somewhat different. This item was not originally included in the scale, but rather replaced the item ‘free’ [R] which, like ‘in control’, seemed to be perceived by participants in a different way than intended. However, since 34 participants (almost a quarter) completed the scale with the less suitable item, which very likely introduced some undesirable noise, it was preferred to avoid this problem by excluding the item altogether. Thus, the final Feeling Externally Controlled scale included four items: pressured, manipulated, forced and annoyed.

The means for the three affective measures – Feeling Externally Controlled, Positive Anticipation and Negative Anticipation, are presented in Table 1 and Figure 1 (pp. 40-41).

**Feeling Externally Controlled.** The pre-measure of this scale, obtained in the mood baseline questionnaire, was used as a covaraite in the analysis on Feeling Externally Controlled, and, since the distribution was markedly skewed (Skewness=1.57), the analysis was performed on the logarithmic transformation of the scores (base-10 logarithm). It was predicted that the performance goals would evoke stronger feelings of being externally controlled compared to the
mastery condition. The Ancova on the transformed scores revealed a significant effect for the performance-mastery contrast, $F(1,127)=4.61, p<.05$.21 As predicted, participants in both performance conditions reported feeling more externally controlled than the mastery group. There were no other significant effects.

**Positive Anticipation.** The analysis of variance on this measure yielded no significant effects.22 However, for exploratory purposes, it should be noted that the pattern of the means was quite in accordance with prediction, with the performance-avoidance group experiencing less positive anticipation than both the mastery and the performance-approach groups (see Table 1 and Figure 1).

**Negative Anticipation.** The pre-measure of Agitation plus the item ‘relaxed’ [R] collected in the mood baseline questionnaire were averaged and used as a covariate in the analysis of this measure, since this combination of items included three of the items of the Negative Anticipation scale and two additional items of similar nature. No significant effects were found on this measure, with or without the covariate. However, it should be noted that the performance-mastery contrast was close to significance, $F(1, 127)=3.09, p=.08$. The pattern of the means was in accordance with prediction, with both performance groups (especially performance-avoidance) reporting higher negative anticipation than the mastery group.

In sum, the affective measures obtained immediately following the goal manipulation showed the predicted pattern, although only the negative emotions reached (or approached) statistical significance. The performance-avoidance participants reported the highest degree of

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21 In the analysis on the non-transformed scores, the performance-mastery contrast approached significance, $F(1,127)=3.56, p=.06$.

22 There was no appropriate covariate for this measure.
Negative Anticipation and the lowest degree of Positive Anticipation, as well as a higher degree of Feeling Externally Controlled. The mastery group on the other hand, reported the lowest Negative Anticipation and a high degree of Positive Anticipation, as well as a lower level of Feeling Externally Controlled. And finally, as predicted, the performance-approach group exhibited an interesting combination of positive and negative feelings: they reported a high level of Negative Anticipation coupled with a high level of Positive Anticipation, as well as a high degree of Feeling Externally Controlled. However, of the three variables, only the Feeling Externally Controlled measure reached significance.

**Table 1**

*Means of Pre-Feedback Mood Variables as a Function of Achievement Goal Condition*

<table>
<thead>
<tr>
<th></th>
<th>Performance-Approach</th>
<th>Performance-Avoidance</th>
<th>Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling externally controlled</td>
<td>2.06&lt;sub&gt;A&lt;/sub&gt;</td>
<td>2.06&lt;sub&gt;A&lt;/sub&gt;</td>
<td>1.75&lt;sub&gt;B&lt;/sub&gt;</td>
</tr>
<tr>
<td>Positive anticipation</td>
<td>5.56</td>
<td>5.41</td>
<td>5.52</td>
</tr>
<tr>
<td>Negative anticipation</td>
<td>2.50&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.59&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.25&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

*Note.* Within each dependent measure, means not sharing common subscripts are significantly different from each other (Uppercase: $p<.05$; lowercase: $p<.10$). The means for Feeling Externally Controlled are the non-transformed means, with the baseline measure of this scale as a covariate. The baseline measure of Agitation + ‘relaxed’ [R] was used as a covariate with Negative Anticipation. All variables had a possible range of 1-9. Standard deviations were 1.11, 1.57, 1.18 for Feeling Externally Controlled, Positive Anticipation and Negative Anticipation, respectively.
Figure 1

Pre-Feedback Mood Variables as a Function of Achievement Goal Condition

a. Feeling Externally Controlled

b. Positive Anticipation

c. Negative Anticipation
Effects on Process Measures Tapping Thoughts and Goals

The questionnaire completed immediately after the task session included the following variables: Task Involvement, Thoughts about Performance, and Competence Valuation. None of these variables yielded significant results in the analysis of variance. However, for exploratory purposes, the patterns of the group means for these measures are described below.

**Task Involvement.** Although none of the goal contrasts yielded significant results ($F$'s(1,128)<1, n.s.), the pattern of the means on this measure was according to prediction, with participants being most task involved in mastery ($M=5.63$), and less involved in both performance conditions ($M_{\text{approach}}=5.48$, $M_{\text{avoidance}}=5.50$).

**Thoughts about Performance.** The pattern of the means for this measure was in accordance with prediction, with the performance-avoidance group reporting the highest level of Thoughts about Performance ($M=4.98$), the mastery group the lowest ($M=4.67$), and the performance-approach group somewhere in between ($M=4.74$). But, once again, these differences did not reach significance ($F$'s(1,128)<1.37, n.s.).

**Competence Valuation.** The intercorrelations between the three Competence Valuation items were only moderate ($r$'s ranged from .24-.60, all $p$'s<.01); hence, each item was analyzed separately. The Competence Valuation items yielded some unexpected patterns. Contrary to expectation, the group reporting that their performance on the task was most important to them (item 1) was the mastery group ($M=4.83$), followed by the performance-avoidance condition ($M=4.69$), then the performance-approach group ($M=4.54$). With regard to the item assessing participants’ concern about doing poorly on the task (item 3), the performance-avoidance and the mastery groups expressed more concern ($M_{\text{avoidance}}=3.85$, $M_{\text{mastery}}=3.80$) than the performance-approach condition ($M=3.54$). And, contrary to expectation, the group reporting it was most
important for them to learn new things from their experience with the task (item 2) was the performance-avoidance group \( (M=5.77) \), followed by the performance-approach group \( (M=5.61) \), and then the mastery group \( (M=5.44) \). It is not clear why these patterns of means came about. One possibility is that they were the result of psychological reactance on the part of participants in the performance conditions. However, as none of these differences was significant \( (F's(1,128) \text{ for the orthogonal contrasts ranged from } 0.13-1.33, \text{ n.s.}) \), this speculation will not be pursued any further. In any case, the unexpected findings on the Competence Valuation items suggest that the exact nature of the concept of competence valuation is not fully clear at this stage, and that the three items used in the present study most likely measured slightly different concepts than intended. Clearly, the concept of competence valuation and its measurement require further and more careful examination.

**Correlations among the Various Process Measures**

The bivariate correlations between the various pre-feedback process measures are presented in Table 2. The pattern of correlations was generally consistent with expectations. Within the affective measures, Feeling Externally Controlled was positively correlated with Negative Anticipation. Interestingly, neither one of these measures correlated with Positive Anticipation. This lack of negative correlation suggests that, as was presumed in this study, Negative Anticipation and Positive Anticipation are two independent experiences, rather than mutually exclusive affective states. As expected, Task Involvement negatively correlated with Feeling Externally Controlled and Negative Anticipation, and was positively correlated with Positive Anticipation and Thoughts about Performance. Thoughts about Performance were related to the negative emotions (Feeling Externally Controlled and Negative Anticipation) as
well as to the positive experience of Task Involvement. Thus, Thoughts about Performance appears to be a rather complex construct, reflecting concern and anxiety regarding performance together with increased attention to the task. Finally, the three Competence Valuation items were moderately and positively correlated with one another. The correlations of these items with the other process measures can shed some light on the nature of the constructs they were measuring. Two of the Competence Valuation items (item 1 – importance of one’s performance, and item 2 – importance of learning new things) were positively correlated with Positive Anticipation and Task Involvement. Thus, these two items were probably tapping a positive experience. This was somewhat unexpected for the item asking about performance (item 1) and could, perhaps, explain why the mastery group was the highest (although not significantly) on this item. The third item (concern about doing poorly) was tapping a more negative experience, as it was positively related to Feeling Externally Controlled, Negative Anticipation and Thoughts about Performance. This result is consistent with expectations. In sum, the pattern of correlations between the various process measures suggests that the different variables were generally measuring the intended constructs (with the exception of the first Competence Valuation item). It does not, however, seem to provide an explanation for the unexpected results on Competence Valuation items 2 and 3.
Table 2

*Intercorrelations of All Pre-Feedback Measures*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling Externally Controlled</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Positive Anticipation</td>
<td>-.11</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Negative Anticipation</td>
<td>.63**</td>
<td>.04</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Task Involvement</td>
<td>-.26**</td>
<td>.32**</td>
<td>-.06</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Thoughts about Performance</td>
<td>.19*</td>
<td>-.03</td>
<td>.22*</td>
<td>.19*</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Competence Valuation – item 1</td>
<td>-.04</td>
<td>.42**</td>
<td>.09</td>
<td>.42**</td>
<td>.16</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>7. Competence Valuation – item 2</td>
<td>-.04</td>
<td>.36**</td>
<td>.09</td>
<td>.36**</td>
<td>.08</td>
<td>.48**</td>
<td>--</td>
</tr>
<tr>
<td>8. Competence Valuation – item 3</td>
<td>.22*</td>
<td>.14</td>
<td>.29**</td>
<td>.16</td>
<td>.39**</td>
<td>.60**</td>
<td>.24**</td>
</tr>
</tbody>
</table>

N=131. * p < .05, ** p < .01.

*Post-Feedback Effects – The Joint Effect of the Goal Orientation and Feedback*

The post-feedback measures reflect the combined effect of the goal orientation and performance feedback (positive or negative). In the present study it was generally hypothesized that a mastery orientation would lead to more positive consequences than both performance conditions. In particular, it was predicted that a mastery goal would buffer against the detrimental effects of negative feedback on motivation, performance and affect, whereas both performance-approach and performance-avoidance goals would not prevent such deleterious outcomes. Thus, the mastery orientation was predicted to promote more positive outcomes.
Mastery and Performance Achievement Goals compared to both performance conditions, with this tendency being especially pronounced under negative feedback. To test this hypothesis, various dependent measures were collected following the administration of feedback. These measures can be classified into three groups: intrinsic motivation indicators, performance-related measures and affective measures. With respect to the third group of measures, it should be noted that most of the affective measures were also collected in order to extend Higgins and his colleagues' findings regarding the effects of goals on the type of emotions experienced (Higgins, Shah & Friedman, 1997).

Effects on Intrinsic Motivation Outcomes Measures

Three different indicators of intrinsic motivation were obtained: self-report measure of interest/enjoyment (Enjoy), engagement in the task during a free-choice period (Free-play), and interest in participating in a follow-up study on the task, which is a measure of behavioral inclination (Follow-up). The bivariate correlations between these three indicators were not all significant. Enjoy significantly correlated with Follow-up ($r = .36, p < .0001$). However, it appears this correlation was the result of the variance that both variables shared with Pre-Enjoy, since when a partial correlation controlling for Pre-Enjoy was computed, the correlation between the two indicators was no longer significant. Moreover, even when Pre-Enjoy was not partialed out, the correlation between Enjoy and Follow-up was significant only in three out of the six experimental groups (more specifically, in the mastery group receiving positive feedback and in both performance-approach groups; $r \_s$ ranged from $.46-.64, p \_s < .03$). Enjoyment was also not significantly correlated with Free-play. This was true in all the experimental conditions, except one – the performance-avoidance group receiving negative feedback ($r = .63, p < .005$). As will be explained below, the positive correlation in this condition was unexpected and difficult to
interpret (see pp. 56-57). Finally, Free-play significantly correlated with Follow-up ($r=.25$, $p<.005$), and this correlation remained significant when controlling for Pre-Enjoy ($r=.22$, $p<.01$). However, when examined within cells (without partialing out pre-enjoy), Free-play and Follow-up were significantly correlated only in the mastery condition receiving negative feedback ($r=.55$, $p<.01$) and approached significance in the performance-approach group receiving negative feedback ($r=0.36$, $p=.09$). Thus, it is obvious that the three indicators were not measuring a single construct of ‘intrinsic motivation’. It seems they were either measuring different aspects of intrinsic motivation, or perhaps some of them were not measuring what we consider ‘intrinsic motivation’ at all, at least in some of the experimental conditions. This issue will be explored further below.

In general, it was predicted that the mastery group would show higher levels of intrinsic motivation compared to the performance groups, as measured by all three indicators, under both positive and negative feedback. In addition, with respect to the performance orientations, it was also hypothesized that under negative feedback these groups might show a discrepancy between the self-report measure of enjoyment and the behavioral indicators of intrinsic motivation, that is, a low level on Enjoy combined with high levels on Free-play and Follow-up. This latter prediction was based on theory and previous findings (Anderson & Rodin, 1989; Ryan, Koestner & Deci, 1991).

**Enjoyment.** Pre-Enjoy, collected at the beginning of the experiment, was used as a covariate in the analysis of variance. The analysis revealed a significant main effect for achievement goal, $F(2,124)=3.43$, $p<.05$. In accordance with prediction, the performance-mastery contrast yielded a significant effect, $F(1,124)=6.85$, $p<.01$, with the mastery group reporting a higher level of interest and enjoyment than either performance group ($M_{mastery}=6.04$,
In addition, there was a highly significant feedback main effect, $F(1,124)=17.26, p<.0001$, with participants expressing more enjoyment after receiving positive feedback ($M=6.07$) than when they received negative feedback ($M=5.72$). No other effects were significant. Thus, unlike Elliot & Harackiewicz's (1996) finding, in which the performance-approach and mastery groups were both higher on enjoyment than the performance-avoidance condition, in the present study the performance-approach group was as low on enjoyment as performance-avoidance, while the mastery group reported a significantly higher enjoyment level than either performance condition. This pattern of means is consistent with prediction. Although the goal by feedback interaction was not significant ($F(2,124)<1$, n.s.), the above-mentioned difference between the mastery and performance orientations was more pronounced in the negative compared to the positive feedback condition (see Figure 2-b). In addition, the results provided some evidence in support of the hypothesis that a mastery goal functions as a buffer against the detrimental effects of negative feedback on enjoyment. In order to examine this hypothesis, the simple effects of feedback were tested separately within each of the three goal conditions (the Bonferroni correction was used to adjust for type I error inflation). This analysis showed that the difference between positive and negative feedback was significant in both performance conditions (performance-avoidance: $F(1,124)=10.38, p<.002$; performance-approach: $F(1,124)=4.19, p<.05$), but was not statistically significant (albeit approaching significance) in the mastery condition ($F(1,124)=3.43, p=.07$). Moreover, it is interesting to note that the enjoyment level experienced by the performance groups in positive feedback was very close to the level reported by the mastery group under negative feedback ($M_{mastery\text{negative}}=5.92, M_{approach\text{positive}}=5.97, M_{avoidance\text{positive}}=6.04$). Thus, as hypothesized, it seems the mastery orientation did in fact function as a buffer against the detrimental effects of negative feedback on
enjoyment. Although all the participants tended to report higher enjoyment when receiving a feedback of success vs. failure, the cost of failure, in terms of decreased enjoyment and interest in the task, was smaller for the mastery group compared to both performance conditions.

Figure 2

Means of Enjoy as a Function of Experimental Condition

a. Enjoy as a Function of Achievement Goal

b. Enjoy as a Function of Achievement Goal and Feedback

Note. Enjoy scores (the average of the seven Enjoy items) had a possible range of 1-7. The values reported were adjusted for Pre-Enjoy (which had the same possible range). The mean Enjoy score was 5.89, S.D=0.91.

Free-play. As noted above, the mastery group was predicted to be higher on all three measures of intrinsic motivation, including the behavioral indicator. However, it was also hypothesized that under negative feedback, the performance conditions might exhibit a discrepancy between the behavioral and self-report measures of intrinsic motivation, i.e. high levels of persistence in the task during the free-choice period coupled with low levels of reported enjoyment. To test these hypotheses, the number of social perception photographs completed by
each participant during the free choice period was used as the Free-play score (ranges from 0-20). However, participants who worked on the photographs for the entire free-choice period, but did not complete the set, were also given a score of 20, to make the score indicative of the amount of time invested in doing the photos rather than the speed with which they were completed. The distribution of scores was bimodal, with 22.5% of participants not engaging in the task at all and 54.3% engaging in the task the entire time or completing the entire set. Several transformations were employed in an attempt to correct for this problem, including arcsine and logit, but none of them were effective. Thus, the analyses were performed on the non-transformed scores. The analysis of variance on this measure yielded no significant effects (All $F's < 1.1$, n.s.). However, since the pattern of means revealed an interesting interaction, I shall describe it briefly below for exploratory purposes. As can be seen in Figure 3 (p. 51), performance-approach participants showed the same amount of Free-play under both positive and negative feedback. The same was true for the mastery group, except they had a higher level of Free-play than the performance-approach group. The performance-avoidance group, on the other hand, demonstrated a considerable difference in free-choice behavior as a function of feedback: they were the lowest group on Free-play in positive feedback, and the highest group in negative feedback. Recall that under negative feedback, the performance-avoidance group also evidenced a relatively low level of enjoyment (see pp. 47-49). Thus, it appears the performance-avoidance group receiving negative feedback demonstrated the hypothesized discrepant pattern of elevated Free-play coupled with low Enjoyment. Taken together, it seems the heightened level of Free-play in this group was the result of internally controlled or pressured persistence, rather than an indication of intrinsic motivation (Ryan, Koestner & Deci, 1991; Anderson & Rodin, 1989). Thus, it seems Free-play may not always be a good indicator of intrinsic motivation, since
in some situation individuals may engage in a task for reasons other than the sheer pleasure this task provides (e.g. one may try to reach a particular standard of performance). Although the performance-approach participants did not show this split pattern between free-play and enjoyment, they exhibited a relatively low level of free-play under both positive and negative feedback. In contrast, and in accordance with prediction, the mastery group showed high levels of Free-play in both feedback conditions. But once again, one should bear in mind these difference did not reach statistical significance.

**Figure 3**

*Free-play as a Function of Experimental Condition*

*Note.* Free-play was measured continuously, as the number of social perception photos completed by the participant during a free-choice period. This measure ranges from 0-20. (Participants who worked on the social perception task the entire period received a score of 20, even if they did not complete all the photos). The mean Free-play score was 12.63, S.D=8.85. There were no significant effects on this measure (N=129).

The participants' free-play behavior was also coded in terms of the *time* spent on the task during the free choice period (rather than the *number* of photos completed). This classification
was based on the participants’ own report of their actions, obtained during debriefing. Based on this information, participants were classified into three categories according to the time spent on the social perception task: (1) full-time (or completion of the full set before continuing to other activities), (2) part-time, or (3) none. The analysis on this measure yielded no significant results, and the pattern of means was very similar to that obtained from the Free-play measure based on the number of photos completed, which was reported above.

In addition, the Free-play data were also analyzed as a dichotomous dependent variable (played with the task / did not play with it at all), using a logistic regression analysis. First, achievement-goal and feedback (but not the goal by feedback interaction) were regressed on the Free-play outcome variable. Achievement goal was coded according to the two orthogonal contrasts, so it was possible to test these contrasts directly. This analysis showed that feedback significantly predicted Free-play outcome \((Wald \text{ statistic}= 5.10, df=1, p<.03)\), with more participants engaging in the task in negative compared to positive feedback (85% vs. 69%, respectively). In addition, the performance-mastery contrast was close to significance, \((Wald \text{ statistic}= 2.96, df=1, p=.09)\), with the mastery group demonstrating a higher percentage of free-play (87%) compared to the performance groups (73%) (performance approach – 69%, performance-avoidance – 77%). Overall, this model correctly predicted 77.52% of the participants’ responses. Next, the goal by feedback interaction was entered to the model as an additional predictor. With this model, the feedback effect remained significant, but the performance-mastery goal contrast was now less significant \((Wald \text{ statistic}= 2.34, df=1, p=.13)\). The interaction effect itself was not a significant predictor of the Free-play outcome \((Wald \text{ statistic}= 0.23, df=2, \text{n.s.})\). To summarize, then, analyzing Free-play as a dichotomous variable (played/did not play) yielded only a significant feedback main effect. There was also a tendency
Willingness to participate in a follow-up study. Like the other intrinsic motivation indicators, this behavioral inclination measure was also predicted to reflect greater intrinsic motivation on the part of the mastery group compared to the performance conditions. In addition, as in the case of Free-play, a discrepancy between this indicator and the self-report measure of enjoyment was a possible outcome for the performance conditions. Two items assessed the participants' willingness to participate in a follow-up study. The first item was a yes/no question, asking whether the participant agreed to be contacted for a follow-up study, and the second item, which was used as the dependent variable, asked the participant 'how likely is it that you'll be willing to participate', if contacted for such study (on a 7-point scale). The great majority of participants indicated that they agreed to be contacted for a follow-up study on the task (91.6%). Out of the 11 participants who responded that they did not want to be contacted, six completed the next item, while five left it blank. In order to deal with this problem of missing values, the mean rating of the six who responded they did not want to be contacted but nevertheless answered the second item ($M=2.17$) was substituted for the missing values of the five who did not respond to it. Furthermore, since most participants expressed high interest in a follow-up study, there was a ceiling effect which caused the distribution of the second item to be markedly negatively skewed ($Skewness = -1.52$). To deal with this problem, the Analysis of variance was performed on the third power of the scores. This power transformation was selected since it was
the most effective in decreasing the skewness (following transformation, $Skweness = -0.36$). The Anova yielded no significant effects. However, the performance-mastery contrast was close to significance, $F(1,125)=3.10, p=.08$, with the mastery group, as predicted, expressing a greater willingness to participate in the follow-up study than either performance group ($M_{mastery}=5.96, M_{approach}=5.58, M_{avoid}=5.62$). Furthermore, the goal by feedback interaction was also close to significance, $F(2,125)=2.66, p=.07$, with an interesting pattern of means (see Figure 4). As can be seen from Figure 4, performance approach participants expressed greater willingness to participate in the follow-up study when they received positive rather than negative feedback, while performance-avoidance participants showed the opposite pattern, reporting a greater likelihood they will participate when they received negative feedback. Mastery participants, on the other hand, expressed high interest in participating in a follow-up in both feedback conditions (slightly higher in negative). However, the difference between positive and negative feedback only approached significance for the performance-approach group ($F(1,125)=3.72, p<.06$), and was not significant for the performance-avoidance and mastery conditions (performance-avoidance: $F(1,125)=1.52, p=.22$, mastery: $F(1,125)<1$, n.s.). Although it was not significant, the pattern exhibited by the performance-avoidance group is especially interesting. Recall that the performance-avoidance group receiving negative feedback experienced the lowest level of enjoyment relative to all the other groups (see Figure 2-b). Yet, despite that, this group evidenced an increased willingness to participate in a follow-up study on the task compared to the performance-avoidance group receiving positive feedback (although this difference was not significant). Thus, it seems the performance-avoidance group receiving negative feedback was experiencing high levels of internal pressure, which led them to increase the probability of engaging in the task again (as well as exhibit increased Free-play with the task) despite not
having enjoyed it so much. Another way of looking at it, however, is that the performance-avoidance group receiving positive feedback exhibited decreased interest in participating in a follow-up compared to their counterparts receiving negative feedback, since once they met their goal, they did not want to risk failing the next time. The two explanations are, of course, not mutually exclusive. The performance-approach group, in contrast, evidenced stronger interest in coming back to work on the task when they met their goal. Thus, negative feedback had a detrimental effect on this group, causing them to refrain from trying again after not having reached their goal in the first trial. The mastery orientation, in comparison, seems to have buffered against the damaging effects of negative feedback evidenced by the other two groups. Mastery participants expressed high interest in participating in another study on the task under both positive and negative feedback (with only a small, non-significant difference between them).

Figure 4

*Follow-up as a Function of Experimental Condition*

*Note.* The means presented are the transformed means of Follow-up (the analysis was done on the third power of the original scores).
To summarize, the intrinsic motivation measures generally supported the hypothesis that a mastery goal is more beneficial to intrinsic motivation compared to either performance goal. The mastery group showed higher levels than both performance conditions on all the three intrinsic motivation indicators (this difference was statistically significant only for Enjoy, but approached significance on the other two indicators\(^{23}\)). In contrast, the two performance groups were not statistically different from one another on any of the measures. These results are inconsistent with Elliot & Harackiewicz's (1996) findings, but are consistent with the predictions in the present study. Furthermore, there was also evidence in support of the hypothesis that a mastery goal buffers against the detrimental effects of negative feedback on intrinsic motivation. Across all measures, the mastery group demonstrated the least difference between positive and negative feedback, and showed consistent responses on all measures (i.e. the highest levels on all indicators). In contrast, the performance groups were more prone to exhibit a difference in motivation as a function of feedback (performance-approach on Enjoy and Follow-up, and performance avoidance on all three measures, although the difference was significant only on Enjoy). In addition, the performance-avoidance group receiving negative feedback demonstrated the hypothesized discrepant pattern between the self-report and behavior-related indicators of intrinsic motivation. Compared to the other groups, this group evidenced low levels on Enjoy coupled with high levels on Free-play and Follow-up.\(^{24}\) Although this pattern was not statistically significant, it does suggest that Free-play and behavioral-inclination measures are not

\(^{23}\) On Free-play, the performance-mastery contrast approached significance only when Free-play was analyzed as a dichotomous variable. The continuous measure was not close to significance (see pp. 49-51).

\(^{24}\) It was therefore surprising to find a significant positive correlation between Enjoy and Free-play in that group (see p. 46). Based on the pattern of means described above, one could have expected a negative correlation in this condition. This finding is therefore difficult to interpret. Moreover, Enjoy and Free-play did not significantly correlate in any other group, although based on the pattern of means a positive correlation in the mastery group would have been expected.
always good measures of intrinsic motivation, since in some situations they are likely to reflect internal control (i.e. an internal pressure to perform) rather than true intrinsic motivation.

**Effects on Performance-Related Outcome Measures**

Like the intrinsic motivation measures, the performance-related measures were also predicted to show more positive outcomes for the mastery group compared to both performance conditions. Thus, the mastery group was hypothesized to be higher than either performance group on all the performance-related measures, and to buffer against the detrimental consequences of negative feedback on these measures. The performance-related measures included the following variables: Predicted future Score and Percentile, Challenge-seeking level and Interest in receiving explanation about the photos.

**Predicted Score.** The analysis of variance performed on this measure revealed a significant main effect for achievement goal, $F(2,125)=5.08, p<.01$. As predicted, the performance-mastery contrast yielded a significant effect, $F(1,125)=8.40, p<.005$, with the mastery group expecting to get a higher future score than either performance group. The approach-avoidance contrast and the goal by feedback interaction were not significant. Table 3 presents the means on Predicted Score for the various goal and feedback combinations. To simplify the interpretation, the means presented are the difference scores between the actual score participants got (12 in positive feedback, 8 in negative), and their predicted future score.\(^{25}\) As can be seen from the table, all three groups predicted to improve following negative feedback, but mastery participants predicted a greater improvement. Moreover, following

\(^{25}\) The analysis of variance on the difference-score variable was identical to the one on the raw predicted score variable, for both the achievement goal effects and the goal by feedback interaction.
positive feedback, both performance groups predicted to get a lower score on a future set (especially performance-approach), while the mastery group predicted to be just as successful on a future set as they were on the previous one. In addition, there was also a significant feedback effect, \( F(1,125)=48.87, p<.0001 \), with participants predicting to get a higher score when they received positive rather than negative feedback\(^{26}\). No other significant effects were found on this measure. Thus, the results on Predicted future Score generally supported the hypothesis regarding the advantage of a mastery goal over a performance goal, whether approach or avoidance.

Table 3

<table>
<thead>
<tr>
<th></th>
<th>Performance-Approach</th>
<th>Performance-Avoidance</th>
<th>Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Feedback</td>
<td>-1.18</td>
<td>-0.38</td>
<td>0.00</td>
</tr>
<tr>
<td>Negative Feedback</td>
<td>1.67</td>
<td>1.56</td>
<td>2.26</td>
</tr>
</tbody>
</table>

*Note.* The reported difference scores were computed by subtracting the actual score received by participants (12 in positive feedback, 8 in negative) from their Predicted future Score (the number of correct answers they expected to get on a future set of 15 photos). Standard deviation of Predicted Score-difference was 1.82.

\(^{26}\) The analysis of variance on the difference-score variable also yielded a significant feedback effect, but a different one. This analysis showed that participants predicted greater improvement in the negative feedback condition (a mean improvement of 1.83 points) compared to the positive feedback condition (in which they actually predicted a mean decline of .52 points), \( F(1,125)=98.85, p<.0001 \). This is probably due to the relatively high score obtained in the positive feedback condition (12 out of 15), which left little room for improvement in this condition.
Predicted Percentile. Participants responses were recoded as an ordinal scale from 1 (=lower 5%) to 11 (=upper 5%), with a midpoint of 6 (average, 50%). The Anova on this measure yielded only a significant feedback effect, $F(1,125)=78.17, p<.0001$, with predicted percentile being higher in positive ($M=8.20$) compared to negative feedback ($M=5.86$). No other significant effects were found.

Challenge seeking level. Challenge seeking level was conceptualized as the difficulty-level chosen by the participants for a future task-set. More specifically, it was operationalized as the difference between the difficulty-level ascribed to the previous task set, and the difficulty-level requested for a next set (both 9-point scales). Thus, for example, requesting an easier level than that of the previous set produces a negative challenge score, and is considered a lower level of challenge seeking than requesting a more difficult set as the next one. Prior to the analysis on the challenge measure, an Anova was performed on the item assessing the difficulty level attributed to the previous set (a 9-point scale, 1=very easy, 5=moderate, 9=very difficult). There was a significant feedback effect on this item, with participants attributing greater difficulty to the task in negative compared to positive feedback ($M_{\text{negative}}=5.45$, $M_{\text{positive}}=4.70$), $F(1,125)=10.41, p<.005$. No other significant effects were found on this item. The Anova on the challenge measure (difficulty level of the next set minus difficulty level of the previous set) also yielded a significant feedback effect, $F(1,125)=48.94, p<.0001$, with participants demonstrating a higher challenge seeking level in positive compared to negative feedback. ($M_{\text{positive}}=2.63$, $M_{\text{negative}}=.01$). There were no other significant effects. Although the achievement goal contrasts did not reach statistical significance, the pattern of means will be discussed briefly below for
exploratory purposes. The means of challenge seeking level for the different goal and feedback combinations are presented in Table 4. As evident from the table, the mastery group showed the highest degree of challenge seeking, while the performance-avoidance group evidenced the lowest level, with performance-approach somewhere in between. This was true in both feedback conditions. Although not quite significant, these results seem to be in accordance with prediction, suggesting the mastery orientation fosters a more optimal level of challenge seeking. Mastery participants chose difficulty levels that were moderately above the level of the previous task, not too easy to assure successful performance and not too difficult to constitute self-handicapping. Performance participants, on the other hand, perhaps worried about the possibility of not reaching their goal, chose easier task levels than the mastery group, thus presenting themselves with a lesser challenge.

Table 4

Means for Challenge Seeking Level by Experimental Condition

<table>
<thead>
<tr>
<th></th>
<th>Performance-Approach</th>
<th>Performance-Avoidance</th>
<th>Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Feedback</td>
<td>2.59</td>
<td>2.29</td>
<td>3.00</td>
</tr>
<tr>
<td>Negative Feedback</td>
<td>0.04</td>
<td>-0.56</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Note. Challenge scores were computed by subtracting the difficulty-level attributed to the previous task-set from the difficulty-level requested for the next set (both indicated on 9-point scales). Standard deviation of the Challenge scores was 2.51.

27 The contrasts closest to significance were the performance-mastery contrast, $F(1,125)=2.71, p=.10$, and the non-orthogonal avoidance-mastery comparison, $F(1,125)=3.48, p=.06$. In both cases, mastery participants exhibited greater challenge seeking levels than the performance participants (compared to both approach and avoidance performance groups in the former contrast, and to performance-avoidance participants in the latter).
Interest in explanations about the photographs. To test the hypothesis that mastery participants would demonstrate greater interest in receiving explanations about the photos compared to performance participants, an analysis of variance was performed on the number of photo explanations requested by each participant (0-5). This analysis yielded only a feedback main effect, $F(1,125)=5.52, p<.05$, with participants requesting more explanations in negative compared to positive feedback ($M_{\text{negative}}=2.95, M_{\text{positive}}=2.18$). No other significant effects were obtained on this measure. The pattern of the means for the goal conditions was according to prediction, with the mastery group requesting, on average, somewhat more explanations than both performance groups ($M_{\text{mastery}}=2.72, M_{\text{approach}}=2.50, M_{\text{avoidance}}=2.48$). But, once again, this effect was not statistically significant.

An additional hypothesis regarding this measure was that the performance-approach participants would request a higher proportion of explanations for photos they answered correctly vs. incorrectly compared to the other groups. The analysis on the proportion of correct photos requested included only those participants who requested at least one photo explanation. Thus, 32 participants (24.4%) were not included in the analysis, and they were quite evenly divided across conditions. For the remaining 99 participants, the proportion of correct explanations was computed by dividing the number of explanations requested for ‘correct’ photos (according to the feedback given to participants) by the total number of explanations requested by the participant. Since most participants (73.7%) requested explanations only for their incorrect answers (i.e. no explanations for correct answers), the resulting distribution was extremely non-normal, with the minimum value (0.00) being the mode. No transformation was found that could effectively correct for this problem, hence the Anova was performed on the untransformed scores. This analysis yielded only a significant feedback effect, $F(1,93)=9.93,$
with participants requesting a higher proportion of explanations for 'correct' photos in positive than in negative feedback (translated to percentages: \( M_{\text{positive}} = 17.7\% \), \( M_{\text{negative}} = 4.61\% \)). This result makes sense, as participants in the positive feedback condition got only three incorrect answers (compared to seven in negative), and thus those participant had the option of requesting explanations for all their 'incorrect' answers, plus two explanation for 'correct' answers. For participants in the negative feedback condition, on the other hand, explanations for 'correct' answers had to come instead of explanations for their mistakes, and thus they were less likely to request them. No other significant effects were found on this measure. Although the goal effect was not significant, it is worth noting that the pattern of means was quite in accordance with prediction, with the performance-approach group requesting the highest proportion of explanation for 'correct' photos (\( M = 12.7\% \)), followed by performance-avoidance (\( M = 11.6\% \)), and finally the mastery condition (\( M = 9.2\% \)).

**Additional measures.** The analysis of variance on the Perceived competence item ('How well do you feel you did on the task') revealed only a feedback main effect, \( F(1, 125) = 247.50, p < .0001 \), with the expected result of participants feeling they did better in positive feedback (\( M = 5.62 \)) compared to negative feedback (\( M = 2.59 \)). No other significant effects were found on this measure. The analysis on the item assessing the importance of social perception to the participants (post-feedback) also revealed a feedback main effect, \( F(1, 124) = 11.68, p < .001 \). Interestingly, participants reported that social perception skills were more important to them in the positive feedback (\( M = 5.91 \)) compared to the negative feedback (\( M = 5.42 \)) conditions. There were no other effects on this measure.

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28 The very similar item assessing the importance of social perception prior to the manipulations was used as a covariate in this analysis.
Correlations involving the performance-related outcome variables. Generally, the performance-related variables tended not to correlate with the intrinsic motivation variables, with the exception of three significant correlations (Predicted Score\(^2\) with Enjoyment, \(r = .29, p < .001\), and Proportion of explanations requested for 'correct' photos with both Free-play \([r = -.21, p < .05]\) and Follow-up \([r = -.26, p < .01]\)). This pattern of results suggests that the two groups of variables were generally measuring different constructs, as intended. In contrast, there were many significant intercorrelations between the different performance-related outcome measures (see Table 5). This pattern provides evidence that the different performance-related measures were indeed measuring related constructs, as intended.

Table 5

**Intercorrelations of All Performance-related Outcome Variables**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Predicted score (raw)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Predicted score (difference)</td>
<td>.32**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Predicted percentile</td>
<td>.55**</td>
<td>-.19*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Difficulty level-previous</td>
<td>.20*</td>
<td>.12</td>
<td>-.26**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Challenge (difficulty level-difference)</td>
<td>.40**</td>
<td>-.22**</td>
<td>.50**</td>
<td>-.62**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>6. Number of explanations requested</td>
<td>.01</td>
<td>.24**</td>
<td>-.17*</td>
<td>-.01</td>
<td>-.13</td>
<td>--</td>
</tr>
<tr>
<td>7. Proportion of 'correct' explanations requested</td>
<td>.18</td>
<td>-.18</td>
<td>.20*</td>
<td>-.18</td>
<td>.23*</td>
<td>.11</td>
</tr>
</tbody>
</table>

*Note. N=131 for variables 1-6, and N=99 for variable 7.
* \(p < .05\). ** \(p < .01\).

\(^{29}\) The raw predicted score variable, rather than the recoded variable reflecting the difference between the predicted and obtained scores.
To summarize, the results on the performance-related measures were generally consistent with predictions that a mastery goal would promote more positive outcomes than either performance goal. However, only one measure – predicted future score – reached statistical significance. According to this measure, mastery participants were the most optimistic regarding their score on a future task-set. When receiving positive feedback, the mastery group was the only group expecting to do equally well in the future, while both performance groups expected their performance to decline. And, when confronted with negative feedback, mastery participants expected to improve more than did both performance conditions. Thus, as expected, it appears the mastery goal promoted self-efficacy regarding the task, regardless of feedback, while the performance goals did not produce similar confidence in one’s ability. The results on this measure mirror the results on Enjoyment (the self-report measure of intrinsic motivation), providing further support for the advantage of a mastery orientation over performance goals, whether approach or avoidance. The other performance-related measures – Challenge, Predicted Percentile, and number and type of explanations requested – revealed a similar pattern of better outcomes for the mastery condition, but none of them reached statistical significance. However, the pattern of means of these measures, and the correlations of some of them (e.g. Challenge, Predicted Percentile) with the highly significant measure of Predicted future Score, suggest that these measures merit further attention. Future examination of these, and other, performance-related measures may yield valuable results.
Effects on the Affective Outcome Measures

Three emotional dimensions were included in this category: Cheerfulness-Dejection, Quiescence-Agitation and High-Low Situational Self-esteem. The self-esteem dimension was predicted, like the intrinsic motivation and performance-related measures, to reflect the advantage of a mastery goal over performance goals. Thus, it was predicted that mastery oriented participants would be less susceptible to change in self-esteem as a result of performance feedback (particularly negative feedback), while both performance groups would show greater fluctuation in self-esteem as a function of feedback. The other two emotional dimensions were predicted to partially replicate Higgins’s findings and extend them. Recall that according to Higgins’s theory and findings, a promotion goal (equivalent to performance-approach) is associated predominantly with Cheerfulness-Dejection emotions, while a prevention goal (equivalent to performance-avoidance) is mainly associated with Quiescence-Agitation emotions (Higgins, Shah & Friedman, 1997). In the present study, however, it was predicted that the mastery goal, being a ‘purer’ form of a promotion orientation than performance-approach, would be even more strongly associated with the Cheerfulness-Dejection dimension than performance-approach. Compared to the mastery goal, the performance-approach goal was predicted to combine both emotional dimensions, while the performance-avoidance goal was predicted, like in Higgins’s findings, to be associated mainly with Quiescence-Agitation emotions.

Cheerfulness-Dejection and Quiescence-Agitation emotional dimensions. Since predictions regarding these two dimensions were based on Higgins’s theory and findings, the analysis of these measures was performed using the same method used by Higgins and his colleagues (see Higgins, Shah & Friedman, 1997, p.523). Thus, feedback-consistent emotional

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30 The N for all the analyses in this section was 130 (instead of 131), due to missing data.
change scores were computed for each participant for both the Cheerfulness-Dejection and the Quiescence-Agitation dimensions. Feedback-consistent emotional change involves feeling good following positive feedback, and feeling bad following negative feedback. For the *Cheerfulness-Dejection* dimension, feedback-consistent emotional change scores were calculated as follows: (a) for participants who received positive feedback: the sum of the Cheerfulness score minus Pre-Cheerfulness, and (reversed scored) the Dejection score minus Pre-Dejection; (b) for participants receiving negative feedback: the sum of the Dejection score minus Pre-Dejection, and (reversed scored) the Cheerfulness score minus Pre-Cheerfulness. For the *Quiescence-Agitation* dimension, feedback-consistent change scores were computed as follows: (a) in positive feedback: the sum of the Quiescence score minus Pre-Quiescence, and (reversed scored) the Agitation score minus Pre-Agitation; (b) in negative feedback: the sum of the Agitation score minus Pre-Agitation, and (reversed scored) the Quiescence score minus Pre-Quiescence.\(^3\) As noted above, it was predicted that feedback-consistent emotional change would differ as a function of the achievement goal condition. Performance-avoidance participants were expected to show most feedback consistent change on Quiescence-Agitation, the mastery group was predicted to show the most change on the Cheerfulness-Dejection emotions, while the performance-approach group was expected to exhibit intermediate levels on both emotional dimensions. Thus, an interaction between achievement goal (performance-approach, performance-avoidance, mastery) and type of emotional dimension (Cheerfulness-Dejection vs. Quiescence-Agitation) was anticipated.

\(^3\) Cheerfulness, Dejection, Quiescence and Agitation scores were obtained following feedback. The corresponding pre-feedback scores were obtained in the mood baseline questionnaire. The scales used were the original, theory-based, scales (see Appendix A) with one exception: the item 'relieved' was omitted from the Quiescence (and Pre-Quiescence) scale. A preliminary factor analysis showed that 'relieved' was more strongly associated with the Cheerfulness items than with the Quiescence items. Moreover, the reliability analysis confirmed that 'relieved' did not measure the same construct as the other Quiescence items, since the reliability increased when this item was excluded ($\alpha_{\text{with relieved}}=.78$, $\alpha_{\text{without relieved}}=.83$).
Quiescence-Agitation) was predicted. To test this hypothesis, a repeated measure analysis of variance with one between-subjects factor (achievement goal) and one within-subjects factor (type of emotional dimension) was performed on participants' feedback-consistent emotional change scores. This analysis did not yield the predicted interaction ($F<1$, n.s.). The only significant result was the main effect for type of emotional dimension, $F(1,127)=15.76$, $p<.0001$, which reflected the fact that everyone showed greater emotional change on the Cheerfulness-Dejection dimension compared to the Quiescence-Agitation dimension (including the performance-avoidance group). The means of feedback-consistent emotional change as a function of goal condition and emotional dimension are presented in Table 6. In Higgins, Shah & Friedman's data (1997, Study 4) movement on the Cheerfulness-Dejection dimension was greater for the promotion-framing condition (equivalent to performance-approach in the present study and, according to my prediction, should be even more true for the mastery group), while movement on the Quiescence-Agitation dimension was greater for the prevention-framing condition (equivalent to the performance-avoidance goal in the present study). However, as evident from Table 6, this pattern was not replicated in the present study. Instead, feedback consistent change on both emotional dimensions was greatest for the performance-avoidance group (prevention focus), and weakest for the performance-approach group, with the mastery condition somewhere in between. These differences between the goal conditions, however, were not statistically significant, although the approach-avoidance contrast (computed across both emotional dimensions) was close to significance ($F(1,127)=3.40$, $p=.07$).
Several additional analyses were also performed. First, the same analysis described above was also attempted with feedback-consistent change scores that included only the items ‘happy’ and ‘discouraged’ (for the Cheerfulness-Dejection scores), and the items ‘relaxed’ and ‘tense’ (for the Quiescence-Agitation scores). Since these were the exact same items used by Higgins, Shah and Friedman (1997, Study 4), it was thought that Higgins’s findings might replicate if only these four items, as opposed to multi-item scales, were used. However, Higgins’s findings were not replicated with these measures either. The analysis on these variables revealed exactly the same pattern as that described above for the multi-item variables. Second, since Higgins’s experiments did not include a condition equivalent in nature to a mastery orientation, the analyses on the multi-item and single-item measures reported above were also redone without the mastery group. However, these analyses did not replicate Higgins’s findings: the achievement goal by emotional dimension interaction was not significant in either analysis (F’s<1). Third, two separate analyses of covariance on the change scores in each emotional dimension, controlling for the change in the alternative dimension, were also attempted. These
analyses yielded no significant results. Fourth, separate analyses for the two emotional dimensions were also performed without covarying out the change on the other dimension. These analyses yielded a significant approach-avoidance effect on the Cheerfulness-Dejection dimension, $F(1,127)=4.10, p<.05$. In contrast to Higgins’s theory and previous findings and contrary to prediction, the performance-avoidance group evidenced greater change on this dimension than the performance-approach group. No other significant effects were found. 

Finally, a 3 (achievement goal) x 2 (feedback) analysis of variance was performed separately on each of the post-feedback affective measures (Cheerfulness, Dejection, Quiescence and Agitation – as opposed to feedback-consistent change scores). The corresponding pre-feedback scores were used as covariates in these analyses. None of the goal contrasts yielded significant effects on any of the affective measures. All the analyses revealed a highly significant feedback main effect in the expected direction: positive feedback produced higher scores than negative feedback on Cheerfulness ($F(1,123)=40.71, p<.000$) and Quiescence ($F(1,123)=10.42, p<.002$), whereas negative feedback produced higher scores than positive feedback on Dejection ($F(1,123)=69.56, p<.000$) and Agitation ($F(1,123)=27.88, p<.000$).

In sum, no matter how the data were analyzed, Higgins’ findings could not be replicated. There was no evidence for an achievement goal by type of emotional dimension interaction. Instead, all participants, including the performance-avoidance group, exhibited more feedback consistent change on Cheerfulness-Dejection emotions than on the Quiescence-Agitation dimension. Furthermore, it appears that the performance-avoidance group (prevention focus) showed the most feedback-consistent emotional change on both emotional dimensions, while the performance-approach group (Higgins’s promotion focus) evidenced the least change on both dimensions (the approach-avoidance contrast approached significance). The mastery group,
hypothesized in this study to have the ‘purest’ promotion focus, was in between the other two groups on both dimensions (instead of being the highest on Cheerfulness-Dejection and the lowest on Quiescence-Agitation, as predicted).

**Situational self-esteem.** To test the hypothesis that situational self-esteem would be less affected by feedback in the mastery group compared to both performance conditions, a feedback-consistent emotional change score was also computed for the self-esteem dimension. This was done as follows: (a) for participants in the *positive* feedback condition: the sum of the High Self-esteem score minus pre-feedback High Self-esteem, and (reversed scored) the Low Self-esteem score minus pre-feedback Low Self-esteem; (b) for participants in the *negative* feedback condition: the sum of the Low SE score minus pre-Low SE, and (reversed scored) the High SE score minus pre-High SE. A 3 (achievement goal) x 2 (feedback) analysis of variance performed on this feedback-consistent change variable yielded a significant feedback main effect, $F(1,124)=15.95, p<.0001$. This effect reflects the fact that there was more feedback-consistent change on self-esteem in negative than in positive feedback ($M_{positive}=0.63$, $M_{negative}=1.98$). No other significant effects were obtained on this measure. However, it should be noted that the groups’ means showed a rather interesting pattern of a goal by feedback interaction (see Figure 5). Although this interaction was not significant ($F(2,124)=1.75, p=.18$), it will be briefly described below for exploratory purposes. As can be seen from Figure 5, the performance-avoidance orientation had the highest cost in terms of self-esteem. This group demonstrated the least feedback consistent change in self-esteem following positive feedback.

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32 High and Low Self-esteem scores were obtained following feedback. The corresponding pre-feedback scores were obtained in the mood baseline questionnaire at the beginning of the experiment. The scales used were the original, theory-based scales (see Appendix A).
and the most change following negative feedback. However, counter to prediction, the group demonstrating the least overall change on self-esteem was the performance-approach group (and not mastery). The mastery group showed the highest feedback-consistent change in positive feedback (which is not necessarily an undesirable outcome), and was between the performance conditions in negative feedback. Thus, the capacity of a mastery goal to protect one's self-esteem from decreasing in reaction to failure was not supported by the results. Although these differences were not significant, it seems the self-esteem consequences of the different achievement orientations require further examination.

Figure 5

Feedback-Consistent Emotional Change on Situational Self-esteem as a Function of Experimental Condition
Separate Anovas were also performed on the High and Low Self-esteem scores (as opposed to the feedback-consistent change variable). The corresponding pre-feedback scores were used as covariates in these analyses. The Anova on the High Self-esteem measure yielded a significant approach-avoidance effect, $F(1,123)=4.08, p<.05$. This effect was due to the approach group being higher on positive self-esteem than the avoidance group. The ancillary (non-orthogonal) planned contrast comparing the performance-avoidance and the mastery groups also yielded a significant effect, $F(1,123)=3.90, p<.05$, with the mastery group being higher on positive self-esteem than performance-avoidance. These results suggest that a performance-avoidance goal put people at a disadvantage in terms of their tendency to feel good about themselves. Compared to the performance-avoidance group, performance-approach and mastery participants felt more competent and proud following both positive and negative feedback. These results are consistent with the (non-significant) results from the feedback consistent change variable reported above. In addition, there was also a significant feedback main effect, $F(1,123)=70.16, p<.0001$, with the expected pattern of High Self-esteem feelings being stronger following positive than negative feedback. No other significant effects were obtained on High Self-esteem. The Anova on the Low Self-esteem measure yielded only a significant feedback effect, $F(1,123)=38.94, p<.0001$, with the expected result of Low Self-esteem feelings being stronger in negative compared to positive feedback. Although the performance-avoidance group was higher on this measure compared to the other conditions ($M_{\text{avoidance}}=2.22$, $M_{\text{approach}}=1.89$, $M_{\text{mastery}}=2.07$), none of the goal contrasts reached statistical significance.\textsuperscript{33} The disadvantage of the performance-avoidance goal

\textsuperscript{33} The F-values for the contrasts were as follows: for the performance-mastery contrast $F(1,123)=.01$, n.s.; for the approach-avoidance contrast $F(1,123)=2.02, p=.16$. 
was therefore significant only with respect to High Self-esteem, but not Low Self-esteem, emotions.

To summarize, the results on the post-feedback mood measures were generally not consistent with predictions. Higgins's findings were not replicated, and the predictions based on them were not supported either. The pattern of results on the self-esteem dimension was also different from the hypothesized pattern. However, most of the counter-prediction effects on these measures did not reach statistical significance. Thus, the affective consequences of the different achievement orientations remain unclear. Further research will be required in order to elucidate this issue.

Correlations involving the post-feedback affective measures. Participants' scores on the six post-feedback mood subscales (Cheerfulness, Dejection, Quiescence, Agitation, High SE, Low SE) were substantially inter-correlated. Table 7 presents the correlations between the various mood subscales. As evident from the table, the positive emotions were rather highly and positively correlated with one another (r's ranged from .57 to .75, p's<.01), and so were the negative emotions (r's ranged from .76 to .87, p's<.01). Furthermore, the positive and negative emotions correlated moderately and negatively with one another (r's ranged from -.38 to -.51, p's<.01).

34 The pattern and the significance of the correlations were quite similar in both feedback conditions. Thus, Table 7 presents the correlations across feedback conditions.
Table 7

*Intercorrelations of All Post-Feedback Mood Measures*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Agitation</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Quiescence</td>
<td>-.51**</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Dejection</td>
<td>.78**</td>
<td>-.44**</td>
<td>--</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Cheerfulness</td>
<td>-.40**</td>
<td>.68**</td>
<td>-.46**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>5. Low Self-Esteem</td>
<td>.76**</td>
<td>-.41**</td>
<td>.87**</td>
<td>-.41**</td>
<td>--</td>
</tr>
<tr>
<td>6. High Self-Esteem</td>
<td>-.38**</td>
<td>.57**</td>
<td>-.49**</td>
<td>.75**</td>
<td>-.51**</td>
</tr>
</tbody>
</table>

$N=130$. ** $p < .01$.

In addition, the mood sub-scores correlated with many of the intrinsic motivation and performance-related outcome measures. However, unlike the intercorrelations among the various mood scales, it seems much of the variance shared by the mood measures and the other outcome measures was due to the influence of feedback. When correlations were computed separately for positive and negative feedback, fewer of the relationships were significant. Within the intrinsic motivation variables, Free-play significantly correlated with Dejection in positive feedback ($r=.26$, $p<.05$), and with the Self-esteem scales in negative feedback (with High SE, $r=-.31$,

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Although it should be noted that the N's were, of course, reduced when the correlations were computed separately for each feedback condition, and hence the likelihood of finding significant correlations was also reduced. (N's were 66 in positive feedback and 64 in negative feedback. For correlations involving Free-play, however, N's were 65 and 64 for positive and negative feedback, respectively).
p<.05, and with Low SE, r=.28, p<.05). Enjoyment correlated significantly and negatively with Agitation in positive (r=-.36, p<.005) but not in negative feedback (r=-.09, n.s.). Enjoyment was also positively correlated with Cheerfulness, but once again only in positive (r=.38, p<.005) and not in negative feedback (r=.19, p=.13).

Thus, high levels of Free-play were associated with negative affective states in both feedback conditions, which suggests, once again, that Free-play is not a pure measure of intrinsic motivation. Enjoyment, on the other hand, was associated with a positive affective state (although this was true in positive feedback only), which suggests it was better in tapping into the construct of intrinsic motivation. There were no other significant correlations between any intrinsic motivation and mood outcome measures.36

With regard to the correlations between the mood scores and the performance-related outcome measures, once again only few of them were significant. In positive feedback, Predicted Percentile was positively correlated with Cheerfulness (r=.26, p<.05) and with High SE (r=.35, p<.005), and Challenge positively correlated with Quiescence (r=.28, p<.05) and with High SE (r=.32, p<.01). In negative feedback, the only significant correlation was between the estimated difficulty level of the previous set and Dejection (r=.27, p<.05). There were no other significant correlations. The scarcity of significant correlations between the two groups of variables suggest that one's responses on performance-related measures may not be strongly influenced by his or her affective state (at least not in a simple, direct manner).

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36 It should be noted, however, that the item 'relieved' was positively correlated with all three intrinsic motivation measures in the positive feedback condition (r's=.28, .27, .36, p's<.05, .05, .01 for Enjoyment, Free-play and Follow-up, respectively). None of the correlations with 'relieved' were significant in negative feedback).
Correlations Between Process and Outcome Measures

Within the intrinsic motivation indicators, Enjoyment and Follow-up correlated with some of the process measures in theoretically consistent ways (the correlations are presented in Table 8). Thus, in accordance with the processes posited to lead to intrinsic motivation, both measures were negatively correlated with Feeling Externally Controlled, and positively correlated with Positive Anticipation and Task Involvement. Free-play, on the other hand, was not correlated with any of the process measures, which further suggests that this measure may not reflect true intrinsic motivation.

Table 8

Correlations of the Process Measures with the Intrinsic Motivation Outcome Measures

<table>
<thead>
<tr>
<th></th>
<th>Enjoyment</th>
<th>Free-play</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling externally controlled</td>
<td>-.34**</td>
<td>.06</td>
<td>-.24**</td>
</tr>
<tr>
<td>Positive anticipation</td>
<td>.58**</td>
<td>.09</td>
<td>.18*</td>
</tr>
<tr>
<td>Negative anticipation</td>
<td>-.03</td>
<td>.16</td>
<td>.06</td>
</tr>
<tr>
<td>Task involvement</td>
<td>.53**</td>
<td>-.01</td>
<td>.38**</td>
</tr>
<tr>
<td>Thoughts about performance</td>
<td>.14</td>
<td>.08</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note. N=131 for Enjoyment and Follow-up, and N=129 for Free-play.
* p < .05, ** p < .01.

37 This was true in all the experimental conditions, except for one unexpected correlation in the performance-avoidance group receiving negative feedback. In this condition, Free-play significantly correlated with Positive Anticipation (r=.60, p<.01). This finding is surprising in light of the evidence suggesting that internal pressure, rather than true intrinsic motivation, underlay Free-play in this group (see pp. 50, 56-57). Hence, this correlation is difficult to interpret.
The process measures included in this study were generally not significantly correlated with any of the performance-related outcome measures, with the exception of Feeling Externally Controlled, which negatively correlated with Predicted Percentile \((r = -0.20, p<0.05)\) and with Challenge \((r = -0.27, p<0.01)\). Thus, the processes underlying the performance-related variables still require further investigation. Feeling Externally Controlled appears to be a relevant process variable, but other processes, not included in the present experiment, are likely operating as well. In addition, the scarcity of correlations between the process measures and the performance-related measures provide further evidence for the discriminant validity of the performance-related measures and the intrinsic motivation indicators, since the latter did correlate in meaningful ways with some of the process measures.

The affective outcome measures were extensively intercorrelated with some of the process measures in meaningful ways. In general, Feeling Externally Controlled, Negative Anticipation and Thoughts about Performance were positively correlated with the negative emotions, and negatively correlated with the positive emotions. Positive Anticipation, on the other hand, correlated positively with the positive emotions (and was unrelated to the negative emotions). Task Involvement was a notable exception, as it was not related to any of the post-feedback mood variables. This is interesting because Task Involvement is conceptualized in the literature as reflecting an affective construct (e.g. Csikszentmihalyi, 1975), and thus one could have expected it to be associated with the affective reactions to feedback. These correlations are presented in Table 9.
Table 9

Correlations of the Process Measures with Post-Feedback Mood Measures

<table>
<thead>
<tr>
<th></th>
<th>Cheerfulness</th>
<th>Dejection</th>
<th>Quiescence</th>
<th>Agitation</th>
<th>High SE</th>
<th>Low SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling externally controlled</td>
<td>-.23**</td>
<td>.50**</td>
<td>-.31**</td>
<td>.67**</td>
<td>-.18*</td>
<td>.55**</td>
</tr>
<tr>
<td>Positive anticipation</td>
<td>.44**</td>
<td>.01</td>
<td>.21*</td>
<td>-.02</td>
<td>.33**</td>
<td>.00</td>
</tr>
<tr>
<td>Negative anticipation</td>
<td>-.19*</td>
<td>.45**</td>
<td>-.37**</td>
<td>.57**</td>
<td>-.26**</td>
<td>.52**</td>
</tr>
<tr>
<td>Task involvement</td>
<td>.10</td>
<td>.02</td>
<td>.01</td>
<td>-.15</td>
<td>-.03</td>
<td>-.03</td>
</tr>
<tr>
<td>Thoughts about performance</td>
<td>-.15</td>
<td>.25**</td>
<td>-.22*</td>
<td>.23**</td>
<td>-.23**</td>
<td>.25**</td>
</tr>
</tbody>
</table>

N=130.
* p < .05, ** p < .01.

To summarize, the process measures assessed in the present experiment were related in theoretically meaningful ways to the intrinsic motivation indicators (except Free-play) and to the affective outcome measures. However, these process measures were mostly uncorrelated with the performance-related measures. Further research examining the processes underlying the performance-related variables is thus necessary.
Discussion

Summary of the Present Findings

The results of this study were generally consistent with its predictions (though many did not reach statistical significance). Most of the dependent measures examined in the study showed more positive outcomes for the mastery orientation compared to both performance goals. Thus, unlike Elliot and Harackiewicz’s (1996) findings, in which the performance-approach and the mastery orientations had similar and more positive outcomes compared to the performance-avoidance goal, in the present study the performance-approach goal was generally similar in outcomes to performance-avoidance, while the mastery orientation had more positive outcomes than either. The advantage of a mastery goal over performance-approach and performance-avoidance goals was demonstrated in three groups of measures – pre-feedback process measures, intrinsic motivation indicators and performance-related measures. In the pre-feedback process measures, mastery participants felt significantly less externally controlled when approaching the social perception task and tended to experience less negative anticipation (anxiety, worry) compared to both approach and avoidance performance participants. They also approached the task with more positive anticipation and were more task involved while working on it, although these differences did not reach statistical significance. Following feedback, mastery participants demonstrated greater intrinsic motivation for the task. They reported a significantly higher level of interest and enjoyment in the task than either performance group. In addition, mastery participants tended to express greater willingness to participate in a follow-up study on the task and were more likely to engage in the task during a free-choice period (as opposed to not working on it at all), although these differences only approached significance. Moreover, as hypothesized, the mastery orientation buffered against the detrimental effects of negative
feedback on intrinsic motivation. While the performance groups tended to respond differently on the intrinsic motivation measures as a function of feedback (particularly performance-avoidance), the mastery group tended to respond more similarly and demonstrate high intrinsic motivation regardless of the feedback condition. With regard to the performance-related measures, mastery participants were more optimistic about their performance on a future task-set than either performance group, following both positive and negative feedback. Thus a mastery goal promoted greater self-efficacy and confidence in one’s ability compared to a performance goal, whether approach or avoidance. Mastery participants also demonstrated a greater degree of challenge seeking compared to the performance groups, by requesting somewhat higher difficulty-levels for an upcoming task-set, although this difference fell short of statistical significance. Other performance-related measures, such as predicted percentile and interest in explanations about the photos, showed similar patterns, but did not reach significance either.

The two performance groups generally produced similar (i.e. equally less beneficial) outcomes on the various process and outcome measures, although the performance-avoidance goal was more detrimental at times. The similarity between the outcomes of the two performance goals is, once again, largely inconsistent with Elliot and Harackiewicz (1996), who found the performance-approach goal to be significantly more beneficial than the performance-avoidance goal on most of the measures they collected.

The only group of measures in which the advantage of a mastery goal has not been established is the post-feedback affective measures. In contrast to the other groups of measures, there was no evidence that a mastery goal is associated with more favorable affective and self-

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38 For instance, performance-avoidance participants were lower than the performance-approach group on positive self-esteem emotions. There was also evidence that the performance-avoidance group showed pressured persistence during free-play, whereas the performance-approach participants did not.
esteem outcomes than performance goals. It should be noted, however, that these measures did not provide any significant evidence to the contrary, either. Rather, most of the affective outcome measures did not produce significant effects. Thus, the affective consequences of the different achievement goals remain an open question, and deserve further examination. In addition, a secondary purpose of this study pertaining to the affective outcome measures was also not achieved in the present study. This secondary purpose was to map Higgins's regulatory-focus theory onto Elliot’s tripartite model of achievement goals, by replicating and extending Higgins’s findings regarding the emotional consequences associated with the different orientations/regulation forms. Despite the similarity of the present experimental procedure to those used by Higgins (particularly Higgins, Shah & Friedman, 1997, Study 4), Higgins’s findings could not be replicated and the hypotheses extending them were not supported either. The theoretical implications of these results are discussed below. The implications of the main findings, namely the advantages of a mastery goal over both performance-approach and performance-avoidance goals, will be considered first.

Implications for Elliot’s Tripartite Model of Achievement Goals

As noted above, the findings of the present study are inconsistent with Elliot and Harackiewicz’s (1996) findings. Could this apparent contradiction be reconciled? And, more importantly, could it further our understanding regarding the tripartite model of achievement goals? There are three main factors that differentiate the design and procedure of the two studies, and each of them will be considered below in an attempt to explain the inconsistent findings. First, Elliot and Harackiewicz’s participants all received positive feedback regarding their performance, whereas the present study included both positive and negative feedback conditions.
However, this factor cannot fully explain the difference in the results. Although in the present study the advantage of the mastery goal was usually more pronounced under negative feedback, it was also evident in positive feedback. In fact, in most of the measures the goal by feedback interaction was not significant, i.e. the goal condition produced a similar pattern in both feedback conditions, with the feedback manipulation producing only a main effect. It is still possible that had Elliot and Harackiewicz included a negative feedback condition in their experiment, the advantage of a mastery goal would have been revealed in their study as well. However, the contradiction between their findings and the present findings in the positive feedback condition must be explained by other factors.

The second factor differentiating the two studies is the exact wording of the goal manipulations. This difference pertains to the manipulations of the mastery orientation as well as the performance goals. In the manipulation of the mastery goal, participants in both studies were told that the purpose of the study was “to collect data on college student’s reaction to [the task]”. However, in the present study mastery participants were also told that “your goal for today’s session is to learn new things about social perception, and to develop your own skills in this domain”, while Elliot and Harackiewicz participants were told no such thing. Thus, it is possible that the mastery manipulation used in the present study was more potent, and hence more effective in promoting the adoption of a mastery goal by the participants. If the mastery participants in Elliot and Harackiewicz ‘s study were indeed less mastery-oriented compared to the present study, this could perhaps explain the failure of the former study to find a difference between the mastery and the performance-approach groups. Since the manipulation checks in

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39 This discussion refers to Elliot and Harackiewicz' (1996) Experiment 2, which is more similar to the present experiment.
both studies consisted only of examining participants understanding and memory for what they were told, rather than the nature of the goals they adopted, this alternative explanation cannot be directly verified. In any case, the manipulation used in the present study is less ambiguous and more specific than Elliot and Harackiewicz’s manipulation, and thus seems more likely to have produced a ‘true’ mastery orientation. In addition to the mastery manipulation, the manipulations of the performance goals in the two studies were also slightly different. In both studies, performance participants were told that the purpose of the study was to collect data on the task by comparing college students to one another in their ability/performance. Moreover, in both, the performance on the task was said to reflect one’s ability (in Elliot and Harackiewicz this was stated explicitly, and in the present study it was implied). However, there are two differences between the manipulations used in the studies. First, as will be explained below, in the present study the participants were given an explicit performance-approach or performance-avoidance goal, whereas Elliot and Harackiewicz did not provide explicit goals, but rather used a more implicit manipulation. Second, in the present study participants in both performance conditions were given an explanation of how their goal would be achieved and not achieved, while Elliot and Harackiewicz provided an example only for one outcome (achieving a performance-approach goal and failing to achieve a performance-avoidance goal). Thus, in Elliot and Harackiewicz’s study the performance-approach manipulation consisted only of the sentence: “For instance, if you find more Ninas than a majority of students, you will demonstrate that you have good… ability”. The performance-avoidance manipulation was similar, except the participants were told that if they find fewer Ninas than the majority of student, they would

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40 These differences are mainly the result of trying to make the manipulations in the present study more like Higgins, Shah and Friedman’s (1997, Study 4) manipulations.
demonstrate poor ability. In contrast, performance-approach participants in the present study were explicitly told that their goal is "to demonstrate that you have good social perception skills". It was then added that if they score higher than a majority of students, i.e. get a certain number of correct answers, they would demonstrate that they have high ability, whereas if they don’t, they would not demonstrate high ability. Similarly, performance-avoidance participants were told that their goal is "to demonstrate that you do not have poor social perception skills". It was also explained that if they scored lower than a majority of students, i.e. got a certain number of incorrect answers, they would demonstrate that they had poor ability, whereas if they didn’t, they would not demonstrate poor ability. Thus, on the one hand, participants in the present study were given a clear and explicit goal, which should increase the likelihood of finding a difference between the two performance-goals. On the other hand, while Elliot and Harackiewicz focused participants' attention on a single outcome (either demonstrating competence or incompetence), participants in the present study were also made aware of the possibility of not obtaining that outcome (not demonstrating competence/incompetence); thus, one could argue that the manipulations in the present study obscured the difference between the two performance goals. If the two performance goals were indeed not properly differentiated in the present study, this could explain why the two performance groups did not produce significantly different outcomes on most of the measures. However, it is my opinion that the present study’s performance manipulations did in fact produce the two distinct intended achievement goals. Although, once again, the manipulation checks cannot provide direct evidence for that, because they evaluated the participants’ memory for what they were told rather than the actual nature of the goals they adopted, there are nevertheless strong indications that the manipulations were valid and effective.
First, as noted above, participants in the present experiment were presented with a specific approach or avoidance goal, which they were directly encouraged to adopt. Such explicit specification of the goal increases the likelihood that the participants indeed formed distinct goals. Second, the wording used in the performance manipulations focuses participants’ attention on a particular type of outcomes — positive outcomes in performance-approach, and negative outcomes in performance-avoidance. There is no mention of the possibility of failure in the performance-approach manipulation (only of not demonstrating success), and similarly, there is no reference to possible success in performance-avoidance (only the avoidance of failure). Moreover, the more important outcome (success in approach and failure in avoidance) was always mentioned first. Thus, clearly, participants in the two groups were led to concentrate on different outcomes. Third, although the approach-avoidance contrast was usually non-significant, it did produce significant results on some of the measures (e.g. the Cheerfulness-Dejection emotional dimension, High Self-esteem and Satisfaction with score). Moreover, the two goal conditions produced a strikingly different pattern of results on Follow-up and on the continuous Free-play measure (as well as on other, less important, measures). Finally, the approach and avoidance performance manipulations used in the present study are practically identical to Higgins’s manipulations of promotion and prevention goals, which were shown in previous studies to produce distinct outcomes (e.g. Higgins, Shah & Friedman, 1997, Study 4). Thus, it appears the difference in findings between Elliot and Harackiewicz (1996) and the present study cannot simply be attributed to the small variations in the wording of the goal manipulations. Other factors are required in order to explain why the present study found the mastery goal to be more beneficial than either performance goal, whereas the former study did not.
Aside from the inclusion of negative feedback and the differences in the wording of the manipulations, there is a third factor which differentiates the present study from Elliot and Harackiewicz (1996), and it appears this factor can account, at least in part, for the conflicting findings. I am referring to the self-relevance of the task employed in the two studies. Elliot and Harackiewicz framed their task as a game, a puzzle. This game was not said to involve any valued skills or abilities, except for the specific ability to solve this type of puzzle. The task itself—a hidden figure puzzle—was most likely perceived by the participants as a fun activity, not important to one's sense of self in any way. In such a benign context, it seems very likely that the costs of a performance orientation (particularly performance-approach) would indeed be minimal. Demonstrating competence on such a task can be easily discounted as unimportant, since the task does not imply anything regarding aspects that are truly important to the individual. In contrast to Elliot and Harackiewicz (1996), participants in the present experiment were presented with a much more self-relevant context. The research group was said to investigate ‘interpersonal relationships and social interaction’ (as opposed to ‘game playing and puzzle solving’). The task was a social-perception task, which involves the detection of non-verbal cues, and participants were told that the skills involved in this task are central for understanding other people’s true feelings and thoughts. Moreover, participants indeed indicated that they valued social perception skills (see the results on the importance item, p. 35). Thus, it seems likely that the difference in findings between Elliot and Harackiewicz and the present study is due, at least in part, to the task being more important and self-relevant in the present study. With higher self-relevance, it is more likely that the disadvantage of a performance goal compared to a mastery goal would be revealed. Participants can no longer discount the performance goal as unimportant, and thus processes such as performance anxiety, evaluative
pressure and feelings of being externally controlled may come into play and lead to various negative outcomes. A mastery goal, on the other hand, decreases the occurrence of such detrimental processes (even when the task is highly self-relevant), and can thus lead to more favorable outcomes than either performance goal.

Thus, it appears that when integrating the present study with Elliot and Harackiewicz (1996), the self-relevance of the task emerges as an important determinant of the consequences of the three achievement goals, particularly of performance-approach. Under the benign context created by Elliot and Harackiewicz, the performance-approach goal was similar to the mastery goal in positive outcomes, while the performance-avoidance goal was associated with poorer outcomes. In the self-relevant context created in the present study, the performance-approach goal was usually similar to performance-avoidance, which both had poorer outcomes than the mastery goal. In conclusion, the two studies combined provide support for Elliot’s tripartite model of achievement goals, but also emphasize the importance of ‘context variables’ (such as the self-relevance of the task), in determining the outcomes of the three goals and the relationship between them. Thus, despite the apparent contradiction between them, the present findings and Elliot and Harackiewicz’s findings may both be valid, but they apply to different situations. However, since in real-life people are very often presented with self-relevant tasks (e.g. at school, work, interpersonal relationships, etc.), the present findings seem to be generalizable to a wider range of important domains and situations than Elliot and Harackiewicz’s findings.
Implications for Higgins’s Regulatory-Focus Theory

As noted earlier, despite the striking similarity between the present study’s performance goals manipulations and Higgins’s promotion and prevention manipulations (Higgins, Shah & Friedman, 1997, Study 4), Higgins’s findings were not replicated in the present study. Thus, there was no evidence in the present study for Higgins’s assertion that a promotion goal (performance-approach) differentially leads to cheerfulness-dejection emotions and a prevention goal (performance-avoidance) to quiescence-agitation emotions. Instead, both approach and avoidance groups showed more feedback consistent emotional change on the cheerfulness-dejection dimension than on the quiescence-agitation emotions. Moreover, the performance-avoidance (prevention) group showed more feedback consistent emotional change on both emotional dimensions compared to the performance-approach (promotion) group. These results are clearly inconsistent with Higgins’s theory and previous findings (Higgins, Shah & Friedman, 1997, Study 4). The present study’s hypotheses extending Higgins’s theory by adding the mastery goal were also not confirmed. Although a single study cannot break a theory, it is worth noting that most of the evidence in support of Higgins’s hypotheses comes from Higgins and his colleague’s own studies.41 In fact, some studies conducted by different researchers have also failed to find the pattern of emotional outcomes postulated by Higgins (Szymanski & Cash, 1995; Tangney et al., 1998). Thus, ‘independent’ replications of Higgins’s findings seem a desirable objective, and the present study did not provide such replication. It is possible, however, that like the discrepancy between the present study and Elliot and Harackiewicz

41 Most studies on the different emotional outcomes associated with the two goals took an individual-difference approach, rather than experimentally manipulating the two goals (as in the present study and in Higgins, Shah & Friedman, 1997, Study 4). These studies examined the emotional consequences of ideal and ought self-discrepancies, which map onto promotion and prevention forms of regulation, respectively.
(1996), the contradiction between the present study and Higgins's findings can be explained by the difference in the self-relevance of the tasks used. The context in Higgins, Shah and Friedman's (1997) Study 4 was extremely benign. The task employed (memorization of letter strings) was completely irrelevant to one's self, and the outcomes of successful and unsuccessful performance were trivial (gaining or losing $1). Clearly, this is completely different from the highly self-relevant context created in the present experiment. It is possible, then, that the emotional consequences of the two forms of self-regulation are affected by the importance and self-relevance of the goal, and hence the failure to replicate Higgins's findings in the present study. Although Higgins's regulatory-focus theory makes no mention of 'context' variables like the self-relevance of the task, it is quite possible that such variables influence self-regulation processes in important ways. Only further research can determine if these variables indeed play a role in self-regulation, and the exact nature of that role.

Implications for the Operationalization of Intrinsic Motivation

Three intrinsic motivation indicators were used in the present study, and as pointed out in the Results section, they did not always produce compatible results. This was particularly evident in the performance-avoidance group receiving negative feedback. Although the differences between this group and the others were usually not significant, the discrepant pattern exhibited by this group warrants a closer examination. The performance-avoidance group receiving negative feedback was the lowest on self-reported interest and enjoyment, but nevertheless showed the most persistence on the task during free-play (on the continuous measure). Moreover, these participants also expressed high willingness to participate in a follow-up study on the task (compared to their counterparts receiving positive feedback). Thus, this group
evidenced a pattern of discrepancy: low responses on the self-report indicator (Enjoy) coupled high responses on the behavioral (Free-play) and behavioral inclination (Follow-up) indicators. This pattern suggests that this group’s elevated responses on Free-play and Follow-up were most likely not the result of intrinsic motivation, but rather reflected *internal control* – an “internal pressure to achieve some standard or outcome” (Ryan, Koestner & Deci, 1991, p. 189). I concur with Anderson & Rodin’s (1989) formulation of intrinsic motivation as involving the following three components: (1) an elevated level of activity (2) which occurs in the absence of observable outside demands, and (3) is accompanied by internal satisfaction or positive affect, which indicate that the individual’s self-directed goals are being met (Anderson & Rodin, 1989, p. 452-453). The third element is crucial; if one engages in an activity not because of self-generated goals but in order to achieve the introjected goals of others, internally-controlled motivation ensues, and the individual would be less likely to experience the activity as enjoyable (Ryan, Koestner & Deci, 1991, Anderson & Rodin, 1989). I believe the present study supports this notion of intrinsic motivation. The mastery group (in both positive and negative feedback) exhibited all three elements, thus evidencing a high level of true intrinsic motivation. The performance-avoidance group in the negative feedback condition exhibited high activity level and decreased enjoyment, and hence most likely experienced internal control. Although these participants were *internally* motivated to act (they performed these activities voluntarily, in the absence of environmental constraints), their actions did not reflect *intrinsic motivation*, since the third component – internal satisfaction – was missing. Finally, the performance-avoidance group receiving positive feedback and both performance-approach groups also exhibited low intrinsic motivation, but for a different reason. The very first element – a high activity level, which as noted above is a necessary component of intrinsic motivation (as well as internal control), was
absent in these groups. When given the opportunity to engage in the task during a free-choice period, these participants evidenced low levels of task engagement compared to the other groups, thus demonstrating low internal motivation for the task. Interestingly, the differences between the patterns of means on the intrinsic motivation measures evidenced by the different groups did not translate into comparable differences in the correlations between the different measures.

Judging from the patterns of means and from previous findings (Ryan, Koestner & Deci, 1991), one could have expected Enjoy and Free-play to correlate positively in the mastery condition, and to be negatively correlated in the performance-avoidance group receiving negative feedback. However, this pattern did not emerge.42 A theoretically meaningful pattern of correlations between Enjoy and Follow-up was not evident either. Thus, further research will be required in order to determine if the theory-based correlations pattern can indeed be observed. However, the correlational issue aside, I believe the present study provides an important conclusion regarding the operationalization of intrinsic motivation. The present study clearly illustrates that when investigating intrinsic motivation, one should not draw conclusions based on any single dependent measure. In order to arrive at valid conclusions that intrinsic motivation occurred, the pattern of responses on at least two measures must be examined – one measure tapping internal satisfaction (e.g. enjoyment) and the other assessing behavior (or a behavior-related construct). Only high responses on both of the measures indicate that intrinsic motivation was indeed present.

42 In fact, there was even evidence to the contrary. Enjoy and Free-play were significantly correlated only in the performance-avoidance group receiving negative feedback, and this correlation was positive (see p. 46).
Directions for Future Research

Although much research evidence has been accumulated already regarding mastery and performance achievement goals and their effects on various aspects of experience, most of this research used the dichotomous distinction between the two types of goals. The more fine-grained classification of achievement goals suggested by Elliot (Elliot & Harackiewicz, 1996; Elliot, 1997) is relatively new, and thus so far only a handful of studies have examined this more complex model. These studies (including the present one) seem to suggest that Elliot’s tripartite model can indeed further our understanding of achievement goals. However, much empirical research is still required in order to establish the usefulness of this framework and to determine its specific contributions. There are many interesting avenues that future research on the tripartite model might take; several promising research directions are discussed below.

First, it has been suggested above that the difference in findings between the present study and Elliot and Harackiewicz (1996) could be attributed to differences in the self-relevance of the tasks employed in the two studies. This hypothesis merits empirical examination, since it has important theoretical implications. That is, it is quite possible that the consequences of the three achievement goals and the relationship between them depend on the context in which these goals are adopted. Thus, the three goals may not always produce the same pattern of results, but rather the pattern produced may depend on other conditions. To examine this issue empirically, the three achievement goals and the self-relevance of the task should be manipulated within the same experiment. This would make it possible to observe whether or not under conditions of low self-relevance the performance-approach group is similar in outcomes to the mastery group (as in Elliot and Harackiewicz, 1996), whereas in high self-relevance the performance-approach condition is closer to performance-avoidance (as in the present study). Such pattern of results
would confirm that the inconsistent findings between the two studies were due to differences in
the self-relevance of the tasks used, and would establish the self-relevance of the task as an
important determinant of the consequences of the different achievement goals. Moreover, if both
positive and negative feedback would be added to the experiment suggested above, even more
precise conclusions could be drawn regarding the tripartite model. For instance, it is possible that
when the task is low on self-relevance, a performance-approach goal would have similar
outcomes to a mastery goal in positive feedback, but poorer outcomes than mastery in negative
feedback. Under conditions of high self-relevance, on the other hand, a mastery goal is likely to
be more beneficial than either performance goal in both positive and negative feedback (as
demonstrated in the present study). Manipulating the achievement goals, self-relevance and
feedback in the same study would enable the examination of such prediction, and could therefore
provide valuable information.

Second, even within a self-relevant context, much empirical research is still needed before
a clear and well-defined account of the three achievement goals can be reached. The evidence
gathered in the present study provide only an outline – a sketch of the final picture. Future
research is needed in order to add the missing contours and details. There is a need to better
define the three goal-oriented states and their consequences with the types of variables employed
in the present study as well as other measures. We need to better understand what people in these
states are trying to do, and how they feel while trying to do it. Although some of the measures in
the present study yielded clear findings regarding these questions (e.g. Feeling Externally
Controlled, Enjoyment), many of the variables did not produce such compelling results. For
example, the Competence Valuation items yielded unexpected (although insignificant) pattern of
results. Future research should examine if these findings can be replicated, and if so, whether
they provide any insight regarding the goal-oriented states, or merely reflect participants’ psychological reactance to the manipulations and questions. Moreover, the post-feedback affective measures also did not produce the expected pattern. Further examination of these variables can reveal whether or not a mastery orientation provides an advantage in terms of emotional response to feedback (e.g. buffers against a decline in self-esteem). Or, alternatively, it may even be possible that the other advantages of the mastery orientation actually come at the cost of negative affect. Although favorable outcomes for the mastery orientation would seem more consistent with the main findings of the present study (on Enjoy, predicted Score, etc.), the present results on the affective outcome measures were very ambiguous, and thus more research will be necessary in order to answer these questions. Furthermore, many of the measures in the present study that did produce the predicted pattern of results were very far from significance (e.g. Positive Anticipation, Task Involvement, Thoughts about Performance). Only further research can reliably determine whether the different goal-oriented states affect these variables in the same manner that was predicted and found (although not significantly) in the present study. Perhaps more subtle measures of affect, thoughts and goals would prove more successful at tapping the effects of the different goal orientations. For instance, open-ended measures like thoughts-listing or even projective measures such as sentence or story completion may be particularly suitable for reflecting participants’ inner states. Compared to the rating scales employed in the present study, such measures could provide richer data, possibly less biased by social desirability, and thus may have the potential to elucidate some of the open issues.

In addition to the need to better characterize the intentions, thoughts and feelings associated

43 Recall, for instance, that the mastery participants tended to be less satisfied with their score than the performance participants (see Footnote 18 on p. 36).
with the three achievement goals, the more 'external' effects of these goals also require further examination. Most of the behavior and performance-related measures obtained in the present study yielded non-significant results (although their pattern of means was usually consistent with predictions). Future research is necessary to determine whether the achievement goals indeed influence these variables, and if so, whether this influence is consistent with the non-significant results obtained in the present study. In addition, the effects of the achievement goals on actual performance are an intriguing topic for future research. It should be noted that performance is not a single outcome, but rather can be assessed using various types of tasks and criteria. Thus, it seems unlikely that the three goals would always produce the same performance outcomes; rather, the performance consequences of the goals most likely depend on the way in which performance is measured. Different achievement goals probably facilitate (and inhibit) performance on different types of tasks. For example, it seems likely that a mastery goal could facilitate performance on those tasks that require more in-depth processing (e.g. complex, open-ended tasks; tasks that require creativity, etc.), since a mastery orientation, but not performance goals, can reduce performance anxiety, feelings of external control and other processes that greatly interfere with deep processing. On the other hand, performance goals could facilitate achievement on tasks that require shallow processing (e.g. simple, boring tasks; tasks that require speed, etc.), since anxiety and pressure could increase persistence on those tasks without compromising successful performance. Such performance effects need to be systematically explored before specific conclusions regarding their nature could be drawn.

Finally, other kinds of outcomes, not considered in the present study, could also contribute to our understanding of the tripartite model. A particularly fascinating type of consequences is the *interpersonal* outcomes of the different achievement goals. How do the three goals affect
people's social interactions? This could be examined with regard to pro-social as well as 'anti-social' behaviors, cognitions and affect. For instance, it seems reasonable that a mastery orientation would promote pro-social outcomes to a greater extent than performance goals, since a mastery orientation decreases feelings of anxiety, competition, and external control that are largely inconsistent with pro-social outcomes. Performance goals, on the other hand, are associated with a more competitive, ego-involved state, and could therefore enhance anti-social outcomes. Thus, for example, a mastery goal might promote people's interest in helping others and collaborating with them, their empathic concern for peers who do poorly, and their tendency to feel happy for others who do well. Performance goals, on the other hand, might increase people's tendency to feel threatened by others, wish others would fail, withhold helpful information from others and devaluate others. Moreover, it is possible that a performance-avoidance orientation would be somewhat more detrimental than a performance-approach goal in this context. Exploration of those as well as other interpersonal variables can promote our understanding of how achievement goals affect not only the individual, but also his or her social environment.

In conclusion, the study of achievement goals involves fascinating theoretical issues, from self-regulation and motivated behavior through affect and self-esteem to social interaction. In addition to its theoretical value, however, this area of research also has numerous practical applications. Whether in the classroom, workplace, interpersonal relationships or leisure activities, whenever individuals are striving to be competent achievement goals guide their behavior, cognition and affect. Thus, research findings in this area have important implication for everyday life. If, as the results of the present study suggest, mastery goals are truly more advantageous than performance goals, it seems individuals in various real-life contexts can
greatly benefit from adopting mastery goals. Teachers, employers and coaches should thus use methods that promote and foster mastery rather than performance goals. Future research will determine if mastery goals are indeed more beneficial than approach and avoidance performance goals as suggested by the present study, and will help define the conditions and the range of outcomes in which this advantage is most pronounced.
References


Appendix A
Mood Scales

Note: items marked with * were excluded from the scale in the final analysis.

The Different Mood Sub-scales:

1. Feeling Externally Controlled: pressured, forced, manipulated, annoyed, constrained*, and in control* [reversed].
3. Negative Anticipation: worried, nervous, concerned, tense, uneasy, and relaxed [reversed].
4. Agitation: agitated, uneasy, on edge, tense, restless.
5. Quiescence: calm, relaxed, at ease, tranquil, relieved*.
6. Dejection: disappointed, discouraged, sad, low, downhearted.
7. Cheerfulness: happy, satisfied, joyful, content.

Composition of the Three Mood Questionnaires:

- The first mood questionnaire (mood baseline) included the following seven scales: Feeling Externally Controlled, Agitation, Quiescence, Dejection, Cheerfulness, High Self-esteem and Low Self-esteem.
- The second mood questionnaire (pre-task) included the following three scales: Feeling Externally Controlled, Positive Anticipation and Negative Anticipation.
- The third mood questionnaire (post-feedback) included the following six scales: Agitation, Quiescence, Dejection, Cheerfulness, High Self-esteem and Low Self-esteem.

Note: the mood baseline questionnaire is attached on the next page.
We are interested in assessing your current mood and feelings, so that we can later statistically correct for any effects they might have had. Therefore, we would appreciate your honest responses to the scale below (and other similar scales to follow). Please answer the questions with your immediate reactions.

For each of the following adjectives, please circle the number that best describes HOW YOU FEEL RIGHT NOW.

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Not at all</th>
<th>Somewhat</th>
<th>Extremely so</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. pressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. insecure</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. relaxed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. relieved</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. uneasy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. discouraged</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. proud</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. on edge</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. incompetent</td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. constrained</td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. satisfied</td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. smart</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. disappointed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. forced</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. calm</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. tense</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. annoyed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. content</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. at ease</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. agitated</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. inadequate</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. competent</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

And so on...
Appendix B
Task Involvement index

*Task Involvement:* items 1, 2, 5, 6, 7 and 8 (absorption items: 1, 2, 5, 7; distraction items: 6, 8).

*Thoughts about Performance:* items number 3, 4 and 9.

Instructions:
Please complete the following stem for each of the subsequent questions:

"While working on the social perception task, I..."

1. ...was totally absorbed in the task
   
   ![Rating Scale](image)
   
   strongly Disagree strongly AGREE

2. ...lost track of time
   
   ![Rating Scale](image)
   
   strongly Disagree strongly AGREE

3. ...wondered how many questions I was answering correctly
   
   ![Rating Scale](image)
   
   strongly Disagree strongly AGREE

4. ...thought about how others would likely have done at the task
   
   ![Rating Scale](image)
   
   strongly Disagree strongly AGREE

5. ...was completely focused on finding the non-verbal cues
   
   ![Rating Scale](image)
   
   strongly Disagree strongly AGREE
6. ...thought about things unrelated to the task

   1  2  3  4  5  6  7

   strongly DISagree strongly AGREE

7. ...concentrated on determining the nature of the couples' relationships

   1  2  3  4  5  6  7

   strongly DISagree strongly AGREE

8. ...had trouble focusing my attention on the task

   1  2  3  4  5  6  7

   strongly DISagree strongly AGREE

9. ...thought about whether I was doing well or poorly

   1  2  3  4  5  6  7

   strongly DISagree strongly AGREE
Appendix C

Interest and Enjoyment Measure (Enjoy)

Instructions: Please summarize for us your overall reactions to the social perception task, by indicating how much you agree with each of the following statements:

1. I found the task very interesting: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

2. I didn’t like the task at all: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

3. I found the task to be rather annoying: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

4. It was fun to examine the photographs: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

5. I really enjoyed working on the task: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

6. If I could, I would recommend this task to others: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE

7. I think the task is boring: 1 2 3 4 5 6 7

   strongly DISagree   strongly AGREE
Appendix D

Predicted Future Performance Items

*Note:* item 1 is the Predicted Score item, and item 2 the Predicted Percentile item.

1. If you were to do another set of the social perception task in the future, how many correct answers (out of 15 photographs) do you think you would get? (give your best estimation)

☐ photos (out of 15).

2. If you were to do another set of the social perception task in the future, where do you think you would rank relative to other U of T undergraduates?

Check the box with the most suitable option. Give your best estimation.

I would rank in the:

- lower
- lower
- lower
- lower
- lower
- average
- upper
- upper
- upper
- upper
- upper

5% 10% 25% 35% 45% (around 50%) 45% 35% 25% 10% 5%
Appendix E

Manipulation Checks

*Note: items 1, 2, 3 and 7 are the manipulation checks of the feedback manipulation, and items 4-6 are the manipulation checks of the achievement goal manipulation.*

In concluding of our experiment, we want to ensure that the instructions and information were clearly given. We appreciate your comments on these more technical aspects of the experiment.

1. What was your score (number correct) on the social perception task? ____/15

2. How satisfied were you with your score on the social perception task?

   1 2 3 4 5 6 7
   Not at all       Very much

3. What is the lowest score (number correct) you would have been satisfied with? ____/15

For the following questions, circle the one option you think is most suitable:

4. Earlier in the experiment, you read a written description about the purpose of the study and your goal for the task session. Which of the following goals was included in that description:

   a. Your goal for the task session is to try to demonstrate that you have **good social perception skills**, by getting a higher score than the majority of students, i.e. getting a lot of answers right.

   b. Your goal for the task session is to try to demonstrate that you **do not have poor social perception skills**, by not scoring lower than the majority of students, i.e. not getting a lot of answers wrong.

   c. The task session could be an interesting learning experience for you. **Your goal for the task session is to try to learn new things about social perception**, and to **develop your own skills in this domain**.

   d. You were not presented any of the above goals, but rather only told that your goal for the task session is to **engage in the task**, and then to answer various questions about your impressions and reactions to it.

    Continues on the next page...
5. In the written description of the 'purpose of the study', were you given any numeric goal which you should try to reach (i.e. a certain number of correct or incorrect answers that you should try to achieve)?  Yes / No

If No – you don’t need to answer the rest of the questions.
If Yes – answer questions 6-7:

6. What was the numeric goal that you were given (the number of correct/incorrect answers you should try to get)?

__________________________________________________________________________

7. Did you reach that goal?  Yes / No