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## Negative Effects of Competition on Children's Intrinsic Motivation

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**ABSTRACT.** This study examined the effects of competition on intrinsic motivation. Subjects ( $N = 23$ ) were randomly assigned to conditions of competition or intrinsic-mastery orientation. In the competition condition, subjects were instructed to perform an interesting activity with the explicit goal of "beating" other participants. In the intrinsic-mastery orientation condition, subjects were told to do as well as they could while looking for novel ways to perform the activity. Results showed that subjects in the competition condition displayed less subsequent intrinsic motivation than did mastery-oriented subjects. The present findings corroborate predictions based on cognitive evaluation theory (Deci & Ryan, 1985) that competition can have deleterious consequences on intrinsic motivation.

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OVER THE PAST 15 YEARS, a growing interest in the study of intrinsic motivation processes has been evident. Individuals are said to be intrinsically motivated when they partake in an activity for its own sake and derive inher-

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ent pleasure from task participation in the absence of external rewards and constraints. One is extrinsically motivated when participating in order to receive rewards or avoid punishment (Deci, 1971).

A reliable and robust finding that has emerged from intrinsic motivation research is that to participate in interesting activities with an extrinsic orientation produces a decrease in intrinsic motivation toward the activity (see Deci & Ryan, 1985; Lepper & Greene, 1978, for reviews). Among the many variables that have been found to induce such a decrease in intrinsic motivation, the following have been noted: material rewards (e.g., Deci, 1971; Lepper, Greene, & Nisbett, 1973), surveillance (Lepper & Greene, 1975), deadlines (Amabile, DeJong, & Lepper, 1976), lack of choice over which activity to perform and how to perform it (Zuckerman, Porac, Lathin, Smith, & Deci, 1978), and negative performance feedback (Deci & Cascio, 1972; Vallerand & Reid, 1984, 1985).

More recently, research has focused on the effects of competition on intrinsic motivation. For instance, Vallerand, Gauvin, and Halliwell (1986) have shown that subjects who lose a zero-sum competition perceive themselves as less competent and are less intrinsically motivated than subjects who win the competition. These findings are directly in line with cognitive evaluation theory (Deci & Ryan, 1980, 1985), which posits that perceived competence is an important mediator of intrinsic motivation changes (see Vallerand & Blais, 1986; Vallerand & Reid, 1984, 1985).

Employing cognitive evaluation theory as a basis, Deci, Betley, Kahle, Abrams, and Porac (1981) have suggested that competition may also undermine intrinsic motivation when the competitive structure emphasizes an extrinsic approach to the task such as "beat" the opponent or "win at all costs." In such instances, intrinsic motivation losses are not mediated by changes in perceived competence but occur because the competitive context is perceived as being controlling: Individuals come to realize that they have lost control and self-determination over the process and perceive that a shift in the locus of causality has occurred. Whereas the locus of causality for participation was originally internal (e.g., playing for fun and other internal rewards), the locus of causality is now perceived as being external (e.g., playing to win). Individuals do not participate for the sake of the activity itself anymore but rather for some external reward or entity. This extrinsic approach runs contrary to an intrinsic-mastery orientation in which the goal is to enjoy the freedom and sense of efficacy derived from self-directed mastery and discovery (Harter, 1982a). Thus, like external incentives and constraints, competition may initiate a change in the locus of causality that results in a decrease in one's sense of self-determination and intrinsic motivation.

Only two studies have assessed the effects of the controlling aspect of competition on intrinsic motivation. Deci et al. (1981) found that college subjects participating in an interesting cognitive task with the explicit goal of

beating another subject displayed lower levels of intrinsic motivation than noncompeting subjects. In another study, however, Weinberg and Ragan (1979) reported that competing college subjects reported higher levels of intrinsic motivation toward an interesting motor task than noncompeting subjects. Thus, the only two published studies on the controlling effect of competition on intrinsic motivation show inconsistent results.

We conducted an experiment to clarify the nature of the effect of competition on intrinsic motivation. Specifically, subjects were randomly assigned to conditions of competition or intrinsic-mastery orientation. Further, in order to assess the generalizability of the effects reported by Deci et al. (1981), children instead of college students were used as subjects and a motor task was employed in lieu of a cognitive task. In agreement with Deci et al., it was hypothesized that subjects participating with a competitive orientation would display lower levels of intrinsic motivation than subjects engaging in the activity with an intrinsic-mastery orientation.

## Method

### *Subjects*

Subjects were fifth- and sixth-grade French-Canadian boys ( $N = 26$ ) from 10 to 12 years old, who were participating in one-day camps at a French-Canadian University. Informed consent was obtained from both teacher and child. Each subject participated individually in a session lasting approximately 20 min. Subjects were randomly assigned to one of two conditions: (a) interpersonal competition or (b) intrinsic-mastery orientation. Data collected from 3 subjects not following instructions in this latter condition were deleted, leaving 13 subjects in the competition condition and 10 subjects in the intrinsic-mastery orientation condition. These remaining subjects had an overall mean age of 11.53 years.

### *Task*

The task was the stabilometer motor task, which requires subjects to maintain their balance in a standing position on a platform that rotates around a central pivoting shaft. Magnetic switches positioned on each side of the platform are closed when the platform is in balance and opened when the platform touches either side of the base. When the switches open, a clock hooked to the platform is stopped from recording time in balance (TIB). TIB was the ostensible performance measure in this study. A pilot study revealed that this balancing task was a very interesting activity for 10- to 12-year-old children.

## Procedures

Subjects were brought individually to the experimental room by an assistant and greeted there by the experimenter. While the experimenter introduced himself and proceeded with the testing session, the assistant left the room and positioned herself behind a one-way mirror in order to record the time spent on the task during the free-choice period (intrinsic motivation index). Prior to performance, subjects were shown how the stabilometer worked and asked if they wanted to try it. All eagerly assented and were allowed one practice trial, after which they participated in one of the experimental conditions.

The interpersonal competition condition used in this study was based on Sherif's (1972) conceptualization of competition:

Competition is a social process that occurs when a person's activities are directed more or less consistently toward meeting a standard or achieving a goal in which performance, either by the individual or by the group, is compared and evaluated relative to that of selected other persons or groups. (p. 116)

In light of the above definition, subjects in the competition condition were told that the experimenter was in the process of recording TIB scores of children their age. They were then informed that they would be asked to perform 8 trials lasting 20 s each with a 20-s rest in between. They were told that they could try to keep in balance in any way they wanted and to do as well as they could because they were competing against other children their age and that their performance relative to others would be compared at a later date. They were explicitly encouraged to perform so as to beat other people's scores. Subjects then performed the trials. Following the fourth trial, subjects were told that they were now at midpoint and were further encouraged to continue trying to beat scores of other participants. These overall procedures served to enhance the salience of the controlling aspect of the competitive situation.

In line with Harter's (1982a) conceptualization, the intrinsic-mastery orientation condition emphasized a self-directed learning and discovery process in the pursuit of task mastery. Subjects in this condition were told that there were several ways by which one could maintain balance on the stabilometer. They were told that they would get 8 trials to discover or to try out new ways to balance on the stabilometer while trying to perform as well as they could. They then performed the trials. Following the fourth trial, subjects were told that they were now at midpoint and again were encouraged to perform well while exploring new balancing strategies.

Thus, subjects in both conditions were explicitly told to do as well as they could. Further, all subjects were told that they could keep their balance in any way they wanted. The main difference between the two groups was that those in the competition condition were trying to top the scores of other

participants, whereas those in the intrinsic-mastery condition were trying to discover new ways to approach an interesting and novel task.<sup>1</sup>

Following performance on the stabilometer, all subjects were told to sit down and relax in a chair placed near the wall in the experimental room while the experimenter checked to see whether he had recorded their performance on all 8 trials. This allowed the boys to rest for 45 s, so that fatigue would not interfere with the free-time period. Subjects were then called by the experimenter and told that he wanted them to answer a questionnaire. Unfortunately, after looking very carefully, the experimenter "realized" that he had run out of questionnaires. Subjects were told that he would have to go to his office in order to get one. This would take about 5 min. Subjects were informed that during this time they could do whatever they liked, sit down and relax, play on the stabilometer, or look at the sports posters on the walls. They were, however, told not to leave the room. The experimenter then left the room. Meanwhile, an assistant positioned behind a one-way mirror recorded the amount of time spent on the stabilometer. This served as the dependent measure of intrinsic motivation, a measure used extensively in intrinsic motivation research (e.g., Deci, 1971; Deci et al., 1981).

Following the 5-min free-time period, the experimenter returned to the room and gave subjects a questionnaire that included a target question on perceived competence. This question, scored on a 4-point scale, was adapted from Harter's (1982b) Perceived Competence scale. This was in order to rule out differences in perceived competence as a mediator of intrinsic motivation changes (see Vallerand et al., 1986). Upon completion of the questionnaire, all subjects were thanked, congratulated for an outstanding performance, and taken back to the playground.

## Results

Student's *t* test was used to test for differences in time spent on the stabilometer during the free-time period by the competition and by the intrinsic-mastery orientation groups. As predicted, subjects in the competition condition spent significantly less time ( $M = 62.23$  s) on the stabilometer,  $t(21) = 2.50$ ,  $p < .01$  (one-tailed), than subjects in the intrinsic mastery condition ( $M = 151.10$  s). Further, these differences in intrinsic motivation cannot be explained in terms of differences in perceived competence because subjects in the competition condition ( $M = 2.92$ ) and in the intrinsic-mastery condition ( $M = 3.00$ ) did not differ from one another on the perceived competence measure,  $t < 1$ .

<sup>1</sup>Indeed, the pilot study revealed that subjects behaved in such a way on the stabilometer, trying out several ways to keep balance and then trying to do as well as possible on the task using the best strategy or strategies discovered.

## Discussion

The purpose of this study was to clarify the inconsistency in the literature on the effects of competition on intrinsic motivation. Indeed, Deci et al. (1981) found that competing in order to beat other participants decreased intrinsic motivation toward a cognitive task, whereas Weinberg and Ragan (1979) observed that such a task approach increased intrinsic motivation toward a motor task. The results indicated that competition decreased intrinsic motivation toward a motor task, thereby corroborating Deci et al.'s (1981) findings.

The discrepancy between the Deci et al. (1981) and Weinberg and Ragan (1979) findings may be traced to the intrinsic motivation measures that were used. Deci et al. employed the commonly used behavioral index of time spent on the activity during a free-choice period, whereas Weinberg and Ragan used attitudinal questions as well as a question dealing with the amount of time (in minutes) subjects would volunteer for a future experiment of a similar nature. From empirical and conceptual perspectives, the equivalence of the intrinsic motivation measures used in these two studies remains to be established. Thus, employing different (i.e., attitudinal vs. behavioral) dependent measures may have led to different findings. Furthermore, the questions used by Weinberg and Ragan dealt with "intrinsic motivation for the activity in the context of competition," because subjects were asked whether they enjoyed the activity and whether they would like to return for a similar experiment (thus in a competitive environment). On the other hand, Deci et al. assessed "intrinsic motivation in the absence of competition" in a free-choice period. Thus, not only did the two groups of researchers use different intrinsic motivation measures but they also measured different types of intrinsic motivation. Although the inconsistency between the Deci et al. and Weinberg and Ragan findings may not be definitely linked to either the type of index used (behavioral vs. attitudinal), or to the focus of each assessment (intrinsic motivation in a competitive vs. noncompetitive environment), it is clear that competing with the explicit goal of beating other participants may lead to a decrease in intrinsic motivation as measured by the time spent on the activity during a free-choice period. In addition, this negative effect of competition appears generalizable to motor tasks and to French-Canadian children. These findings provide cultural validity to cognitive evaluation theory's (Deci & Ryan, 1985) analysis of the potential effects of competition on intrinsic motivation.

Although the present study constitutes a useful replication and extension of results indicating that competition decreases intrinsic motivation, much research must be carried out in order to identify actual processes underlying decreases in intrinsic motivation. In this regard, anecdotal evidence supports Deci & Ryan's (1985) analysis of the process through which competition undermines intrinsic motivation. Their cognitive evaluation theory proposes that competition undermines intrinsic motivation through a loss of self-

determination. This loss of self-determination seems to occur when subjects are involved in the competition condition. Indeed, a pilot study revealed that a discovery approach represented a habitual manner of delving into the novel task used in the present study: Subjects attempted to become familiar with the task by trying out various ways of maintaining balance. In an effort to master the task, they subsequently tested their balancing skill by using some of the best strategies learned during the discovery period. Subjects generally used an intrinsic-mastery orientation to approach the task. In the competitive condition, however, this discovery period seems to have been thwarted. Subjects tried out one or two strategies and adopted one for the remainder of the contest. This represented a realistic strategy when winning was very much at stake. From a motivational perspective, however, the consequences were such that the fun and interest derived from engaging freely in the activity seemed to be greatly diminished. Interestingly, this undermining of self-determination was self-imposed. Subjects were willing to have less fun and to be less familiar with the activity as long as this strategy increased their chances of attaining the end result of winning—a clear "means-ends" approach (Lepper et al., 1973). Thus, not surprisingly, when the competition was over and the ends had been achieved, competing subjects turned away from the activity. To paraphrase cognitive evaluation theory (Deci & Ryan, 1985), the locus of causality for participation had become external.

The results of the present study, when coupled with those of Vallerand et al. (1986) that showed that losers of competition experience a decrease in intrinsic motivation because they perceive themselves as less competent than winners, reveal that the negative effects of competition can occur with children. Although it is often suggested that competition is an intricate part of play (Csikszentmihalyi, 1975) and games (Veroff, 1969), especially with children 10 to 12 years old, the present results indicate that under certain circumstances competing may sap the ludic essence of play and games and produce a decrease in intrinsic motivation. These findings should serve as a cautionary note to teachers and other professionals who may wish to employ competition as a motivational device in children's activities.

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## Territoriality and Compliance: The Influence of Gender and Location on Willingness to Sign Petitions

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**ABSTRACT.** The effects of territory type and gender on compliance behavior were examined in a field experiment. Undergraduate students ( $N = 180$ ; 90 men, 90 women) were approached by male experimenters in primary and public territories and in nonterritories (mobile individuals outdoors) and were asked to sign either an unappealing counterattitudinal petition or a petition more neutral in content. It was hypothesized that subjects would comply with the negative request most often in the nonterritory condition, least often in the primary territories, and an intermediate amount in public territories and that territory type would not affect compliance with the neutral request. The results fully supported all the hypotheses. In addition, an unexpected interaction occurred between territory type and sex of subject for the unappealing petition: Although female behavior paralleled male behavior in central and public territories, women in nonterritories resisted compliance more than men did.

ALTMAN (1975) made a distinction among three types of territories (primary, secondary, and public) that differ in how central they are perceived to be to the lives of their users. Centrality refers to the amount of security and control an individual experiences in a territory. *Primary* territories are those places in which the owners feel they have complete control over access and use most of the time; they are places like a home, office, or bedroom, that are highly central to the lives of their users. *Secondary* territories are those places in which the users feel they have semiexclusive rights to access and use. In

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