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Intrinsic Motivation in Sport

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Sports comprise one of the most pervasive sets of activities that people engage in for enjoyment. When free to choose what to do, children and adults alike can often be found playing baseball, hockey, or racketball. According to one report [93], well over 20 million North Americans participate in organized sports, and countless others participate informally by playing golf or "shooting hoops" in the backyard. Most of these participants do not need to be prodded to play; for them the game is its own reward. In other words, they are attracted to sports for the direct experiential rewards—things like the feeling of excitement or personal competence. In psychology, such motivation is referred to as "intrinsic," and research has shown that for an activity to be intrinsically motivating, it must be interesting, provide optimal challenge, involve feedback, and allow people to experiment with their own way of doing it [32]. Most sports possess these necessary ingredients, so many sports psychologists have emphasized the importance of intrinsic motivation in sports [131] or have shown that topics related to intrinsic motivation are of central concern to coaches and athletic administrators [50].

Sports, especially organized sports, also have a number of "extrinsic" components [102]. For instance, most leagues have end-of-the-season banquets where trophies are awarded, and many teams encourage participation by promising a team jacket. Even more salient, perhaps, are the social pressures on young people to become involved, indeed even to excel, in sports. Widespread media coverage of events offering large winnings and instant fame further emphasizes the extrinsic aspects of sports and adds to the social pressures. Finally, sports often become an intense internal proving ground for the self, such that people pressure themselves and base their self-worth on their athletic performance. Engaging in sports to prove one's self-worth, rather than to enjoy the game, is yet another form of extrinsic motivation [99]. Thus, although sports can certainly be intrinsically motivating, they have acquired many extrinsic trappings.

Studies of athletes' reasons for sport participation [2, 3, 17, 49, 103, 108, 127] have indicated that the distinction between intrinsic and extrinsic motives is ecologically valid for sports and that intrinsic motives are generally rated as more important than extrinsic motives for amateur and leisure-time athletes. These findings have been consistent across various ages and sports, although there appear to be gender differences [108], with females reporting more intrinsic reasons than males and males reporting more extrinsic reasons than females.

INTRINSIC AND EXTRINSIC MOTIVATION

Early theorizing in the field of human motivation [e.g., 8] postulated that intrinsic and extrinsic motivations are additive. In other words, a person's total motivation was said to be the sum of the two types. This suggests, of course, that the extrinsic incentives that have become associated with sports add to the athletes' total motivation by complementing their intrinsic motivation. Prescriptively, then, this implies that the more extrinsic incentives, the better.

Recent research and theorizing have cast doubt on this assumption, however. Numerous studies, most of them from psychology laboratories, have indicated that the two types of motivation may interact in complex ways. For example, Deci [30] discovered that subjects who were rewarded with money for participating in an interesting activity (a mechanical puzzle called SOMA) spent significantly less time with that target task in a subsequent play period than did subjects who had not been rewarded for doing the task. Deci concluded that participating in an interesting activity in order to receive an extrinsic reward led to decreased intrinsic motivation for the activity.

Several subsequent studies replicated this finding, as well as other studies, found that various extrinsic factors were also detrimental to intrinsic motivation. Fortunately, not all extrinsic factors were found to decrease intrinsic motivation, however. For example, when material rewards and verbal feedback were used to convey positive competence information, they tended to *increase* intrinsic motivation, so long as they were not administered in a context that controlled or pressured people to perform in a specific way [99].

As the studies continued to yield interesting results, people began to consider the relevance of this research for various applied domains. Sport was an obvious candidate for such consideration, since, as we have said, sports tend to elicit a high degree of intrinsic motivation, while at the same time involving many extrinsic incentives. Given the obvious relevance of this research for understanding athletes' motivation, a few researchers have begun to conduct such studies in sport settings, and many sport psychologists have discussed the issues. Accordingly, a review of research on intrinsic and extrinsic motivation seems timely even though the proportion of this research that has been conducted in actual sport settings is quite small.

We begin this review by giving various definitions and approaches to the study of intrinsic motivation, culminating in a presentation of cognitive evaluation theory, which has guided much of the research in the field. We then move on to an extensive review of research on intrinsic and extrinsic motivation. Following that, we discuss other relevant sport research on such topics as coaching and fitness. Throughout the chapter, we attempt to show the implications of the research. At times, these implications are speculative and as such represent agendas for future research.

INTRINSIC MOTIVATION DEFINED

A great deal of the research related to intrinsic motivation—particularly the early research—has explored the level of interest in or free play with a target task subsequent to being rewarded for working with that task. Although we interpret such results in terms of subjects' intrinsic motivation for the task, other researchers have interpreted the findings using nonmotivational theories. Since these theories are intertwined throughout the intrinsic motivation literature, we begin with them.

The Behavioral Approach

Behavioral theories tend to avoid the use of internal constructs. As such, they have failed to acknowledge the concept of intrinsic motivation, instead postulating about response rates and the external contingencies that control observed behaviors [e.g., 73, 91, 105]. From this perspective, intrinsically motivated behaviors are merely those behaviors for which the controlling contingencies have not been identified.

In terms of increases and decreases in intrinsic motivation, increases are explained as straightforward reinforcement phenomena; people are said to be more interested in and to persist longer at behaviors that have been reinforced. Decreases, on the other hand, are explained in terms of competing responses and anxiety [e.g., 91]. According to this argument, extrinsic rewards can elicit other responses that have been rewarded and can interfere with the intrinsically motivated target activity. For example, if a gym teacher praises a girl for performing well on the parallel bars, the girl, the next time she approaches the bars, may perform some other behavior that has also been praised—for example, being sure that her hair and uniform are neat. This could distract her from her performance and lead to less interest in the parallel bars. Furthermore, extrinsic rewards can induce anxiety, which would also make the target activity less enjoyable.

Although the behavioral approach was used to provide an alternative explanation for some of the early findings, it has not been widely used in interpreting the results of intrinsic motivation studies. Presumably this is due to the fact that intrinsic motivation is not a behavioral concept. Thus, it does not lend itself to behavioral theorizing, and attempts to explain intrinsic motivational phenomena in terms of reinforcements and response rates have not been very convincing.

The Cognitive Approach

Cognitive theories focus on people's perceptions or thoughts about a particular activity. These include their expectations about receiving reinforcements [e.g., 9, 67] and their postbehavioral attributions (or inferences) about why they engaged in the behavior. In explaining intrinsic motivational phenomena, the cognitive approach employs both expectancy theory and self-perception theory.

Expectancy theory [e.g., 9] asserts that people engage in a behavior if they expect that the behavior will lead to a valued reinforcement *and* that they are competent to do the behavior. Positive competence information is theorized to increase the likelihood of their engaging in the activity again because it affects their expectation about being competent enough to get a reinforcement. Self-perception theory [14] asserts that people attribute internal states to external factors that were present and could have accounted for their behavior. For example, a person who has received an attractive reward for playing a game is likely to attribute his or her behavior to the award and thus to discount internal factors such as intrinsic motivation. Such discounting of internal forces is the result of overjustification mechanisms where both internal and external factors are present to explain the behavior [65]. In such instances, external factors are generally preferred to internal ones and a loss of intrinsic motivation is inferred.

Taken together, these two cognitive theories can account for the increases and decreases in intrinsic motivation mentioned earlier, since expectancy theory explains increases in terms of expectations about competence and self-perception theory explains decreases in terms of discounting intrinsic factors in the presence of extrinsic ones. The cognitive approach has been quite prevalent in the literature on intrinsic and extrinsic motivation, although we believe that it has proven less adequate than the motivational approach in explaining the complex set of findings that will be presented in this chapter.

The Motivational Approach

Motivational theorists suggest that the explanation of behavior should include an analysis of human needs. As such, their theories of intrinsic motivation begin with postulates about intrinsic needs. White [134] posited a need to feel effective. This, he said, is independent of physiological drives and is always present in the life of individuals. In a similar vein, deCharms [28] postulated a need for personal causation—for feeling that one is the origin of one's behavior. Following the lead of these two theorists, Deci [32] suggested that intrinsic motivation is based in the innate psychological need to feel competent and self-determining in dealing with one's surroundings. Thus, people are said to participate in activities that allow satisfaction of their needs for competence and self-determination, and the activities they seek are ones that provide optimal challenges and allow freedom for exploration.

At times when drives and emotions are not very salient, people seek activities that interest them and require the use of their creativity and resourcefulness. They seek challenges that are suited to their competencies—activities that are neither too easy nor too difficult. And when they find optimal challenges, people work to meet them. In short, the needs for competence and self-determination keeps people involved in the ongoing experience of seeking and conquering optimal challenges [see 37]. And this motivation can energize a wide range of activities for which the primary rewards are the feelings of effectiveness and autonomy.

Motivational theories explain the changes in intrinsic motivation caused by events such as the offer of a reward in terms of the relation of those events to the satisfaction or thwarting of the underlying needs. Deci and Ryan [37] used the term "functional significance" to describe the relationship of an event to a person's intrinsic needs. Thus, we will see in the next section that cognitive evaluation theory, which explains changes in intrinsic motivation, is formulated in terms of the functional significance of events for one's intrinsic needs for competence and self-determination.

COGNITIVE EVALUATION THEORY

According to this theory [36, 37], inputs relevant to the initiation and regulation of behavior can serve either to promote or infringe upon self-determination and/or facilitate or inhibit competence. First, consider self-determination. Inputs that promote self-determination are associated with a more internal perceived locus of causality and enhance intrinsic motivation, whereas those that infringe upon self-determination are associated with a more external perceived locus of causality and decrease intrinsic motivation. These inputs can be external events such as the offer of a reward, the imposition of a deadline, or the opportunity for choice. They can also be a more general experience of the context or ambience of the situation. And, finally, they can be internal events such as introjected controls or other internalized regulations.

Events and contexts can also affect one's sense of competence. If a person's behavior is relatively self-determined—in other words, if the person does not feel controlled—then those inputs may function primarily to promote a feeling of competence. When such inputs leave one feeling more competent, they enhance intrinsic motivation; when they leave one feeling less competent, they diminish intrinsic motivation.

Finally, cognitive evaluation theory suggests that inputs can have multiple aspects. In this chapter we focus on the controlling and informational aspects. The controlling aspect of an input functions to pressure people toward specified outcomes, thus diminishing their self-determination. In the words of deCharms [28], it functions to make people "pawns" to its forces. The controlling aspect decreases intrinsic motivation, since it leads to a more external perceived locus of causality. The informational aspect operates in situations that are noncontrolling and is relevant to people's experience of competence. It affects intrinsic motivation directly, yielding a positive correlation between perceived competence and intrinsic motivation. However, when competence feedback is presented in the context of control, it is not considered informational. When control is salient, competence feedback affects people's extrinsic motivation, and, insofar as it affects intrinsic motivation, the effect is indirect.

Cognitive evaluation theory pertains not only to external events but emphasizes internal events as well. Thoughts, feelings, and memories can play a significant role in the initiation and regulation of behavior and, like external events, can

be qualitatively different. The distinction between information and control is relevant to these events as well. When internal events, such as ego involvement or threats of guilt, control a person, they leave the person experiencing less self-determination and undermine intrinsic motivation. When they do not control, but instead serve primarily to inform competence, they have the same relation to intrinsic motivation as external, informational events.

RESEARCH ON INTRINSIC MOTIVATION

When intrinsic motivation is defined operationally for research purposes, it generally takes two forms. First, people are said to be intrinsically motivated if they engage in an activity in the apparent absence of extrinsic rewards or constraints. This has been the most widely used operational definition and has led to the measurement of intrinsic motivation by surreptitiously observing people to determine how much of their "free-choice" time is spent on the target activity. This so-called free-choice measure has been widely used and has served well, although, as Deci and Ryan [37] have noted, the measure becomes very complicated in situations where internally controlling regulation is being explored. We will return to this matter in the section on competition.

The second operational definition is that people are said to be intrinsically motivated if they express interest in and enjoyment of the activity. This definition has led to intrinsic motivation for an activity being measured by questionnaires that, for example, ask people to rate how interesting they found the activity [101]. Mayo [74] developed an extensive questionnaire measure of this sort for a puzzle task, and it has been adapted for use in the domain of sports [117, 125]. Harter [56] constructed a psychometric instrument that assesses people's general intrinsic motivation for school work, and her measure has also been adapted for the sport domain [132]. The relative validity of the various approaches to measurement of intrinsic motivation remains undetermined, however, so we will review research using all of them.

Perceived Causality

Inputs can be either controlling or noncontrolling, thus affecting a person's self-determination. Stated differently, inputs can either control one's behavior or support one's autonomy. Accordingly, they affect intrinsic motivation and shift the perceived locus of causality, making it more external when the input is experienced as controlling and more internal when it is experienced as supporting autonomy. Numerous studies have been done that are relevant to this variable, and these studies can be organized into three groups: those in which the input is a specifiable external event such as the imposition of a deadline, the offer of a reward, or the opportunity to choose; those in which the input is a general context such as a team or classroom climate; and those in which the input is some internal event such as ego involvement. We will consider these three groups in turn.

EXTERNAL EVENTS. Of the studies that have focused on specific events, most have explored the effects of events that control rather than those that support autonomy. Several studies have indicated that, across ages, sexes, and tasks, extrinsic rewards such as money [31], prizes [55], food [96], and good player awards [65] all tend to decrease intrinsic motivation. It appears that since external incentives are so often used to control people, people tend to experience them as controlling and thus as limiting their self-determination. As an example, consider a young girl who began playing basketball out of personal interest and gradually spent more of her time playing on teams. Imagine that she eventually joined a team where the coach tried to motivate the girls by offering trophies for the most valuable player, the most improved player, and the player who scored the most points. As our young friend continued playing on that team, it is likely that her orientation toward the game changed. Whereas the perceived locus of causality was initially internal ("I play because it's fun and interesting"), it became more external ("I play to get a trophy"). Her behavior was less self-determined (i.e., controlled by the reward), and she lost intrinsic motivation for the game. Ultimately, she stopped playing basketball if extrinsic incentives did not remain attractive and forthcoming.

Although most of the studies were done in a nonsport setting, Orlick and Mosher [83] have tested the above reasoning with a sport-related task. These researchers had children ranging in age from 9 to 11 years participate in an interesting motor activity (the stabilometer). First, the children had a free-choice pretest period, and then they played under either a reward condition (a task-contingent trophy) or a no-reward condition. Four days later, the subjects returned for a posttest free-choice period. The results showed that subjects who had participated to obtain the trophy displayed a decrease in free-choice time spent on the task from pre- to postsession, relative to the no-reward subjects. Results of the Orlick and Mosher study suggest that intrinsic motivation for a sport-related task can also be undermined by extrinsic rewards. Other studies conducted with children [54, 114] have shown similar results.

In a study of actual sport participation [97], the impact of athletic scholarship awards on the intrinsic motivation of undergraduate athletes was examined. This study used a questionnaire survey to compare the intrinsic motivation of male athletes on a scholarship to that of nonscholarship athletes. The results indicated that athletes receiving money for playing sports listed more extrinsic reasons for participation and reported less enjoyment of the activity than the nonscholarship athletes.

Other experiments from psychology laboratories have determined that surveillance [64, 88], deadlines [6], and evaluations [107] also tend to decrease intrinsic motivation. The conclusion seems clear: Any external event that tends to pressure people's performance—in other words, that tends to control their behavior—is likely to undermine their intrinsic motivation.

Controlling people's behavior essentially amounts to covertly denying them choice. And in most instances, people seem to comply with the control and lose

intrinsic motivation. Deci and Ryan [37] have suggested that people sometimes respond to control by defying rather than complying with it. This is most likely to occur when the control is blatant rather than subtle or when choice is overtly rather than covertly denied. Further, studies [21, 53] have suggested that males may be more likely to be defiant than females. When males are controlled, they are more likely to respond with renewed efforts to regain their control, whereas females respond by giving in [53]. The interaction of gender and the denial of choice does, however, require further investigation, as does the more general issue of when people are defiant rather than compliant.

The one event that has been found to enhance intrinsic motivation by facilitating a more internal perceived locus of causality is the opportunity to choose. Whereas control denies self-determination and tends to decrease intrinsic motivation, the opportunity to choose encourages self-determination and tends to increase intrinsic motivation. In one study of this hypothesis [135], college students performed three configurations on the SOMA puzzle during an allotted time of 30 minutes. Subjects in the choice condition were allowed to select which three (out of six) puzzles they would work on and how much of the 30-minute period they would allot to each one. Subjects in the no-choice condition were yoked to subjects in the choice condition, so they were told which puzzles to work on and how much time to allot to each one. The results revealed that subjects in the choice condition were more intrinsically motivated than no-choice subjects on the free-choice and questionnaire measures. Similar results [112] were found in a study with young children who were led to perceive that they had a choice about what activity to engage in.

INTERPERSONAL CONTEXTS. All of the studies described above considered the effect on intrinsic motivation of a specific event (e.g., a reward, deadline, or choice). Other research has focused on the effects of general contexts. Imagine, for example, a high school in which the general orientation toward team sports is very pressured and winning is considered more important than performance, sportsmanship, or honesty. Alternatively, imagine another school in which the orientation is more relaxed, with an emphasis on improving one's performance, helping teammates, and being a good sport. It is probable that the motivation and experience of the athletes in these two contexts will be very different.

This general issue, as it relates to motivation for school work, has been explored in elementary school classrooms [38]. The researchers reasoned that teachers are the most important factor in determining the classroom context, so they measured the teachers' style of relating to the children. Teachers, they suggested, could control the children's behavior or support their autonomy. The former condition would be predicted to facilitate a more external perceived locus of causality in their pupils, while the latter would be predicted to facilitate a more internal one. These researchers developed an instrument (the Problems in Schools Questionnaire) to assess teachers' orientation and then related it to the children's intrinsic motivation, perceived competence, and self-esteem. The results of their study confirmed that children in the controlling classroom displayed less intrinsic motivation, perceived competence, and self-esteem than children in the informational, autonomy-supportive classroom.

Ryan and Grolnick [101] took a different approach to the same basic issue. These researchers measured children's perceptions of whether their teachers tended to control behavior versus support autonomy, using deCharms' [29] classroom climate measure. They then related these perceptions to the children's intrinsic motivation, perceived competence, and self-esteem and obtained results complementary to those of Deci et al. [38]. Whether the classroom climate is determined by assessing teachers' style or children's perceptions, the results support the hypothesis that interpersonal contexts that pressure and control people will have a negative effect on their intrinsic motivation and related variables.

Finally, deCharms [29] not only explored the relation between teachers' style and children's intrinsic motivation, but also designed a program to train teachers to be more supportive of autonomy. The results of his evaluation research indicated that when teachers responded to the program by being more supportive of autonomy, their students became more intrinsically motivated.

INTERNAL EVENTS. Thus far, the reviewed studies have suggested that external events and interpersonal contexts can either control behavior or support autonomy and will have correspondingly predictable effects on intrinsic motivation. Ryan [99] has stated that this analysis is applicable to internal initiating or regulatory events. He proposed that internal events (i.e., thoughts and feelings) can also pressure people toward outcomes and thus leave them feeling less self-determining. For instance, the thought that "I have to go and train today; I won't feel good about myself until I do it" is a form of internal control that is psychologically similar to being told by someone else that you *have* to go and train. In exploring this hypothesis, Ryan reasoned that ego involvement (the state in which one's self-esteem is made contingent upon doing well) is a type of internal regulation that is controlling. It should therefore be associated with less intrinsic motivation. On the other hand, he suggested, task involvement, in which the individual is intimately engaged in the activity and is not highly invested in the outcomes per se, is associated with minimal pressure and is conducive to higher levels of intrinsic motivation. In order to test this hypothesis, Ryan randomly assigned college undergraduates to conditions of ego involvement and task involvement. The results supported the hypothesis in that the ego-involved subjects displayed less subsequent intrinsic motivation than the task-involved subjects.

In another study [88], when people were made self-conscious by being placed in front of a mirror or a video camera, they became internally controlling and lost intrinsic motivation for the target activity. Whatever the means by which people become demanding and controlling with themselves, the results seem to be the same: They restrict their own self-determination and lose intrinsic motivation.

The distinction between internally controlling and internally informational events is very appealing for the realm of sports, even though it has not been directly tested. The two forms of self-regulation are very different and may have