

Physical Activity and Intrinsic Motivation

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HIGHLIGHT

“Children are born intrinsically motivated to be physically active. That motivation—if kept alive by physical success, freedom, and fun—will do more than promote the fitness behaviors that add years to life. It will maintain the physical zest that adds life to the years.”

INTRODUCTION: THEORY DEVELOPMENT

Over the past 20 plus years, we have accumulated considerable evidence to document the health benefits of physical activity. Researchers have established with a fair degree of confidence just how much physical activity is necessary to produce fitness improvement and benefits to health (ACSM, 1990; Pate et al., 1995; DHHS, 1990). Given this rather clear picture of how to obtain desirable benefits, an obvious question is why do less than one quarter of the population engage in light-to-moderate physical activity? The answer to this question is found largely in the realm of psychology—specifically in the area of motivation. The task of this topic is to review current knowledge and to translate it into suggestions for enhancing physical activity. Specific guidelines for fostering intrinsic motivation toward physical activity are outlined.

Motivational studies have long focused on factors that initiate, influence, and modify behavior. Early theories dealt essentially with the *deterministic* aspects of those factors; focusing on instinctual drives (e.g., Freud, 1923/1962), physiological drives (e.g., Hull, 1943), or environmental influences (e.g., Skinner, 1953, 1971). Although these theories had (and still have) considerable value, their apparent view of people as passive beings that are pushed and pulled around by their physiology or environment has given rise to concern and criticism. A different point of view was published as a monograph by White (1959), who proposed that people are driven by a need to be *competent*, or *effective* in mastering all aspects of our environment. He suggested that when attempts to master the challenges of our surroundings were successful, the result was positive—a “feeling of efficacy” (p. 329)—which, in turn, served intrinsically to motivate further behavior. White’s monograph led to a wealth of study on intrinsic motivation, and in that respect it can be seen as the foundation of subsequent studies that are described below.

REFINEMENTS OF THE THEORY

A major development of White's (1959) monograph is represented by the addition of a formal statement of *cognitive evaluation theory* (Deci, 1975; Deci & Ryan, 1985). Cognitive evaluation theory states that intrinsic motivation is driven by an innate need for competence and self-determination in dealing with one's surroundings. The intrinsic rewards for the behaviors motivated by this need are satisfying feelings of competence and autonomy, positive emotions such as enjoyment and excitement, and possibly the sensation of flow (complete absorption in the activity). These feelings, in turn, serve to maintain or increase a person's intrinsic motivation for the particular behavior.

In a nutshell (according to the theory), an individual's desire to pursue a particular activity depends upon whether his or her feelings of competence, autonomy, and positive affect persist over time. Conversely, if an individual begins to perceive him or herself as incompetent at the activity and/or under external control to do it, then his or her intrinsic motivation is undermined. The outcome is then either a state of *extrinsic motivation* (the activity might continue dependent on the continuance of external rewards and/or coercion), or a state of *amotivation* (further activity unlikely because the perceptions of incompetence lead to a sense of futility).

A wealth of studies in general psychology have supported the validity of cognitive evaluation theory. Many studies have clearly shown that when individuals receive information that undermines their sense of competence and/or perception of self-determined choice, their intrinsic motivation declines. Readers who wish to review that research comprehensively are referred to Deci and Ryan (1985). However, of immediate interest to this paper is an overview of the ways in which intrinsic motivation is enhanced—or undermined—in the field of sport, exercise, and other physical activities.

INTRINSIC MOTIVATION IN SPORTS AND EXERCISE

Common sense alone tells us that participation in many sports and physical activities can lead to feelings of autonomy and competence and may produce joy, excitement, thrills, and other satisfying emotions. In that respect it is easy to see that physical activities may be inherently intrinsically motivating. On the other hand, some people say that they would not participate unless there was a material payoff, or unless they were coerced. Others declare that attempting physical challenges leaves them feeling incompetent and humiliated, anxious or pressured. Thus, if we wish to help people reap the benefits of participation and avoid the motivational pitfalls, it is necessary to understand the processes that may lead to specific perceptual outcomes.

Persistence at exercise is related to the motivational constructs described above and has research support. For example, young athletes cite "fun" as a primary reason for participating in sports (Gill, Gross, & Huddleston, 1983; Scanlan & Lewthwaite, 1986). Further examination has shown that this feeling of fun depends on experiencing the intrinsic satisfactions of skill improvement, personal accomplishment, and excitement—rather than being a result of extrinsic factors such as winning, getting rewards, or pleasing others (Wankel & Kreisel, 1985; Wankel & Sefton, 1989). Similar findings have also been related by Gould (1987) in a review of the reasons why children drop out of sports, and by Brustad (1988) from a study of affective outcomes of competitive youth sport.

However, as researchers know well, circumstantial support for the use of a theory of motivation to a particular area (in this case physical activity) is not enough to make a case for its value. The theory should also hold up under experimental testing. In particular, manipulations of people's perceptions of competence and control should produce changes in their intrinsic motivation. Unfortunately, there is not the volume of evidence in the physical activity setting as there is in general and educational psychology, but several studies do show support for the hypotheses predicted by intrinsic motivation theory.

For example, Orlick and Mosher (1978) hypothesized that an extrinsic reward (a trophy) for performance on a stabilometer (balance board) would be perceived by children as controlling—and thus their intrinsic motivation for what is generally an interesting and challenging physical task would be undermined. The hypothesis was supported: When given a free-choice period, the children whose earlier participation was for a trophy showed a decrease in the time they spent voluntarily playing on the stabilometer compared to the children who had no expectation of a reward.

In another study of performance at a stabilometer task, Rudisill (1989) hypothesized that training children to understand that their performance improvement was personally controllable (i.e., dependent on practice and effort) would improve their subsequent performance—and would also lead them to persist longer at mastery attempts—even in the face of perceived failure. Again, the results of the experimental manipulation supported the hypothesis that perceptions of personal control enhance intrinsic motivation.

Taking research outside the laboratory, Thompson and Wankel (1980) manipulated the perception of exercise choice of adult women who had recently enrolled in a health club. After an initial meeting to discuss activity preferences, the women were randomly allocated to either a perceived choice or a perceived no-choice condition. The initial activity preferences were actually used as the basis for all of the women's programs. However, the women in the no-choice group were led to believe that they had been assigned a standard program determined by the instructor. Six weeks later the attendance of the women in the perceived choice group was higher, and they also expressed a greater intention to continue exercising at the health club.

Experimental manipulations designed to affect perceptions of competence at physical activities have also been shown to change intrinsic motivation in line with the predictions of the theory. As before, some studies have employed a stabilometer. For example, Weinberg and Jackson (1979) gave subjects bogus success or failure feedback for their balancing ability by telling them that they had either exceeded the 82nd percentile (“...very good...”), or they had fallen below the 18th percentile (“...not very good...”). In line with intrinsic motivation theory, success feedback enhanced interest and enjoyment, and reduced boredom with the task—and failure feedback had the opposite effect.

Using a similar type of protocol and a stabilometer task, Vallerand and Reid (1984, 1988) manipulated feedback by making verbal comments to subjects suggesting that they were doing either well or poorly. Like Weinberg and Jackson (1979) the results showed that success feedback led to enhanced intrinsic motivation while lack of success feedback reduced it. Additionally, a more in-depth analysis of the results allowed the experimenters to show that it was not the effect of the feedback per se, but rather it was the effect of feedback on the subjects' perceptions of competence that moderated changes in intrinsic motivation. In other words, this study showed that it was not the feedback itself so much as the *meaning* of the feedback to the subjects that produced the motivational outcome.

Wishing to see if similar results would be obtained from manipulations of feedback in a youth physical fitness testing situation, Whitehead and Corbin (1991) set up an experiment in a junior high school using a shuttle run-type fitness test (the Illinois Agility Run). Bogus high or low percentile feedback was given to randomly determined groups, and the results replicated the Vallerand and Reid (1984,1988) findings. Again, apparently high percentile scores raised intrinsic motivation and low percentile scores lowered it—and as before, the motivational outcomes were mediated by the subjects' *perceptions* of competence at the task rather than directly changed by the feedback itself.

Applying Theory to Practice

The following recommendations represent an attempt to translate logically the theoretical exposition into guidelines for promoting motivation in practical situations. Note that although these guidelines are presented as a series of DOs and DON'Ts, they are not meant to be coercing or controlling. The reader has the choice of which to accept!

- DO try to emphasize individual mastery.

Since the foundation of intrinsic motivation is said to stem from a need to be effective it makes sense to begin with a recommendation for promoting competence perceptions. For example, when giving feedback to an exerciser or sport participant in a coaching or teaching situation, try to reinforce the personal progress that has been made (e.g., "You're really starting to get the hang of that backhand stroke."). Also, sweeten bitter medicine by prefacing comments with a competence-promoting introduction (e.g., "If you want to make that good shot great—why not try to . . .").

- DON'T overemphasize peer comparisons of performance.

This is an alternative form of the previous recommendation. Peer comparisons inevitably do the greatest motivational damage to those who need encouragement the most—those with low ability. Teachers, coaches, and fitness leaders should consider the perceptions that are created by their grading plans, or other evaluation procedures. In particular, since children's fitness test *scores* are determined to a considerable degree by genetics and level of maturation, the use of rankings, curves, or percentile tables for evaluation is questionable. What counts is an active lifestyle—so why not find a plan that reinforces mastery of the learning and participation *process*? (See Fox & Biddle, 1988, for an exposition on this point.)

A footnote to this part: Since comments (like those above) about the use of percentiles have sometimes been interpreted as a blanket castigation, a clarification is merited. Although the use of percentiles for *individual* evaluation is questioned, this is because (by definition) it forces peer comparison—and, consequently, it promotes competitive competence-seeking orientations. In contrast, the calculation of percentile scores to follow national fitness changes over time would be an example of a highly appropriate use of comparative data.

- DO promote perceptions of choice.

A second conceptual area for recommendations is concerned with the other fundamental aspect of intrinsic motivation—perceptions of control. In many ways translating this guideline into action involves awareness of the connotations of words

and phrases. For example, consider the meaning of the term “exercise *prescription*.” This language certainly doesn’t suggest choice. On the other hand, this does not mean that exercise leaders and teachers have to let participants do whatever they want! A perception of choice can be fostered—even within fairly narrow guidelines—providing reasons are given for constraints. Thus an exercise leader might be advised to explain which activities, equipment, facilities, etc., are appropriate for a client’s current fitness level—but then a choice should be allowed from within that range.

■ **DON’T** undermine an intrinsic focus by misusing extrinsic rewards.

This guideline is a different way of expressing recommendations concerning perceptions of control. If the answer to the question: “Why are we doing this exercise, skill, fitness test, sport, etc.?”—is “Because it’s for a payment/trophy/reward,” or “Because you have to do it,” then the focus is moved to external regulation. In that case the behavior will most likely cease when the extrinsic motivator is won, lost, or removed. This does not mean all forms of awards are harmful. It depends on how they are perceived. Because of a growing appreciation of this point, recently disseminated youth fitness programs have emphasized individual competence attainment by using *recognition* (of exercise participation and mastery) schemes, rather than employing the extrinsically focused traditional awards that are solely dependent on fitness test results (Fitness Canada, 1992; Prudential FITNESSGRAM, 1992).

■ **DO** promote the intrinsic fun and excitement of exercise.

Fortunately, this is easy to do because many physical activities are naturally intrinsically motivating—so long as we keep them that way by attention to the other guidelines.

■ **DON’T** turn exercise into a bore or a chore.

To use an analogy: Rather than a bland repetitive “diet” of a physical activity, think of a “menu” in which taste is enhanced by variety, new “recipes,” and the “sugar and spice” of fun, excitement, and thrills (Whitehead, 1989). In the same vein, it should be remembered that health-related fitness is a construct that is adult-oriented (Malina, 1991). This is not meant as a criticism of health-related fitness itself. The point (particularly when dealing with children) is that we should not overshadow the *play* value inherent in physical activity with an overbearing view of its potential as a “medicine.”

■ **DO** promote a sense of purpose by teaching the value of physical activity to health, optimal function, and quality of life.

This recommendation is designed to highlight the motivational value of cognitive learning. Even if many forms of exercise do not produce the intrinsic rewards of excitement, pleasure, etc., knowledge of the benefits of exercise may promote a sense of purpose for choosing to do it. It may also require the development of cognitive skills such as fitness self-evaluation and problem solving (Corbin, 1987). Research on the outcomes of conceptually based fitness classes does support the premise that learning fitness knowledge and skills promotes activity in the future (Slava, Laurie, & Corbin, 1984).

■ **DON’T** create amotivation by spreading fitness misinformation.

While this might seem painfully obvious, the sobering reality is that many people believe in ineffective or dangerous methods of weight management (e.g., fad diets, spot reducing, sauna suits), and many others are hoodwinked into paying for quack methods of fitness improvement such as passive exercise or unproven dietary supplements (Gauthier, 1987; Jarvis, 1992; Lightsey & Attaway, 1992). Unfortunately, the likely motivational penalty for the continued failure that results from the use of ineffective or useless products and methods is amotivation. True fitness professionals are thus urged to make every effort to disseminate knowledge that is derived from good science and experience.

THE INDIVIDUALITY OF PERCEPTIONS

So far, and in its simplest form, the theoretical model of motivation has been presented as follows: Our intrinsic need to be competent or effective motivates mastery behaviors. If the attempts are self-determined and successful, then intrinsic motivation is maintained or enhanced. If not, intrinsic motivation is undermined and may be replaced by extrinsic motivation or amotivation. However, as several of the studies above have shown (e.g., Thompson & Wankel, 1980; Vallerand & Reid, 1984; Whitehead & Corbin, 1991) this is an oversimplification. It is a person's *perception* of events that counts. A person's motivation will depend on his or her personal *cognitive evaluation* (through intuition and appraisal) of success and autonomy in any particular situation. Given that point, it is obviously important to try to understand factors that lead to individual differences before the theory can be translated into guidelines for motivational enhancement (see the box earlier in this topic).

A primary concern is the need for an understanding of differences in the ways in which individuals form perceptions of competence. There appear to be three main ways (or orientations) in which individuals judge their competence. Those with a *competitive* orientation tend to compare their abilities or performance to those of their peers. Those with a *cooperative* orientation tend to look for social approval while involved in group activities. Those with an *individualistic* orientation tend to focus more on their individual improvement and task mastery (Ames & Ames, 1984). Logically, an obvious potential problem with a competitive orientation is that it leads to perceptions of winning and losing that are dependent on who beats whom, or where a person ranks in a hierarchy (e.g., a percentile table). In contrast, a cooperative, or more particularly, an individualistic orientation would seem to hold more hope of personal success because improvement under those conditions almost inevitably results from effort and practice.

This logic has been supported by research in sport and fitness settings. For example, Marsh and Peart (1988) randomly assigned eighth-grade girls to fitness classes that either stressed competition or cooperation. Results showed that the cooperative program led to enhanced perceptions of physical competence. Similarly, Lloyd and Fox (1992) studied adolescent girls in a fitness program. They found that putting the focus on an individualistic orientation led to improvements in enjoyment and motivation compared to the outcomes of a competitively focused environment. The logic also held in a sport setting: Seifriz, Duda, and Chi (1992) found that when high school basketball players perceived an individual mastery-oriented climate in their practice sessions they experienced more enjoyment and had higher intrinsic motivation compared to those players who perceived practice as a more competitive performance-oriented environment.

Also of immediate concern is the need to appreciate how events may be perceived as controlling. The previously mentioned Thompson and Wankel (1980) study showed that the perception of choice can be modified and other studies have revealed that the context in which potentially controlling events occur makes a difference. For example, Ryan (1980) found some sport specificity in whether athletes perceived sport scholarships as affirmations of their competence (thus supporting intrinsic motivation), or as extrinsically controlling (thus undermining intrinsic motivation). Specifically, athletes in the sport of football (where scholarships were common at that time) were more likely to perceive the scholarships as controlling than were wrestlers or female athletes (for whom scholarships were rare in the late 1970s).

Other research has shown several other factors that may or may not be perceived as controlling depending on the social context and informational emphasis. For example, competition, performance awards, and coaching styles can produce alternative outcomes. Unfortunately, space limitations preclude a detailed citation of individual studies here, but it may be sufficient to say that a common determining factor of an extrinsic focus is whether an individual senses an external pressure to perform or behave in a particular way. Readers who wish to look further at research on those topics are encouraged to read the review by Vallerand, Deci, and Ryan (1987). Suggestions for practitioners may be found earlier in this paper.

SUMMARY

This paper argues that intrinsic motivation is one key element in promoting active healthy lifestyles. Figure 5.1, “The Stairway to Intrinsic Motivation,” provides a visual summary of the various stages of personal motivation. The wise use of the guidelines presented in the preceding pages will help people avoid the constraints of amotivation, and may help them to move beyond externally controlled forms of motivation to self-determined and intrinsic motivation. Well-tested theory suggests that personal competence and control are the essential foundations of intrinsic motivation. Fortunately, a wide variety of sports and physical activities are available, and these provide many opportunities for self-chosen optimal challenges that can help *all people* to enjoy the sense of autonomy and mastery that underpins intrinsic motivation. By their very nature, most physical activities are intrinsically appealing because of their benefits to personal wellness, and because of the fun, excitement, and thrills that can result from participation in them.

INTRINSIC MOTIVATION

“I do this behavior for its own sake and because I want to. I like the feelings of success and enjoyment that come from doing it right.”

INTEGRATED REGULATION

“I do this behavior because it symbolizes who and what I am.”

IDENTIFIED REGULATION

“I purposely choose to do this behavior because it’s a means to an end that I value.”

INTROJECTED REGULATION

“I do this behavior because I feel a tension inside me (e.g., guilt) that pressures me into doing it.”

EXTERNAL REGULATION

“I do this behavior for pay or a reward—or because I am coerced into it.”

AMOTIVATION

“It’s futile for me to even attempt this behavior because I don’t see much chance of success at it—or of receiving any other type of payoff.”

*The different types of motivation are from Vallerand and Reid (1990) and Vallerand and Bissonnette (1992). The examples of cognitive self-statements in the figure are based upon their descriptions. The arrangement of the types into a stairway, and the inclusion of the three thresholds is the work of the author of this paper.

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