

Self-Determination in Sport: A Review Using Cognitive Evaluation Theory

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Research on the issue of self-determination and its relationship to intrinsic motivation in sport is reviewed using cognitive evaluation theory (Deci & Ryan, 1985). It is argued that much of sport participation is a function of intrinsic motivation, and that such intrinsic motivation is facilitated by conditions conducive to autonomy or self-determination. The dynamics of self-determination have been explored in studies of the effects of external rewards, interpersonal contexts, and styles of self-regulation on intrinsic motivation. The implications of this body of work for sport psychology are discussed, as well as the relevant areas of sport motivation research that to date remain under-examined.

KEY WORDS: Motivation, Self-Determination, Ego-Involvement.

The investigation of motivation for sports entails the search for underlying processes that initiate and sustain one's participation (Alderman, 1974). In the early phases of the field this question was largely formulated as «what are the rewards for sport behavior?» However, as investigations proceeded, it became clear that the most salient motives for sports participation (outside of the professional sphere) are of an intrinsic nature. They concern the spontaneous experiences of interest, enjoyment and challenge that are inherent in sport activity per se, rather than contingencies and consequences of a separable, extrinsic nature (see, e.g., Gill, Gross, & Huddleston, 1983; Sapp & Haubenstricker, 1978; Wankel & Kreisel, 1985).

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The recognition of the significance of intrinsic motivation in sport psychology has led to a growing interest in the factors that can either enhance or diminish participants' intrinsic motivation and their corresponding levels of sport involvement. The 1980's witnessed a number of studies that applied theoretical work on intrinsic motivation in general to intrinsic motivation in sports. In this article, we review the work pertinent to Deci and Ryan's (1985) theory of intrinsic motivation and its application to sport behavior. In particular, we focus on the issue of self-determination, its relation to intrinsic motivation, and the factors associated with its enhancement versus diminishment. In addition we point to problems that remain unaddressed in this research area and some future directions that warrant attention.

Cognitive Evaluation Theory and Intrinsic Motivation

Deci and Ryan (1980, 1985, 1987, 1991) have developed a broad based theory of intrinsic motivation that includes a description of the place of intrinsic motivation in development and an explication of factors that either facilitate or undermine its expression. Briefly, they argue that intrinsically motivated activity represents the innate and spontaneous tendency of organisms to exercise and elaborate their capacities through active functioning. This spontaneous activity is manifest in such activities as play, curious exploration, and spontaneous interest in novelty. Deci and Ryan argue that this active tendency plays an important role in development, learning, and socialization in nearly every domain of life. Sport behavior typifies the organismic tendencies toward activity and mastery, being a domain in which people seek out challenge, exercise their skills and stretch their capacities (Ryan, Vallerand, & Deci, 1984). Cognitive Evaluation Theory, a mini-theory within Deci and Ryan's larger framework, has been forwarded as a set of hypotheses specifically concerned with social factors that influence intrinsic motivation.

The basic tenets of cognitive evaluation theory are as follows: First, intrinsically motivated activities are by nature autonomous or *self-determined*. Any environmental event that conduces toward a perception on the part of the actor that his/her behavior is not self-determined (i.e., has an external perceived locus of causality) will therefore tend to undermine intrinsic motivation. Conversely, factors that facilitate a perceived internal locus of causality will facilitate increased intrinsic motivation. Second, intrinsic motivation is also sustained by feelings of competence and the excitement of

challenge. Feedback that enhances one's sense of effectance is thus expected to increase intrinsic motivation, whereas feedback that diminishes one's sense of effectance will have the opposite effect. Non-optimal challenges fail to incite intrinsic motivation insofar as tasks that are either too easy or too hard are unlikely to lead to heightened feelings of competence. Third, Deci and Ryan argue that the motivational impact of feedback, rewards or other communications relevant to an activity will depend on their *functional significance* (i.e. psychological meaning). Inputs such as rewards, praise, or criticism tend to be perceived as either *informational* (as effectance relevant inputs), as *controlling* (as attempts to control or direct performance or behavior), or as *amotivating* (as conveying incompetence and helplessness). The theory suggests that inputs viewed by the actor as informational will enhance intrinsic motivation, whereas those perceived as controlling or amotivating will diminish it by differentially affecting feelings of self-determination and/or competence. A fourth and final proposition is that the issue of informational, controlling, and amotivating inputs is relevant not only to interpersonal events but also to intrapsychic regulation of action. In particular, *ego-involvement*, in which one feels pressure to attain certain outcomes in order to preserve self-esteem, represents an *internally controlling* input, and is associated with lessened intrinsic motivation (Ryan, in press).

There have been numerous studies testing the basic premises of cognitive evaluation theory, most of them occurring outside the area of sport. For example, decreases in intrinsic motivation for various tasks have been shown to result from giving subjects extrinsic rewards, such as money (Deci, 1971), food (Ross, 1975), good player awards (Lepper, Greene, & Nisbett, 1973), prizes (Harackiewicz, 1979), deadlines (Amabile, DeJong, & Lepper, 1976), and surveillance (Plant & Ryan, 1985). Conversely, factors presumed to increase perception of self-determination have been shown to enhance intrinsic motivation (e.g., Zuckerman, Porac, Lathin, Smith, & Deci, 1978). The common denominator in the studies mentioned is that inputs that affect one's perceived locus of causality or experience of self-determination affect one's level of intrinsic motivation.

It is noteworthy that the issue of self-determination is viewed by Deci and Ryan (1985, 1991; Ryan, in press) as just as important to the understanding of *extrinsic motivation* as it is to intrinsic motivation. By definition extrinsic motivation is in evidence when behavior is oriented towards instrumental outcomes that are separable from the behavior itself. Instrumental action, even though it is typically «intentional», can vary considerably in the degree to which it is autonomous or self-determined. A student,

for example, might play a sport «because I have to for the scholarship money»; or «because I think it helps me to stay healthy and vital». In both cases, the motivation is extrinsic and instrumental, but the former is characterized by considerably less self-determination than the latter. Recent theoretical and empirical work has begun to demonstrate how varied types of extrinsic motivation can be characterized along a continuum of autonomy and accordingly have different functional effects on motivation and performance in a variety of behavioral domains (Ryan & Connell, 1989; Fortier, Vallerand, Brière, & Provencher, 1995). Although this work on the relative autonomy of extrinsic motivation is relevant to much sport behavior, it is beyond our current focus on cognitive evaluation theory and its predictions concerning intrinsic motivation.

Examination of the effect of feedback on perceptions of competence is another line of research born directly from cognitive evaluation theory. Increases in intrinsic motivation have been shown as a result of positive feedback, while decreases in the same motivation have been shown to exist after negative feedback (Deci, 1971; Deci & Cascio, 1972). It has additionally been shown that changes in intrinsic motivation brought about by feedback are mediated by subjective changes in perceived competence (e.g. Vallerand & Reid, 1984; McAuley & Tammen, 1989). However, in line with cognitive evaluation theory, there is also evidence that positive feedback enhances intrinsic motivation only in contexts supportive of self-determination (Fisher, 1978; Ryan, Mims, & Koestner, 1983).

Lastly, research outside of sport has increasingly examined the role of internal events on intrinsic motivation. Internal thoughts or perceptions can be experienced either as pressured self-control or as more volitional self-regulation and are predicted to decrease or increase intrinsic motivation respectively. For example, Ryan (1982) showed subjects in an ego-involvement situation showed lower subsequent intrinsic motivation than those in a task involvement condition. Such findings have been replicated in various ages and settings (e.g., Plant & Ryan, 1985; Koestner, Zuckerman, & Koestner, 1987; Butler, 1987).

Cognitive Evaluation Theory in Sport

Although cognitive evaluation theory stresses issues such as optimal challenge and positive feedback as «motivating» factors in sport (Koestner & McClelland, 1990), the competence focus of this theory is not unique. A number of theories would agree that enhancing perceived competence also enhances motivation (e.g., Bandura, 1977; Csikszentmihalyi, 1975).

What is unique to cognitive evaluation theory is a focus on the role of self-determination or autonomy in promoting versus undermining intrinsic motivation. This issue is particularly relevant to the domain of sport (Vallerand, Deci, & Ryan, 1987) and is thus the primary focus of the present review. Despite the fact that sports participation is prototypically intrinsically motivated, it is also an arena in which pressures, expectations, performance goals, and rewards are often salient. In addition, sports can generate tremendous ego-involvement in participants, who often base their self-image contingently on their performance or success. For these reasons the issue of self-determination or «perceived locus of causality» is of great applied significance. A number of studies have either directly applied cognitive evaluation theory to sport behavior or are relevant in this regard.

A classic study by Orlick and Mosher (1978) examined how rewards influence intrinsic motivation for a motor task. Children (ages 9-11) were assigned to a reward (trophy) or-reward condition for play on a stabilometer. Four days later, the children participated in a post-test assessment of intrinsic motivation operationalized as the amount of time children engaged in the stabilometer task during a «free-choice» period. Results showed the time children in the reward condition spent playing on the stabilometer from pre- to post- test decreased significantly, while children in the no-reward condition significantly increased their play time from pre- to post-test. This and other studies (Halliwell, 1979; Thomas & Tennent, 1978) suggest that intrinsic motivation for sport-like activities is undermined by the use of rewards, insofar as they conduce toward a perceived external locus of causality. Watson (1984) reaches this same conclusion in a review of the literature addressing intrinsic motivation in children's sport, arguing not only that rewards undermine play and sport behavior, but also that they interfere with the process of intrinsically motivated learning in general.

The effects of controls and rewards have also been explored in the domain of collegiate athletics. E. Ryan (1977) surveyed male scholarship and non-scholarship athletes and measured their intrinsic motivation toward their sport. Scholarship athletes reported less enjoyment of their sport and more extrinsic motives for participation than non-scholarship athletes, indicating that scholarships can be perceived as controlling. Ryan (1980) subsequently examined the effect of collegiate sport scholarships on both men's and women's motivation toward their sport. Whereas scholarships undermined male football players' intrinsic motivation for football, intrinsic motivation of male wrestlers and of female athletes was not undermined by scholarships. E. Ryan interpreted these results using cognitive evaluation theory. Argued that football players perceived their scholarships to be a

way to control their participation on the team. However, wrestlers and women athletes, who at the time were receiving scholarships at a much lower frequency than football players, were more likely to interpret their scholarships as an acknowledgement of personal competence. Thus their awards did not undermine their intrinsic motivation for sport. Finally, in a recent study, Wagner, Lounsbury, and Fitzgerald (1989) found that scholarship college athletes were more likely to perceive their sport as «work» than non-scholarship athletes and that such work-oriented attitudes were associated with a more extrinsic style of sport participation.

Vallerand (1983) focused on the competence issue in intrinsic motivation in a study of the effects of positive feedback on youth hockey players. Subjects who received feedback reported more intrinsic motivation than those who received no feedback. In later studies, Vallerand and Reid (1984; 1988) elaborated upon these earlier findings and showed that perceived levels of competence mediate the relationship between feedback and intrinsic motivation, as predicted by cognitive evaluation theory.

Thill and Mouanda (1990) also tested aspects of cognitive evaluation theory in a study of African handball players. First, they examined the influence of reward and feedback upon motivation. They found that when positive feedback was paired with a monetary reward, no decrease in intrinsic motivation for handball resulted. When negative feedback was used alone or with a reward, however, a significant decrease in intrinsic motivation was in evidence. In a second experiment, the effects of choice and feedback on motivation were examined across time. Handball players were put in choice versus no-choice and positive versus negative feedback conditions for team exercises. Immediate increases in motivation were shown to occur in the positive feedback conditions. However, the effect of feedback was mediated by choice. After three weeks, an increase in intrinsic motivation for the task was primarily found in those groups who had experienced positive feedback and choice in task selection.

Together these studies suggest that factors which affect either the perceived locus of causality of one's behavior or feelings of competence also impact upon participation and enjoyment in sports. They also show that intrinsic motivation requires more than mere efficacy feedback-it also requires support for self-determination.

Interpersonal Influences on Self-Determination in Sport

An important issue in sports motivation is the way in which mentors, coaches, parents and other significant figures attempt to motivate or guide

the athlete. People's ideas of how to motivate vary considerably. Some assume that motivation is enhanced by external prompts, pressures, controls, praise and rewards; others feel that motivation is best actualized by minimizing the salience of such external incentives and structures, and instead supporting the autonomy and choice of the participants. Numerous studies outside the field of sports have shown that the attitudes and motivating behaviors of others can predict participants' motivational orientation and performance (Deci, Schwartz, Sheinman, & Ryan, 1981; Grolnick & Ryan, 1989; Deci, Connell, & Ryan, 1989). Despite the important role of coaches and mentors in the domain of sports there has been little work examining the relations between coaching styles, parental behaviors and athletes' motivation with regard to this dimension. However, a few relevant studies are emerging.

Sinclair and Vealey (1989) examined the effect of coach feedback and expectations on self-perceptions of adolescent female field hockey players. The players were divided into two groups-those from whom the coach expected higher versus lower levels of performance. Type of feedback from coach to athlete was then monitored by group and related to player perceptions of confidence, competence and self-esteem. Results of the study found that the high-expectation group received more overall feedback, more specific and evaluative feedback and less prescriptive or directive feedback than the low expectation group.

Brustad (1988) studied the effects of parental pressure upon perceptions of competence and motivation for youth basketball players. Brustad measured players' self-esteem, intrinsic motivation, perceived competence, win-loss record, parental pressure, and anxiety. Results showed that high intrinsic motivation for the game was associated with low parental pressure on the athlete. This research parallels findings of parental influences on academic intrinsic motivation (e.g., Grolnick & Ryan, 1989) and supports the tenets of cognitive evaluation theory concerning the effects of control on motivation.

A related line of recent research examines athlete preferences for amount of feedback or control received from the coach. Chelladurai, Imamura, Yamaguchi, and Oinuma (1988) compared feedback and control preferences for Japanese and Canadian athletes. Results of this research found that the Japanese preferred and received more autocratic (control-oriented) behavior from coaches, whereas Canadian athletes perceived themselves as receiving more democratic coaching behavior and positive feedback. Interestingly, Canadian athletes also reported higher satisfaction with team leadership and personal outcomes than the Japanese.

Two studies done by Anshel (1990; Anshel & Sailes, 1990) examined black versus white college athletes' perceptions of coaching control and feedback. The first study found that black athletes felt coaches exerted too much control over them before the game and were less receptive to negative feedback from the coach than were white athletes. In a second study, black athletes playing for white coaches were interviewed about their perceptions of the coach. Similar to the first study, the black athletes felt coaches used too much negative feedback and control during pre-game preparation and, as a result of this and other coaching behaviors, the athletes felt less trust or closeness to their coach.

To date, little work has addressed factors that produce autonomy-supportive versus controlling coaching styles. Courneya and McAuley (1991), however, in an interesting study, had undergraduates read scenarios depicting children in sport situations who exhibited either high or low interest in the activity. The undergraduates were then asked to choose low-control (reasoning, noninterference) or high control (rewards, punishment) strategies to maximize the child's interest in the activity. For children in the high interest group, low-control rewards were preferred, whereas for children in the low interest group, high control rewards were chosen more frequently. This suggests that people may be likely to appeal to external motivators to «instill» motivation where it is not apparent.

Together these studies attest to the importance of the interpersonal context in facilitating or undermining intrinsic motivation in sport. The evidence, though less than systematic, points in particular to the significance of autonomy-support versus control and of positive feedback in enhancing athletes' intrinsic motivation and continuing participation in sports. In addition there are intriguing relations between athletes' level of competence and the degree of control they receive. It appears that lower competence participants may actually receive less autonomy support, which in turn may further forestall intrinsic motivation.

Ego Involvement and Evaluation in Sport

Just as external pressures and rewards can negatively impact intrinsic motivation, so can certain intrapsychic pressures or dynamics. One very relevant type of internal regulation for sport behavior is that of *ego-involvement*. Ego-involvement is defined as the motivation to perform so as to enhance or sustain self-esteem (Ryan, 1982; Ryan, Koestner, & Deci, 1991). When an athlete tells herself, «Unless I perform well or unless we

win, I am not worth anything as an athlete», she is hinging her self-esteem upon success. In contrast, *task-involved* individuals are focused on the task itself rather than the outcome of the activity. Cognitive evaluation theory (Deci & Ryan, 1985) states that task-involved individuals are more likely to derive pleasure from participation, cope well with feedback, and demonstrate greater ongoing self-motivation, whereas ego-involvement represents an «internally controlling» state that undermines intrinsic motivation.

Duda (1989) related task versus ego involvement to perceptions of sport motivation, defining ego involvement as an orientation toward sport as a means of enhancing self-esteem or social status. This ego orientation was negatively related to personal mastery. On the other hand, a task-involved orientation was negatively related to a focus on using sport involvement for social status and positively associated with mastery, cooperation, an active lifestyle, and enhanced self-esteem, lending support to the cognitive evaluation theory perspective.

The role of competition as it relates to intrinsic motivation is relevant to the discussion of ego versus task involvement. Cognitive evaluation theory predicts that when a competitive situation is ego involving, decreases in intrinsic motivation will follow. If, however, the athlete perceives competition as providing informational, competence-related feedback, intrinsic motivation may not be undetermined, and may be enhanced (Deci & Ryan, 1985, 1987).

In situations involving indirect competition, Vallerand, Gauvin and Halliwell (1986a) showed that intrinsic motivation for a motor task decreased when subjects were pressured to beat an impersonal standard. On the other hand, Weinberg and Ragan (1979) reported that subjects in an indirect competition situation actually reported greater task enjoyment than subjects in a noncompetition situation. Clearly, in the Vallerand et al. study, the pressure to achieve created a situation of ego-involvement in the subjects. By contrast, subjects in the Weinberg and Ragan study may have interpreted the indirect competition situation as informational rather than controlling, resulting in lessened ego-involvement.

Research has also examined the effects of direct competition on level of intrinsic motivation. Deci, Betley, Kahle, Abrams, and Porac (1981), using a direct-competition paradigm, showed that even subjects who were allowed to beat a confederate in a puzzle task showed decreased intrinsic motivation for the task relative to non-competing subjects. Vallerand, Gauvin and Halliwell (1986a), in a subsequent study, divided children into competition and mastery orientation groups and had them work on a motor task. Only those subjects in the competition group displayed a decrease

in intrinsic motivation for the task. Similarly, Vallerand, Hamel, and Daoust (1992) compared competitive, cooperative and individualistic conditions for performance at an interesting task. Results showed that subjects in a cooperative circumstance were more intrinsically motivated than those in either the individualistic or competitive settings. Such studies point out that competition does at times undermine intrinsic motivation, presumably because the issue of winning versus losing can become an extrinsic, controlling focus (see also Kohn, 1986).

However, competition need not always be ego-involving, nor undermining of intrinsic motivation. This was highlighted in a very recent study by Reeve and Deci (1992) that examined the effects of conditions intended to maximize the informational versus controlling aspects of competition on intrinsic motivation. Controlling aspects of competition were highlighted through a «pressure to win» induction, whereas informational conditions allowed subjects to win without pressuring them to do so. As predicted, winning a competition in the controlling condition led to decreased intrinsic motivation, whereas winning a competition in the informational condition actually enhanced intrinsic motivation. The study also demonstrated that the effects of competition on intrinsic motivation were mediated by subjects' feelings of self-determination and competence, as specified in cognitive evaluation theory.

Despite such differential effects, it is also clear that intrinsic motivation will likely be higher for those who win versus lose at competitive events. For example, Vallerand, Gauvin and Halliwell (1986b) found that not winning in a simple motor task decreased subjects' intrinsic motivation, as well as competence at the task. Reeve, Olson, and Cole (1985) found the same result in an undergraduate population. In a later study, Reeve, Olson, and Cole (1987) also showed that locus of control and achievement motivation may interact with task outcome (win versus lose) to predict subsequent levels of intrinsic motivation.

Overall, competitive situations can be thought of in terms of their potential to create ego involvement. In competitive situations attention is often on winning, which can become an extrinsic focus, implicating the participant's sense of self-worth or esteem. The pressure and outcome focus that result are the components of competitive situations that seem to negatively affect intrinsic motivation. But it is also evident that competition does not always, nor «inherently», disrupt intrinsic motivation. Competition, where participants try their hardest and put out their all, can be a highly «informational» context that provides considerable effectiveness-relevant feedback (see Ryan, Vallerand, & Deci, 1984). Thus, at issue is

the degree to which participants and coaches use competitive settings as opportunities for feedback and task involvement, or instead emphasize winning and ego-involvement. Coaches who think that «winning is the only thing» are likely to induce ego-involvement in their players and undermine their long-term participation in sports. Interestingly, coaches who create ego-involvement atmospheres may unwittingly also be impairing performance in many sport activities, since the internal, (insert comma) pressured state of ego-involvement can be detrimental to smooth motor performance (chi to comma). perception, and «flow» (see, e.g., Galloway, 1974; Galloway & Kriegel, 1977).

Motivational Differences Between Sport and Exercise

Although it is assumed that sport participation is typically accompanied by a high degree of intrinsic motivation, it has been hypothesized that some physical activities may be less intrinsically motivated. Brawley and Vallerand (1984), for example, argued that some physical activities, such as fitness programs, are more likely to draw people to participate for extrinsic reasons, such as losing weight or feeling more attractive. They reasoned that such extrinsic foci may be associated with high drop-out rates. In addition, such individuals may never learn to appreciate or enjoy the activity or the experience of working out *per se*, which also may lead to discontinued participation, especially if the goal of the program becomes difficult to reach or it becomes less important over time.

Thompson and Wankel (1980) examined the impact of perceived choice in a fitness setting. Women, registering for a fitness program, were assigned to choice or no-choice conditions. The women in the choice condition were told that their preferences for fitness activities were taken into account when a fitness plan was developed for them, while women in the no-choice group were told their preferences were not considered. In reality, for both groups actual assignments were based to the same degree on activity preference. Over the course of six weeks, attendance for the perceived-choice group was significantly higher than that of the no-choice group, supporting the view that increasing one's sense of self-determination enhances continuing motivation even for fitness activities.

Frederick and Ryan (1993) examined differences in motivational focus among 376 adults engaged in either sport or fitness activities. Individual sport participants were involved in activities such as tennis and sailing, while fitness activities were those such as running, aerobic and nautilus. They

examined three types of motivation using a factor analytically derived measure: a) interest/enjoyment — participation for fun, enjoyment, interest; b) competence — participation for skill development or challenge; and c) body-related — an extrinsic focus primarily on weight or appearance. Results indicated that the individual sport group had higher interest/enjoyment and competence motivation than the fitness group, whereas the fitness group showed higher body-related motivation than the sport group. Sex differences in participation motivation were also apparent. Men showed higher competence motivation than women, while women showed higher body-related motivation. These results have been replicated using another sample of 133 college students. Correlational evidence from these studies further showed that body-related motivation was negatively associated with number of hours per week of participation, length of workouts, and perceived future participation. On the other hand, interest/enjoyment and competence participation motivations (both considered to be more intrinsic in nature) were positively correlated with number of hours of weekly participation, perceived competence and satisfaction with the activity.

Studies such as Brawley and Vallerand (1984) and Frederick and Ryan (1993) indicate that types of sport activity may be associated with differing motives for participation. Insofar as fitness oriented programs are rapidly increasing, this area of research warrants further attention. Clearly the benefits to physical and mental health derived from them cannot occur unless individuals adhere to a regular program (Dishman & Ickes, 1981, Folkins & Sime, 1981; American College of Sports Medicine, 1991), and motivation may play a critical role in promoting such adherence.

Operationalizing Intrinsic Motivation

Intrinsic motivation entails doing something «for its own sake», that is, for the rewards inherent in the activity itself. According to Deci and Ryan (1985), these inherent rewards are the feelings of self-determination and competence associated with challenging activity.

Given this definition, several ways of measuring intrinsic motivation are readily apparent. The most obvious is that one can tap intrinsic motivation by assessing the subjective experiences surrounding target activities, particularly experiences of enjoyment, interest, and felt competence. Several questionnaires have been developed that assess intrinsic motivation precisely through self-reports of such variables (e.g., Harackiewicz & Manderlink, 1984; Harter, 1981; McAuley & Tammen, 1989). The limitation of self-report approaches is that variables such as enjoyment and felt competence

can also accompany some kinds of extrinsic satisfactions. Thus, one can enjoy an activity *per se*, enjoy being rewarded for an activity, or enjoy a setting in which one was rewarded. Care in the focus and wording of self-report assessments is thus critical.

Another approach to operationalization is a behavioral one, in which people's persistence at an activity in the absence of extrinsic inducements or controls is used to index their level of intrinsic motivation. This approach is the basis of the «free-choice» paradigm initiated by Deci (1971), in which the amount of time subjects spend on an activity when they expect no reward or feedback, is the major index of intrinsic motivation. Research has employed this operationalization effectively and this behavioral measure is generally, though not invariantly, correlated with well-constructed, multiple-item, self-report measures of interest/enjoyment (Deci & Ryan, 1985). However, recently Ryan, Koestner, and Deci (1991) showed that even this measure requires careful interpretation. In particular, Ryan et al. demonstrated that one could create conditions conducive to «ego-involved persistence» in which subjects would continue at an activity without reward if supplied with «nonconfirming feedback» at a self-esteem linked activity. In such cases, free-choice persistence tends to be uncorrelated with measures of interest/enjoyment.

As with all complex psychological constructs, intrinsic motivation is thus not entirely captured by any single operation or procedure. Being both a phenomenological and behavioral concept, intrinsic motivation appropriately eludes reification, and its explication rests instead on a nomological net of findings and assessment vehicles. More extensive discussions of methodology are available in Ryan et al. (1991) and Deci & Ryan (1985).

Summary and Future Directions

Intrinsic motivation has been increasingly recognized as an important factor in generating and maintaining sports participation, and, accordingly, a growing number of empirical, theoretical, and applied studies have emerged. Research has addressed the effects of rewards and praise on intrinsic motivation and challenge seeking; the interpersonal style of coaches and mentors; the impact of ego-involvement on motivation and performance in sport; the relations between ego-involvement and competition; and the relative salience of intrinsic motivation for different types of physical activity.

These areas of inquiry are far from fully mapped out, and in some of them basic studies have yet to be accomplished. For example, there is

little research on specific coaching behaviors that conduce toward either self-determination or feelings of being controlled on the part of athletes. And to date there is little investigation of how parents' attitudes and styles affect the intrinsic motivation of young athletes. Sex differences in reaction to competition and activity types have also been obtained in several studies but a systematic picture has not yet emerged. Increased research on the social context of intrinsic motivation in sport would help address these significant practical issues.

Preliminary studies have also identified potential motivational differences between various types of physical activity, and corresponding differences in participation variables. Yet this relationship between activity type and motivation may be a function of the types of people who enter sports versus fitness activities and/or in the nature of the activities themselves. In addition, research could help to answer questions such as: What behaviors can fitness educators use to increase enjoyment of a sport or fitness activity? or What can fitness educators do to change an external orientation to an activity to an internal one?

Finally, there is a large literature on the relations of ego involvement to intrinsic motivation in other spheres, particularly education (Nicholls, 1984; Ryan & Stiller, 1991). With the increasing recognition of the importance of mental training skills for athletes, many of which include self-talk strategies, research investigating the effect of the type of internal coaching styles athletes apply to themselves seems timely and relevant. Furthermore, understanding of the complex motivational effects of competition could be aided by a fuller psychology of ego involvement in the domain of sport.

Overall, since the original presentation of cognitive evaluation theory, research relating to this motivational framework has grown. Although significant strides have been made to bring this theoretical perspective into the world of sport, there are many implications that remain untested. More generally, inquiry into the nature of intrinsic motivation and its relation to sport behavior raises important issues about how we can facilitate the volition and self-determination of athletes and in so doing enhance their enjoyment and ongoing participation.

RÉSUMÉ

La recherche sur la conséquence de l'auto-détermination et ses relations avec la motivation intrinsèque en sport est analysée en référence à la théorie de l'évaluation cognitive (Deci & Ryan, 1985). Il est montré qu'une part importante de la participation sportive

est fonction de la motivation intrinsèque, et qu'une telle motivation intrinsèque est induite par les conditions qui mènent à l'autonomie ou à l'auto-détermination. La dynamique de l'auto-détermination a été explorée dans les études sur les effets sur la motivation intrinsèque, de récompenses externes, les contextes interpersonnels et les styles d'auto-régulation. Les implications de ces travaux pour la psychologie du sport sont discutées, ainsi que les thèmes de recherche qui, en motivation sportive, ont été peu explorés.

RESUMEN

Este ensayo, utilizando la teoría de la valuación del conocimiento (Deci y Ryan, 1975) analiza las investigaciones por lo que se refiere a la autodeterminación y a sus conexión con la motivación interior.

Se propuña que la práctica deportiva sea, por amplia parte, función de la motivación interior y que esta motivación interior resulte favorecida por condiciones que estimulan autonomía y autodeterminación.

La dinámica de la autodeterminación fué estudiada por medio de investigaciones que analizaban los efectos producidos sobre la motivación interior por las ayudas externas, por las situaciones interpersonales y por los modelos de autoregulación.

Fueron analizadas las implicaciones de estas investigaciones por lo que se refiere a la psicología deportiva, y también a las áreas de investigación motivacional en ámbito deportivo que, hasta hoy, se han analizado muy poco.

ZUSAMMENFASSUNG

Die Studie, die unter Anwendung der Theorie der Erkenntnisrevolution von Deci und Ryan durchgeführt wurde, analysiert die Forschungen über Selbstbestimmung und die damit zusammenhängenden intrinsischen Motivationen.

Es wird nachgewiesen, daß ein erheblicher Teil der sportlichen Aktivitäten größtenteils von der intrinsischen Motivation abhängt und daß diese letztere von solchen Bedingungen gefördert wird, die Autonomie und Selbstbestimmung anregen.

Die Dynamik der Selbstbestimmung wurde untersucht, indem die Wirkungsweisen von von außen geleisteter Hilfe, zwischenmenschlichen Situationen und Selbstregulierungsmodellen auf die intrinsische Motivation analysiert wurden.

Es folgt eine Erörterung der mit dieser Forschungsarbeit zusammenhängenden Implikationen im Kontext der Sport-psychologie, aber auch der Motivierungen in sportlichen Bereichen, ein Sektor, der bis heute noch wenig erforscht ist.

RIASSUNTO

Questo studio, effettuato utilizzando la teoria dell'evoluzione cognitiva di Deci e Ryan, analizza le ricerche sulla autodeterminazione e le sue connessioni con le motivazioni interiori.

Si dimostra che una parte importante della pratica sportiva è in gran parte in funzione della motivazione interiore e che quest'ultima risulta favorita da condizioni che stimolano l'autonomia o l'autodeterminazione.

La dinamica dell'autodeterminazione è stata studiata mediante ricerche che analizza-

vano gli effetti prodotti sulla motivazione interiore da aiuti esterni, da contesti interpersonali e dai modelli di autoregolamentazione.

Vengono discusse le implicazioni connesse a queste ricerche con riferimento alla psicologia sportiva ed anche alle aree di ricerca delle motivazioni nell'ambito sportivo, cosa fino ad oggi analizzata solo raramente.

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