

chapter

4



Individual Behavior and Motivation

The cover of *Time* magazine for August 29, 1983 displayed a picture of "Daredevil Ben Colli" with the caption "Wheeeeeeee! Chasing Thrills and Adventure." The subject of the photograph was infamous for his high-speed rappelling descents from atop skyscrapers. The cover story, entitled "Risking It All" contained stories of bungee jumpers, mountain climbers, swimmers, runners, paddlers, parachutists, pilots, and sailors. The author of the piece (Skow, 1983) wrote: "There have always been adventurers, footloose and sometimes screwloose, and their 'Why not' has always stirred alarming and delicious fears in settled souls whose timid question is 'Why?'" (p. 52)

To help you deliver your adventure program more effectively, it helps to better understand individual behavior during adventure experiences. In this chapter, we'll explain some of the social psychology theories that have contributed to the present body of knowledge regarding human motivation in times of risk and adventure. To show you real-life applications of these theories, we'll include pertinent examples of common outdoor activities.

PHYSIOLOGICAL AND PSYCHOPHYSIOLOGICAL FACTORS

The uninitiated public often ask "Why? Why would anyone in their right mind climb a mountain, paddle a river, descend a ski slope, or jump out of an airplane?" Mallory's historic answer "Because it's there," made in reference to his plan to ascend Everest in 1924, sheds little light on what motivates people to take risks in the first place. The idea that some people are "adrenaline junkies" and that they are addicted to thrill seeking may seem somewhat humorous. On closer inspection, however, physiological studies suggest that this may be closer to the truth than experts or laymen originally suspected.

Endorphin High

Endorphins are hormone-like chemicals released into the bloodstream during times of stress. Their chemical structure resembles narcotic compounds such as opium, and they have similar effects on the nervous system without the negative side effects that often accompany illicit

drugs. The well-known "runner's high" that dulls sensations of pain and gives feelings of limitless strength or endurance to marathoners is just one positive example of endorphins in action.

We humans have a need for a certain amount of stress in our lives to maintain the level of endorphin secretion we have come to expect. Some people have enough stress in their daily lives. Others have greater needs and often fulfill their desires by consciously seeking stimulation through risk-taking adventures (e.g., Bunting, 1987; Schreyer, White, & McCool, 1978; Selye, 1974; Zuckerman, 1979). While this explanation of motivation is based in human physiology, other theories examine the social psychology of adventure.

Optimal Arousal

In the book *Why People Play*, Ellis (1973) discusses his **optimal arousal theory of play**, asserting that the human brain is a continually active organ in need of ongoing stimulation. Deprived of external stimulation, for example during sleep, the brain manufactures its own arousal in the form of dreams. This optimal behavior is easily observed in children (most of Ellis's work was conducted in the children's play laboratories), during which without external stimulation from a parent or friend, they will seek their own arousal in the form of imagined or other independent play. Since adventure is seen by some as a form of adult play (Carpenter & Priest, 1989), the optimal arousal theory of play behavior may apply to adults as well.

The level of arousal of the brain is related to the amount of information it is receiving. The

more information received in a set period of time, the higher the arousal; the less information coming in, the lower the arousal. People may be over- or underaroused by the conditions around them, and levels of arousal in the same situation differ for various people. Based on these principles, a unique level of "optimal arousal" exists for each individual. Ellis believed this was the point at which performance is at its maximum. Figure 4.1 diagrams the relationship between performance and arousal.

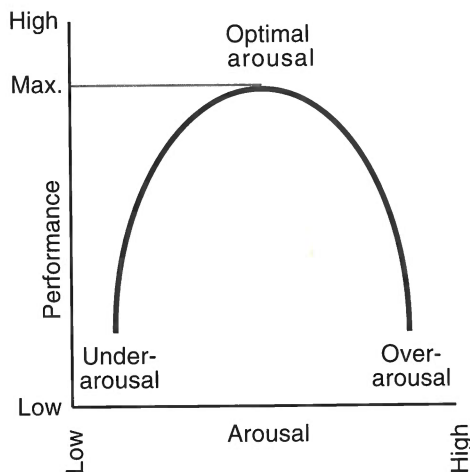


Figure 4.1 A graphic representation of optimal arousal theory.

For example, a mountaineer who is climbing an easy route may be underaroused to the extent that performance drops off. It may also be the case that the mountaineer climbs a difficult route, becomes overaroused, and experiences a similar decrease in performance. Most mountaineers usually seek that particular level of difficulty that is optimally arousing, leading to the best climbing performance. The unique point to Ellis's theory is that people like to perform their best and will purposefully seek out conditions that produce a state of optimal arousal. Since adventure is considered adult play, theories such as Zuckerman's (1979) identification of **sensation seeking** have been adopted as possible reasons to explain why people test and push their limits by taking risks.

Flow State

Csikszentmihalyi (1975) wrote a book entitled *Beyond Boredom and Anxiety* in which he observed and interviewed a wide cross section of

the public, including chess players, poets, dancers, surgeons, and rock climbers. All subjects of his study identified a similar state of being they experienced when fully involved in their chosen activity, which he later termed **states of flow**. "Flow describes a state of experience that is engrossing, intrinsically rewarding and outside the parameters of worry and boredom" (M. Csikszentmihalyi & I.S. Csikszentmihalyi, 1991, p. 150). Studies on flow suggest that people are motivated to participate in adventure experiences because of the intrinsic feelings of enjoyment, well-being, and personal competence they achieve. These positive effects are the reasons people return to adventure programming in an effort to recapture the feelings.

Csikszentmihalyi and Csikszentmihalyi (1991) outlined six characteristics that make the flow-producing experience worthy of repetition to the participant:

1. People experiencing flow clearly know the goals they are trying to achieve and receive **immediate feedback** about how they are doing.
2. **Action and awareness merge** as they see themselves fully engrossed in the activity with pure, uninterrupted concentration.
3. This merging is made possible by their centering on a **limited stimulus field** in which they consciously screen out potential interruptions and unimportant information.
4. They experience "self-forgetfulness" by losing touch with physical reality or by gaining a **heightened awareness** of their inner workings.
5. They enjoy a **feeling of control** over personal actions and the environment during which an awareness of control may be present or a worry over lack of control may be absent.
6. The flow experience is **autotelic**: so enjoyable and meaningful that they desire to repeat the activities in hopes of reproducing such a state, regardless of their reasons for first trying the activity.

Participants can only experience flow when the opportunity to take action is balanced with the individual's capacity to act appropriately. Figure 4.2 illustrates this point.

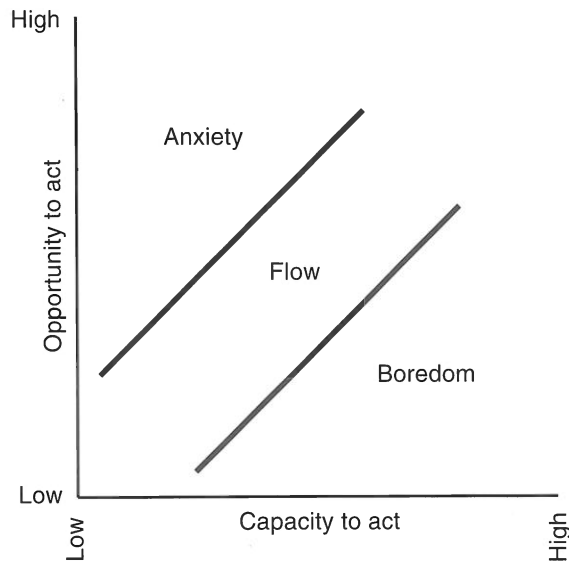


Figure 4.2 A graphic representation of flow theory.

For example, an expert paddler has a high capacity to act, while a novice paddler has a low capacity. Flatwater offers little opportunity to act, while difficult whitewater gives plenty of opportunity. If you place the expert paddler on flatwater, then she experiences feelings of boredom, or underarousal, since her capacity for action exceeds the opportunity. If you place the novice on whitewater, then she experiences a feeling of anxiety, or overarousal, since the opportunity for action far outweighs the capacity. Csikszentmihalyi (1975) asserted that the flow states exist between boredom and anxiety where opportunity and capacity can achieve a synergistic balance. In this example, the novice paddler on flatwater and the expert in whitewater could each be able to experience flow if their capacities matched their opportunities.

Antecedents of Adventure

Mitchell (1983) noted the lack of important conditions or antecedents in Csikszentmihalyi's theory on the experience of flow. He proposed including the identification of several important conditions that "constitute and potentiate [augment] the flow experience" (p. 154) to enhance Csikszentmihalyi's theory. These antecedents included freedom of choice, state of mind, intrinsic motivation, outcome uncertainty, and competence engagement.

First, Mitchell suggested that in order for an adventure to create the experience of flow, it must

be completely voluntary, meaning individuals are free to choose their level of involvement. One way leaders meet this condition in adventure programs is by implementing Rohnke's (1988) axiom of "challenge by choice," under which no one is coerced into taking risks.

Second, adventures are individually specific because each person brings his own level of competence to the experience. Moreover, adventures are specific to the situation because each setting has a different level of inherent risk. As a result, adventures are experienced differently by different people: an adventure is a state of mind.

Third, people initially engage in adventure for a variety of reasons. But those motivated by intrinsic reasons (e.g., joy, happiness, independence, and self-development) generally continue to participate year after year. Most people do not seek extrinsic rewards, such as status or money, in adventure experiences.

Fourth, Mitchell defined adventures as undertakings with uncertainty of outcome. Too much uncertainty of outcome, however, is overarousing; too little is underarousing. Thus, unattainable goals could produce panic due to anxiety in a participant and too easily achieved goals could lead to complacency due to boredom. Neither of these situations will result in flow or a positive learning experience, and also could create dangerous conditions. To make the best of an adventure, participants should feel challenged, yet in control of the situation. If a facilitator or friend were to give away answers or rescue a participant by providing solutions to a problem, the amount of uncertainty would change and the experience would be altered (Goffman, 1981). Except in situations of safety, ethical adventure leaders avoid helping participants too much.

Last, the client must be actively engaged in her adventure with the opportunity to influence the outcome and resolve the uncertainty by applying personal competence to the risky situation. The approach used by some adventure programs in which the client is removed from the experience and cared for by the leaders—as if in an amusement park—can negate the empowering effect of an adventure. The individual cannot learn unless she has an active role in the experience, including the benefits and consequences of her actions. Of course, as a leader, you must intercede in truly dangerous situations.

Sidebar 4.1

STAGES OF ADVENTURE

After 20 years experience in observing and interviewing participants in outdoor adventures, Mortlock (1984) proposed four stages people experience in any outdoor journey: play, adventure, frontier adventure, and misadventure. According to Mortlock, participants can be in any one of the four stages at any time, whether novice or expert, depending on the amount of fear present in the activity.

- Play is characterized by the absence of fear. We can describe play as pleasant or fun and as boring or a waste of time.
- Adventure is characterized by some fear being present. Participants in the adventure stage are in total control of the situation, but are being challenged to some extent.
- Frontier adventure involves a high degree of fear. In frontier adventure, participants experience the risk of physical harm and no longer feel in complete control.
- Misadventure encompasses too much fear and often results in failure. The outcome of misadventure may be as simple as personal dissatisfaction or as serious as physical or psychological damage. Participants may experience a bruised ego, scrapes, and splinters, which we consider acceptable and recoverable outcomes, or may suffer fractures, emotional breakdown, or even death, which we consider unacceptable and nonrecoverable outcomes.

Mortlock reserved play as the stage to learn new skills in. He felt that adventure and especially frontier adventure must be strived for in an outdoor experience, as these make life worth living. Last, the condition of misadventure was where people learned best from their mistakes, provided they were not permanently injured.

We cannot overstate the role of fear. Fear is the human response to risk and, as such, you should consider it a healthy and much-needed reaction. Nonetheless, there are times when you must help participants deal with their fears of risky situations. Several coping strategies have been suggested by Ewert (1989) to decrease fear: desensitization, which is gradual exposure by building up to the big risk through progressively risky activities; flooding, which is careful and prolonged exposure to the risk once encountered; modeling, which is the observation of the techniques used by others to manage their fear; and rehearsal, which is the application of those techniques with repeated practice.

Adventure Experience Paradigm

Martin and Priest (1986) combined the ideas from previous works, developing their own model: the **adventure experience paradigm**. The adventure experience paradigm explains participants' behaviors, based on the variables of risk and competence. We can define risk as the potential to lose something of value and competence as the capability of individuals to deal effectively with the demands placed on them by their surrounding environment.

In this model, the interaction of risk and competence creates the challenge. Challenge cannot exist without the presence of both situational

risk and personal competence engaged in an effort to resolve uncertainty. Depending on the amount of risk and degree of competence interacting together in an adventure experience, five conditions of challenge are possible: exploration and experimentation, adventure, peak adventure, misadventure, devastation, and disaster (Priest & Baillie, 1987). Figure 4.3 presents a diagram of this relationship between risk and competence.

This diagram illustrates that when a person with a high degree of competence performs a low-risk activity, the result is a condition of exploration and experimentation, similar to Mortlock's (1984) play stage during which new skills are learned,

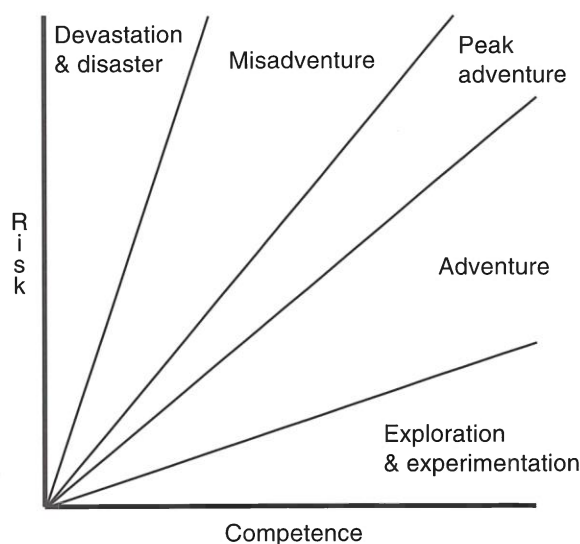


Figure 4.3 A graphic representation of the adventure experience paradigm.

tested, and honed. As competence decreases or risk increases or both, the participant moves into the adventure. When the two components are balanced and matched, a condition of peak adventure results, similar to Csikszentmihalyi's (1975) state of flow. As risk exceeds competence, the potential for misadventure arises; when risk becomes very high and competence is very low, devastation and disaster may occur.

Consider "average" skiers at the start of the ski season. They begin on the gentle "bunny hills" where the risk of falling is minimal and their competence to ski is maximal. This is exploration and experimentation: the skiers can practice their turns and stops to gain confidence. When ready, they move out onto green (i.e., easy and beginner) runs where the risk of falling increases and their skiing competence may decrease. This is adventure, in which participants work harder at skiing and feel more challenged. On the blue square (i.e., moderate and intermediate) runs, they find peak adventure, at which their competence to ski is perfectly balanced with the risk of falling, and they feel "on the razor's edge" as they descend the slope, uncertain whether they will be successful in the product, but confident they will do their best in the process. The black diamond (i.e., difficult and expert) runs provide a little misadventure for these average skiers, because the risk of falling outweighs their competence to ski at this advanced level. When they fall, they consider it to be a minor mishap from which they can recover. They

may be bruised, embarrassed, and covered by snow, but they will not suffer permanent damage. Devastation and disaster would come in the out-of-bounds areas: the back gullies and avalanche slopes where a fall means a broken limb—or worse yet—death! Obviously ethical adventure programs deal with the conditions up to and including misadventure, because people learn well from their mistakes. But devastation and disaster are not a purposeful part of ethical adventure programs.

Martin and Priest (1986) proposed that the goal of an outdoor adventure experience for an individual is to reach peak adventure [similar to Ellis's (1973) concepts of seeking optimal arousal] since this is the realm in which you can experience flow and the most positive benefits of adventure experiences. However, the "key to application of the adventure experience paradigm lies in the perceptions of the individual" (p. 19). Individuals can misperceive both the real risk and their actual competence and, as a result, overshoot or fall short of the goal of peak adventure.

By integrating the concept of misperception in their model, Martin and Priest identified nine types of individuals (see figure 4.4). Let's look closely at three of these: the astute individual, the timid and fearful individual, and the arrogant and fearless individual.

The **astute** individual correctly perceives the level of risk as well as correctly perceives her competence to perform the activity and so possesses a high probability of experiencing a condition of peak adventure. The **timid and fearful** individual misperceives adventure in two ways: she overestimates the risk of the activity and underestimates her competence to perform it. The timid and fearful individual will fall short of peak adventure and perhaps drop into exploration and experimentation, because real risk is actually lower and real competence is actually higher than her perceptions. In contrast, the **arrogant and fearless** individual misperceives adventure in ways opposite to the timid and fearful individual: she underestimates the risk of the activity and overestimates her competence to perform it. The arrogant and fearless individual will overshoot peak adventure and perhaps experience devastation and disaster, because real risk is actually higher and real competence is actually lower than her perceptions. Figures 4.5 and 4.6 portray these latter two profiles.

Adaptive Dissonance

When a person has two different and conflicting thoughts, a cognitive, affective, or psychomotor

		COMPETENCE		
		Over-perceived	Correctly perceived	Under-perceived
R I S K	Under-perceived	Fearless and arrogant	Bold	Naive and innocent
	Correctly perceived	Assured	Astute	Insecure
	Over-perceived	Carefree and exaggerated	Overawed	Timid and fearful

Figure 4.4 The nine types of individuals, based on perceptions of risk and competence.

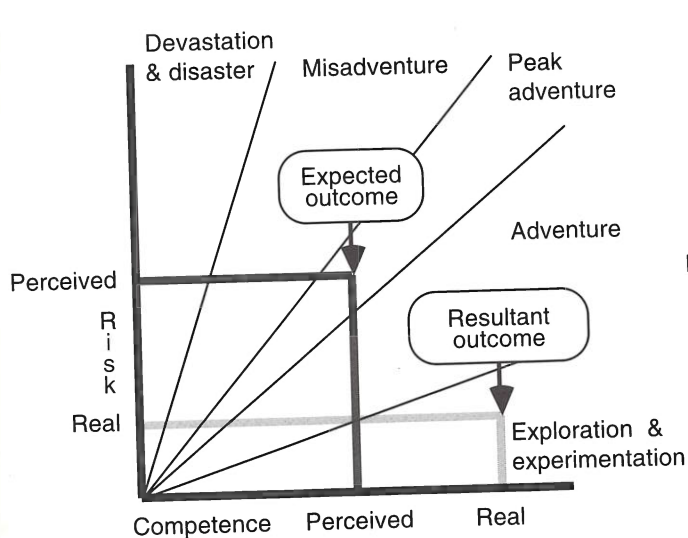


Figure 4.5 An adventure experience paradigm profile for the timid and fearful individual.

(Festinger, 1957; Walsh & Golins, 1976). A common example in outdoor activities occurs when participants look at completing a ropes course and choose to focus on the danger and difficulty, while you as the outdoor leader explain the safety of the belay ropes and the ease of balancing when not looking down. In this instance, the participants are struck by the paradox of opposing views. Both seem sensible and correct, but the participants are unwilling to accept both as true and so are motivated to resolve the dissonance, perhaps by testing either view through an

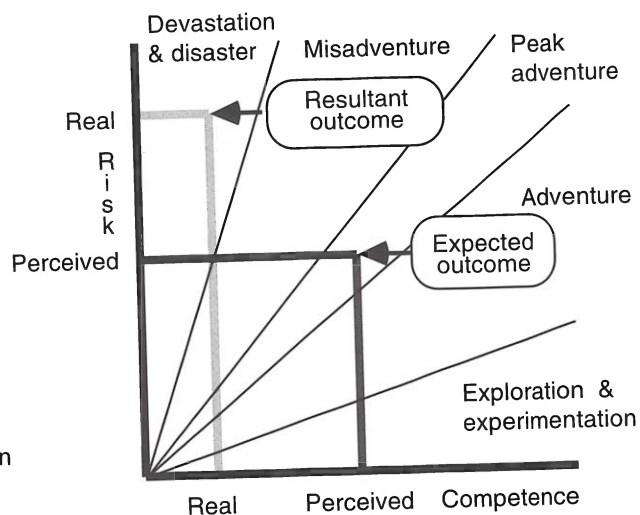


Figure 4.6 An adventure experience paradigm profile for the arrogant and fearless individual.

attempt to complete one element of the ropes course. The strength of their motivation to attempt the ropes course is partially a function of how big a gap exists between their expectations and your comments. But we'll discuss other motivational influences later in this chapter. For now, let's focus on the role of creating adaptive dissonance.

Priest and Baillie (1987) have discussed the application of the adventure experience paradigm to facilitated outdoor learning situations. The purpose of this model is to help you lead

timid and fearful or arrogant and fearless participants toward becoming astute. According to this paradigm, the way to elicit more astute behavior is to create situations with strong adaptive dissonance. In practice, this means presenting tasks that have the appearance of being "difficult" for the timid and fearful, knowing that success is highly probable, and "easy" for the arrogant and fearless, while carefully setting them up for failure. In essence, dissonance between client perceptions and the reality of the adventure can increase the likelihood of a peak experience.

Ethical adventure programs debrief both individuals' experiences, perhaps privately and then within a group. The debriefing helps guide participants to reflect on past experiences, encouraging them to reassess their perceptions of the risk and competence from their previous attempts. As they come to identify, accept, and change their shortcomings, their perceptions move closer to reality, and they eventually become astute (Carpenter & Priest, 1989). With astuteness often comes improvements in self-concept and socialization. Indeed, interpersonal and intrapersonal relationships benefit from such facilitated experiences.

One caution regarding the facilitated adventure experience is that you must structure, control, and supervise the activity. The activity is structured, since you custom fit the level of challenge to the individual; and is controlled, because the risks you manipulate are strictly perceived values while maintaining real values at acceptable or low levels. As the leader, you are the key to the operation and must be sufficiently experienced and astute enough to accurately perceive the risks and the participants' competencies.

THEORIES AND MODELS OF MOTIVATION

The concept of motivation comes from the Latin word *movere*, meaning to move. In this sense, motivation is about why and how individuals move or don't move from one state of being to another. Factors influencing motivation include

- direction of effort, such as confronting a situation or avoiding a situation;
- intensity of effort, or how much effort a person expends in a situation;

- choice of behaviors, such as strategies people use to deal with a situation;
- ability to sustain motivation, for example, how long an individual persists in a situation; and
- resulting behavior change, for example, whether behaviors that result from the situation will be sustained (Sage, 1977; Weinberg & Gould, 1995).

In this section we'll present several theories and models addressing how motivation principles affect adventure programming participants and enhance your ability to appropriately motivate clients toward their goals. Specifically, we'll discuss (1) goal theory, or how a person's commitment to a goal influences his actions, (2) expectancy theory, or how a person's expectations about achieving a goal influences his actions, (3) self-efficacy, or how the belief of whether or not you can accomplish a task affects motivation, and how you can implement various strategies to enhance clients' abilities to be successful, (4) attribution theory and locus of control, or how individuals explain their successes and failures and the influence these attributions have on future actions and emotions, and (5) effectiveness and competence motivation, or how effectiveness of attempts to complete tasks influences feelings of competence as well as how social and interpersonal factors influenced—and were influenced by—these feelings. A final model combines all of these frameworks into one model that outlines risk-taking behavior and competence effectiveness, or how you can use the accuracy of participants' beliefs to influence the probability of success or failure in adventure experiences.

Goal and Expectancy Theories

As the facilitator, your ability to manipulate the risk and competence variables of an adventure experience depends heavily on clients' personal commitments to attaining goals as well as their expectations about being successful. **Goal theory** states that performance is determined by a participant's commitment to goals. These goals may be established by the individual or dictated by others. Participants who are committed to specific and well-defined goals perform at higher levels of competence than those who set general or vague goals (Katzell & Thompson, 1990). Therefore, helping participants to set their own

Sidebar 4.2

ADAPTIVE DISSONANCE AND PERSONALITY TYPES

For timid and fearful individuals in an activity, the adaptive dissonance lies between their anticipated failure and your encouragement that success is imminent. The timid and fearful individuals will expect conditions of misadventure, while you as the leader must have structured and controlled their experiences so that conditions of adventure result (see figure 4.7).

During the debriefing, you can ask questions regarding the participants' initial perceptions of risk and competence. They might typically respond with comments like "It wasn't as dangerous as I had first thought" and "Maybe I can perform better than I give myself credit for!" Following these guided discussions, participants often shift their perceptions closer to reality for the next experience. Overall, the adaptive dissonance is reduced (see figure 4.8).

In time with repeated and varied experiences, coupled with subsequent debriefings, the perceptions of the timid and fearful participants will merge with reality, and they will have become astute. Once astute, you should encourage them to review the overall process of changing in light of how this new learning about themselves might apply to their real lives.

To illustrate, consider a timid and fearful man on a high ropes traverse. The facilitator has structured an experience for which she asks this person to walk across a tightrope 50 feet above the ground with only a rope strung from the far tree for balance and support. Based on perceived values, he is expecting a misadventure or, even worse, devastation and disaster! In actuality, the real values are quite different, since he is belayed. After considerable coaxing and assistance from the facilitator, he completes the traverse and feels elated. The facilitator helps him reflect on his adventure, and after some thought and discussion, he recognizes that the task was not so dangerous and that he really

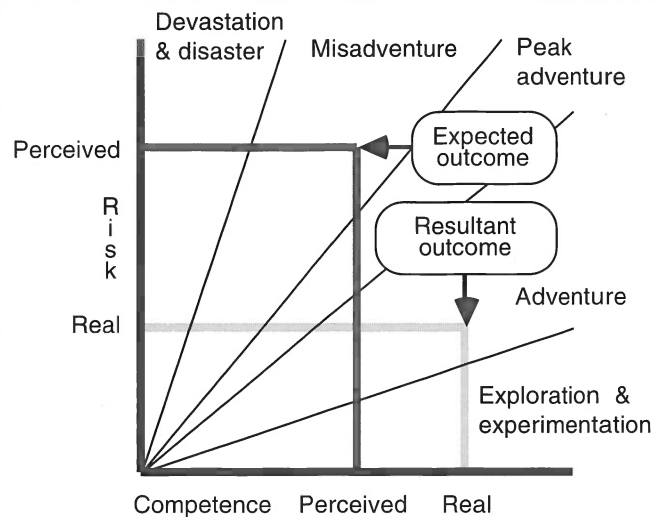


Figure 4.7 Adaptive dissonance between expected and resultant (leader-predicted) outcomes for the timid and fearful individual.

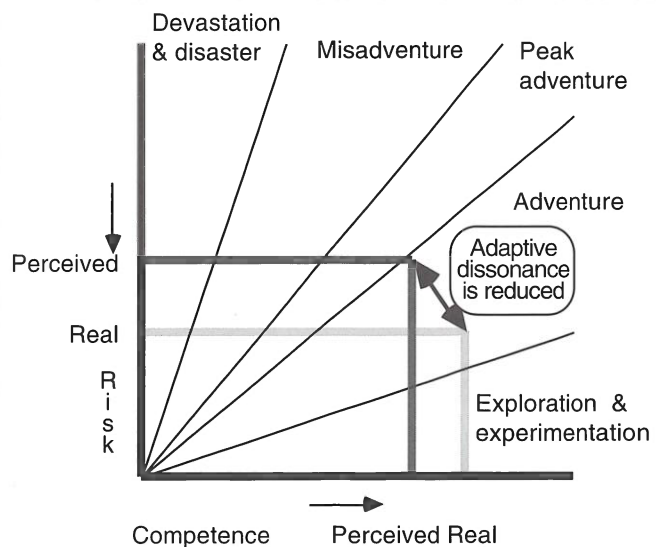


Figure 4.8 After the experience, the timid and fearful individual's perceptions shift closer to reality.

was capable enough to complete it. This learning may later transfer to daily living concerns in which perhaps the man expresses timid and fearful behaviors when meeting new people. In the future, he may be able to take on new friendships with newly learned confidence.

For arrogant and fearless individuals, the adaptive dissonance lies between their apparent sureness and the leader's expression that success is doubtful for this activity. The arrogant and fearless will expect conditions of adventure, but since the leader will have structured or controlled the experiences for gentle failure, the conditions of misadventure will result (see figure 4.9).

Occasionally, arrogant and fearless individuals' behavior is the result of repeated failures in life, and their demeanors are a coping mechanism for dealing with failure. Hence, you must be very careful not to further embarrass these individuals in front of others, reinforcing this personality trait. If such a concern exists, the best approach may be to conduct the activity away from the group, debriefing the individuals separate from and in advance of the shared group discussions. In this way, the arrogant and fearless may respond to questions about risk and competence with answers such as "It may be that that was more difficult than I first thought" and "Maybe I'm not as good as I think!" From these reflections, the arrogant and fearless participants can shift their perceptions closer to reality for the next experience. Once again, adaptive dissonance is reduced (see figure 4.10).

With further experience and debriefing, the arrogant and fearless participants will have become astute as their perceptions merge with reality. In the unlikely instance in which they might convert to being timid and fearful from experiencing an overwhelming failure, you can simply structure an easier task for the next activity. Once again, after repeated activities, you can debrief the learning in relation to real life.

Let's consider, for example, an arrogant and fearless woman on a rock climb. The facilitator has structured an experience asking her to climb a

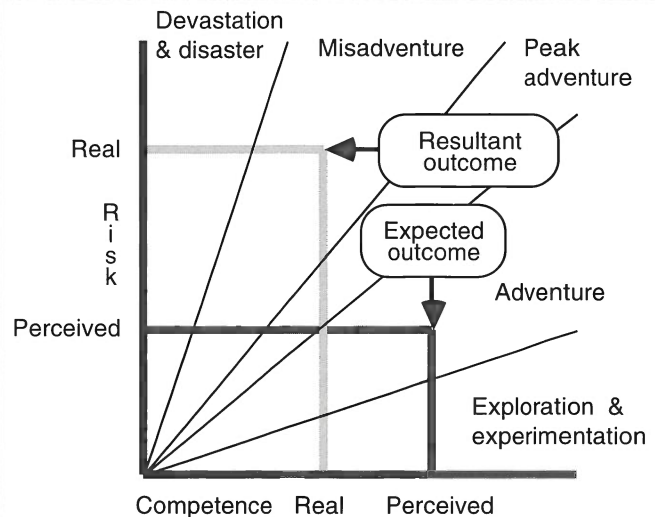


Figure 4.9 Adaptive dissonance between resultant (leader-predicted) and expected outcomes for arrogant and fearless individuals.

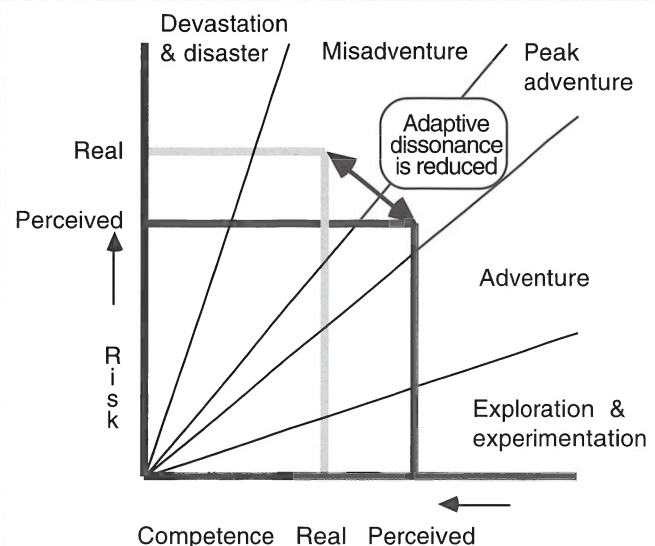


Figure 4.10 After the experience, the arrogant and fearless individual's perceptions move closer to reality.

particularly difficult route, which has previously been the topic of some bragging on her part. Based on perceived values, she is expecting exploration and experimentation or, at best, mere adventure! In actuality, the real values are quite different, since she is belayed, but the facilitator has chosen a very difficult route, expecting her to fail. After considerable effort, she has fallen off the crux of the climb repeatedly and is exhausted. The facilitator now helps her reflect on her misadventure. After some thought and discussion, she recognizes that the task was indeed more difficult than she expected and that she really was not as good as she was saying. This reversal may later transfer to daily living concerns in which perhaps the woman expresses arrogant and fearless behaviors when working on projects as part of a small group. Perhaps next time, she will be more agreeable.

goals, particularly those which require concentrated effort to attain, can be an excellent motivational technique. Certainly, by setting their own goals, participants will have a greater level of commitment to achieving the task.

Expectancy theory takes into account three determinants that motivate people: first, whether their efforts will lead to performance, "Can I do it?"; second, what outcomes are involved, "What's in it for me?"; and third, the value of those outcomes, "Is it worth it?" People are motivated when they expect that effort will result in good performance, which will in turn be useful in attaining desired outcomes (Katzell & Thompson, 1990). Expectancy theory has useful application to outdoor programs as it can help to define exactly how you can motivate individuals to experience peak adventures. Participants provided with sufficient training, emotional support, proper resources, and understanding of benefits will feel more confident about accomplishing a task. This confidence reduces their anxieties and enhances perceived competence, empowering them to tackle greater risks.

Self-Efficacy

Bandura's (1977) social learning theory defines **self-efficacy** as the certainty of an individual's belief that he or she can successfully accomplish a task that tests ability while experiencing risk. It is more than mere self-confidence in your abilities; it is believing that you can successfully execute the behaviors necessary to accomplish the "anticipated and desired" task(s) (p. 192).

Self-efficacy expectations vary in at least three ways: magnitude, strength, and generality.

1. **Magnitude** refers to the degree of certainty associated with success and is heavily influenced

by perceptions of risk and difficulty. For example, when working with clients who were afraid of snakes, Bandura offered three ways to confront this issue: looking at pictures of snakes, being in the same room with snakes, and actually touching snakes. Clients varied widely in magnitude as some were 100 percent certain of being able to deal with the less risky task of looking at pictures, and others were only 10 percent certain of accomplishing the more risky task of actually touching snakes. Thus, although any two people may expect success for a given task, they may differ in the magnitude of their certainty of success.

2. **Strength** refers to how long a person will hold on to expectations of success despite contradictory information. For example, a person with a low degree of strength may lose her belief that she can accomplish a task after a single failure. A person with a high degree of strength will be more likely to continue to attempt a task in the face of many failures. Also, a history of succeeding after multiple unsuccessful attempts also plays an important role in building up the strength dimension of an individual.

3. **Generality** refers to the degree of transfer for self-efficacy beliefs from one situation to another. One person may limit efficacy expectations to the performance of identical or closely related tasks, while another may generalize these expectations for success to a wide range of situations. This transfer is more easily accomplished if the individual can see the connections among tasks (see Gass, 1985, 1991, and 1993).

Self-efficacy is based on information interpreted and derived from four internal and external sources: past performance accomplishments, vicarious experiences, verbal persuasion, and physiological arousal. Researchers believe that

information gained through success is the most influential and stable source of information because it is based on actual experience. Failures early in learning tend to be more influential than failures in later stages. Moreover, failures that are later overcome by increased effort levels can strengthen self-efficacy levels to a greater degree than failures overcome by chance. Hence, the importance of second tries at certain tasks.

Seeing or hearing about someone else's vicarious pursuit of similar attempts to master a skill or overcome a problem, without negative repercussions, can also enhance an observer's efficacy expectations. The opportunity to observe others of similar competence and being able to hear stories of others' experiences are two positive means for directly enhancing clients' feelings of self-efficacy.

Although gathering efficacy expectations from verbal information is not as strong as those expectations acquired from actual experience, it can serve as a powerful mobilizing factor in combination with the manipulation of adaptive dissonance. Indeed, encouragement—without coercion—from you can enhance self-efficacy.

Since over- or underarousal usually interferes with performance, people experiencing high anxiety or boredom levels might have certain expectations. In addition, expectations of success or failure can further alter arousal levels, since anticipation can confirm positive or negative beliefs about performance. You need to defuse anxiety or boredom associated with setbacks, especially if either emotion becomes debilitating.

Bandura (1977) also suggested that the relationship between self-efficacy and performance is reciprocal: efficacy expectations influence performance and performance outcomes influence self-efficacy. The direction of reciprocity, causing increases or decreases in self-efficacy, also depends on the degree of stress present in the situation. Selye (1974) described stress as coming in one of two forms: **eustress**, which is pleasant and desirable stress, or **distress**, which is unpleasant and undesirable stress, depending on the effect—in the form of emotions and feelings—exhibited by the person under stress.

Attribution, or Locus of Control

According to Weiner (1972), individuals attribute the reasons for their performance outcomes to a variety of causes. These can include ability, effort, luck, task characteristics, attention, and others. Weiner classified these attributions ac-

cording to a two-dimensional scale. The first dimension, **causality**, ranged from internally to externally attributed causes. The second dimension, **stability**, ranged from stable to unstable causes. As an example, Weiner classified ability as an internal and stable attribute and defined luck as external and unstable.

Later on, Weiner (1979) added a third dimension to his model: **controllability**, or the degree to which the attribution is perceived as under the individual's **locus of control**. This new dimension differentiated attributions such as effort as internally controllable and fatigue as externally uncontrollable. The way an individual perceives a specific attribution, however, is far more important than how it is usually classified (Russell, 1982).

Weiner, Russell, and Lerman (1978 and 1979) found that causality seemed to play an important role in differentiating various effects. Under success conditions, an **internal locus of control** was found to be associated with pride, confidence, competence, and satisfaction. Feelings of gratefulness and thankfulness were linked to **external locus of control** under similar conditions. Under failure conditions, guilt was associated with internal control, while anger and surprise were linked to external control.

Based on this research, Weiner (1985) developed his theory of achievement motivation and emotion. According to him, a person experienced an emotional reaction immediately after an achievement. This general reaction could be either positive (for example, happy), or negative (for example, sad), and was based on the individual's perception of success or failure of the performance. Weiner described these initial reactions as "outcome-dependent," since the reactions were a function of outcome success or failure, rather than a function of attributed cause and control. He found that following the general reaction, an individual carefully thought through the reasons that might explain the outcome cause and control. Once the individual established causality and control, she experienced a secondary specific set of emotions, which were "attribute-dependent." This unique combination of general effects, based on outcomes, and specific effects, based on attributions, influenced future motivation levels and risk-taking behaviors.

By way of illustration, the downhill skier who performs poorly in the moguls feels nonspecific, or general, negative emotions such as sadness—outcome-dependent effects. In trying to figure out

the reason why performance was so poor (or causality) the skier attributes failure to a lack of skiing ability, which is internal attribution, and decides that this will not improve due to a strong belief that she cannot change equipment, conditions, and body type, which is external attribution: internal, stable, and uncontrollable. Thus the skier experiences a more specific effect, such as frustration or defeat, which are attribute-dependent effects, and may decide to give up on the sport, which is a behavioral consequence. This example demonstrates the power of attribution to have a destructive, instead of a constructive, impact on motivation.

Effectance Motivation

In his theory of **effectance motivation**, White (1959) felt that individuals were intrinsically motivated to create a positive influence on their environment. If people can successfully meet the demands of the environment through mastery attempts or performance tries, then they will experience feelings of "effectance," or positive effects and emotions. These positive effects, in turn, encourage future mastery attempts under similar environmental conditions. Figure 4.11 presents this model.

As seen in this model, behavior is the result of an urge to gain competence and to have an effect on the environment. Specifically, individuals try a task and, if successful, they equate this with improved competence at that task. This makes them feel good (joy, pleasure, efficacy) and in control of their environment. In turn, these positive effects motivate them to try again. A very simple model, White's theory did not account for a number of extraneous influences, such as the opinions of significant others or the attribution of success, and did not consider the negative side of failure.

About 20 years later, Harter (1978) built White's framework into a theory of **competence motivation**. She expanded his model to include the effects of social and interpersonal factors as

well as the effects of positive and negative experiences. She further hypothesized that the motivational process revolved around perceived competence. Subsequently, Harter (1986) suggested that perceived competence levels were influenced by many factors: success or failure after mastery attempts, perceptions of control, motivational orientation, positive or negative reinforcement from significant others, and characteristics of the task. Figure 4.12 presents a diagram of her model.

But how does this model apply to real life? Suppose a kayaker decides to attempt to run a new set of rapids for the first time. If the level of route difficulty matches the skill level of the kayaker, then we can describe the task as optimally challenging. Achievement of optimally challenging tasks have a greater impact on an individual's perception of himself. If the kayaker is successful in the attempt, then he will experience positive effects, such as enjoyment or intrinsic pleasure. Moreover, success in these situations can increase levels of perceived paddling competence as well as enhance the likelihood that this kayaker will develop internal perceptions of greater control (see also locus of control discussion in previous section). In other words, the kayaker attributes success to internal sources, such as effort and ability. This successful attempt can also receive positive reinforcement and approval from significant others, such as paddling friends. In this case, this information also results in internalized reinforcement, further enhancing internal attribution of feelings. Specifically, the kayaker develops an intrinsic motivational orientation, meaning that activities are chosen for their potential to provide personal satisfaction and meet personally-set standards of performance. In turn, an intrinsic motivational orientation further enhances perceived competence and internal locus of control. These positive perceptions of self augment affective reactions such as pleasure, and the combination of positive effects and perceptions of self, in turn, increase

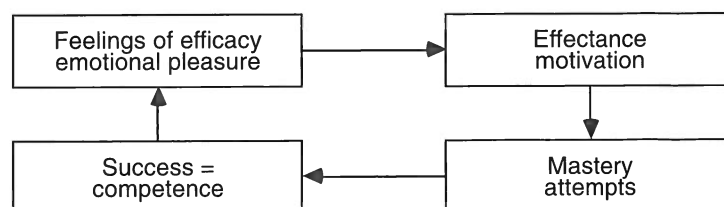


Figure 4.11 The effectance motivation model (White, 1959).

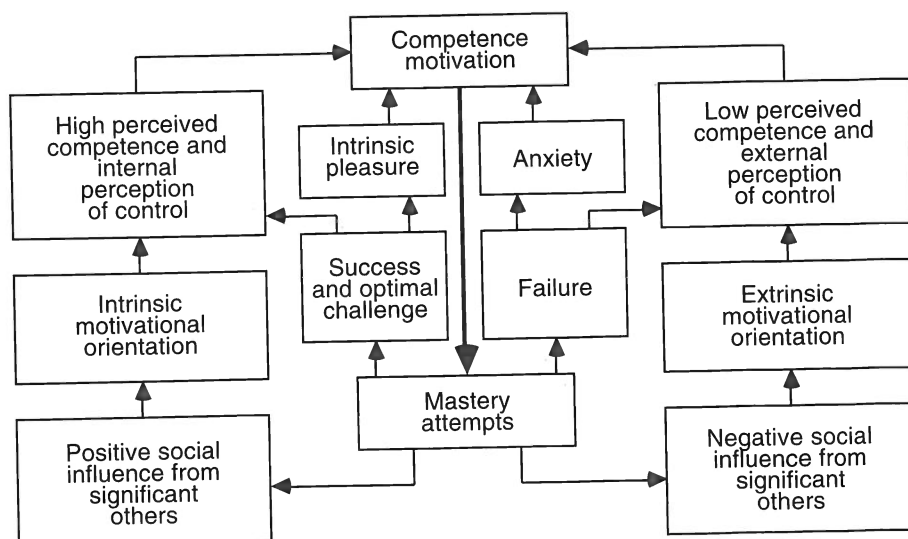


Figure 4.12 The competence motivation mode (Harter, 1978).

motivational levels. Thus, the kayaker is likely to attempt the task again.

In contrast, failure to run the rapids can diminish motivational levels as the kayaker experiences negative effects and perceptions of self. Repeated failure eventually reduces perceived paddling competence levels, possibly leading to external perceptions of control. In other words, the kayaker may attribute the failure to external reasons, such as difficulty of the route or faulty equipment. In addition, the lack of reinforcement and approval from significant others may result in the development of an extrinsic motivational orientation. The kayaker may begin to choose routes that meet other peoples' expectations, striving to meet their external standards of performance. In turn, an extrinsic orientation tends to decrease perceived competence levels, thereby enhancing an external locus of control orientation. Decreasing perceptions of self or negative effects, such as anxiety, further decrease effectance motivation. Thus, the kayaker may not attempt that route or similar ones ever again.

Risk Taking and Competence Effectance

Priest and Klint (1993) have combined all the frameworks we've discussed so far into one theoretical model, partially founded on the research and partially rooted in experience. The model revolves around the idea of using competence effectance (i.e., the belief of one's personal competence if correctly perceived) to increase a

client's chance of success in an adventure experience as well as to enhance the possible ramifications.

The model is a series of closed-loop paths, connecting key constructs such as perceived risk, perceived competence, competence motivation, competence performance, arousal, intrinsic feelings, extrinsic influence, self-efficacy, attribution, and locus of control. The model is comprised of three parts, designated as neutral, positive, and negative feedback loops. Figure 4.13 shows the neutral loop.

The left side of the loop describes the three levels of risk that participants can select on the basis of their efficacy expectations. If people are feeling less competent, they are likely to select a lower level of risk; if they are feeling more competent, they are likely to select a higher level of risk; and on rare occasions, they may select a level of situational risk that perfectly matches their personal competence. This latter condition results in a challenge of peak adventure, optimal arousal, state of flow, or what is commonly termed "living on the razor's edge!"

Regardless of the level of risk they choose, people can either perform sufficiently or insufficiently. This evaluation is usually a subjective assessment of personal performance. If participants believe they have performed sufficiently for the level of risk chosen, then challenging conditions of adventure result (e.g., exploration and experimentation). If participants think their performances were insufficient to meet the risks involved, then the challenging conditions of mis-

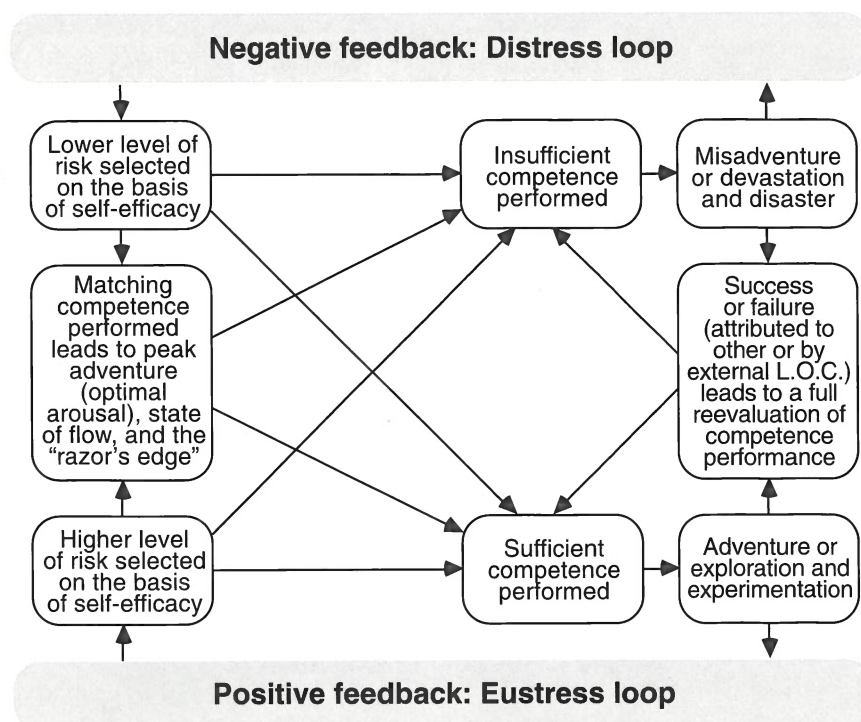


Figure 4.13 The neutral feedback loop of the risk taking and competence effectance model.

adventure are possible, perhaps leading to devastation and disaster.

Following this decision, participants begin to attribute, or justify, the way things turned out. Obviously, your role in helping people to correctly attribute their adventure outcomes is extremely important. If people attribute their successes or failures to external sources, that is, to something other than themselves, then they may reevaluate their performances and possibly change their minds about whether they performed sufficiently or not. If they "own" their successes or failures by attributing them to internal sources, then they may enter into either of the other two loops. Note that if people experience a condition of misadventure or devastation and disaster, they enter into the negative feedback loop, or distress. And if the challenge is one of adventure or exploration and experimentation, they enter into the positive feedback loop, or eustress. Figures 4.14 and 4.15 offer a closer examination of these two loops to help you better understand the model.

The negative loop of distress (see figure 4.14) begins with a perception of failure resulting from misadventure and attributed to internal sources, such as personal performance. The failure can cause direct, negative intrinsic feelings, such as

feeling "bad" about yourself, or cause indirect, negative extrinsic responses, such as comments of disappointment from significant others. Through a decrease in perceived competence, these negative feelings can lead to lower feelings of competence motivation. For example, people who believe they cannot accomplish a task will experience anxiety when facing the same level of risk. Because of this, when emerging from the negative feedback loop, such participants will tend to select a lower level of risk in the neutral loop.

The positive loop of eustress (see figure 4.15) follows a similar pattern, but, naturally, the effect is the reverse of the negative loop. It begins with an internally attributed perception of success resulting from adventure. This success leads to direct, positive intrinsic feelings, such as feeling "good" about yourself, and to positive extrinsic responses, such as comments of approval from significant others, indirectly building on the "good" feelings. Through an increased perception of competence, these positive feelings generally lead to a greater level of competence motivation. For example, people who believe they can accomplish the task will experience boredom with the same level of risk. Because of this, when emerging from the positive feedback loop, such

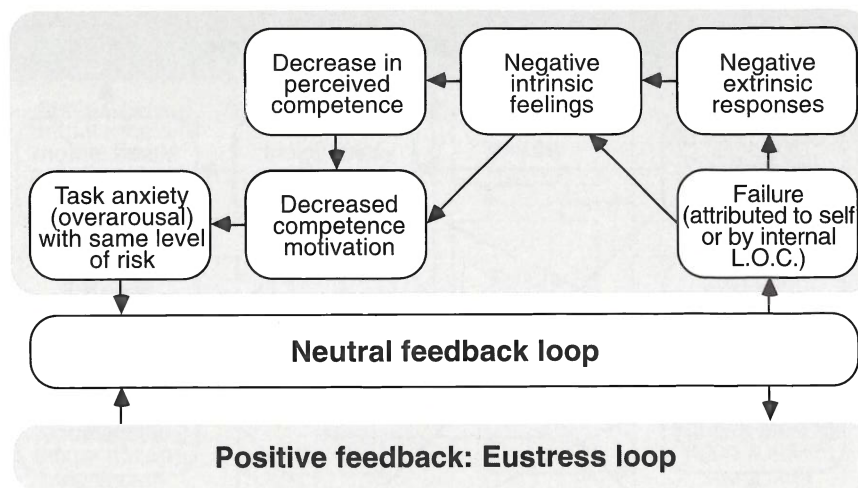


Figure 4.14 The negative feedback loop of the risk taking and competence effectance model.

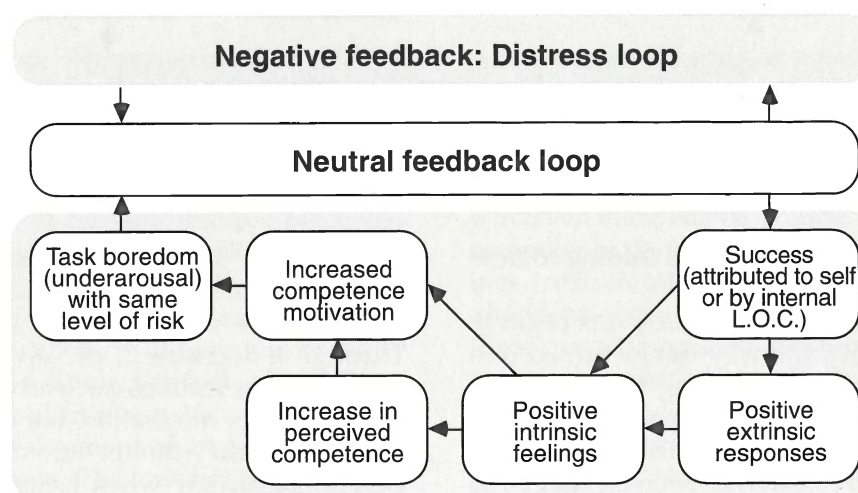


Figure 4.15 The positive feedback loop of the risk taking and competence effectance model.

participants tend to select a higher level of risk in the neutral loop.

For example, consider a participant engaged in an adventure learning opportunity who is timid and fearful about what lies ahead. The first task set for this individual created by you as the facilitator is an easy rock climb, initially viewed by the individual as unattainable. The discrepancy between the task and the client's perception of competence creates adaptive dissonance, or mental argument, within the participant's mind. Resolving this dissonance and attempting the task requires some encouragement, rather than coercion, from you.

Assume for a moment that the individual overcomes the difficulty of a climb, performing with

sufficient competence, experiences an adventure in the exploration and experimentation realm, and considers the experience "successful." If the individual attributes the success internally to personal effort, then the individual enters into a positive feedback loop, or eustress. The individual feels good, or positive, intrinsic feelings, and receives praise and congratulations from others, or a positive extrinsic response. This, in turn, leads to the belief that an improvement in personal capability has taken place as perceived competence increases; thus, the desire to do better next time is likely because competence motivation has increased. Since repeating the same climb would be underarousing for similar levels of risk, the individual will likely select a higher level of

risk, based on the self-efficacy belief that success is achievable where failure initially seemed evident.

For this new level of higher risks, three performance scenarios are now possible. First, the individual may perform at a sufficiently competent level and return to eustress—if an internal locus of control is in effect and if success is attributed to self. Second, a perfect match of competence with the new choice of risk may occur, leading to the condition of peak adventure. In this case, the individual will attempt to maintain the condition for as long as possible, eventually falling off to one side or the other. The third possible scenario is that the individual may perform at an insufficient level of competence and cross over to the side of distress, or misadventure—even to devastation and disaster.

Consider for a moment what happens if the latter scenario occurs. Insufficient competence performance for the new risk leads to a condition of misadventure—or worse, devastation and disaster—and the feeling of having failed. If the individual attributes failure to himself, then he enters the negative feedback loop of distress. The individual feels bad, or has negative intrinsic feelings, and may even receive some sarcasm and blame from others, or negative extrinsic responses. This, in turn, leads to the belief that personal capability has dropped off, that is, perceived competence decreases, and the desire to stop trying arises, that is, competence motivation decreases. Since repeating the same climb would create anxiety in this case, in other words, would be overarousing for similar levels of risk, the individual is likely to select a lower level of risk next time, based on the self-efficacy belief that he may again fail at an activity for which he had originally expected to experience success.

Say that this individual chooses a new level of lower risk. Once again, three performance scenarios are now possible. First, the individual may perform at an insufficient level of competence and remain in distress, especially if he continues to attribute his failure to internal causes. Second, a perfect match of competence with the new level of risk may lead to the condition of peak adventure. As before, the individual may attempt to maintain this condition for as long as possible. Third, and more likely with the help of a competent facilitator, the individual may perform at a sufficient level of competence and cross back to the positive side of eustress.

If the individual attributes success or failure to other external sources, such as the facilitator,

which can happen if the participant is coerced or given too much encouragement, or to equipment, luck, or weather, which are frequent complaints from novices, then a full reevaluation of personal contribution to the task must be undertaken, and the individual may recognize that he experienced a different challenging condition instead. This change of mind may make the difference between entering one loop or the other. With or without a facilitator, human beings are likely to follow this sequence as they vacillate back and forth between the looped pathways until they become fully astute: both accurate and correct in their perceptions of situational risks and personal competence.

EFFECTIVE OUTDOOR LEADERS SHOULD

- ☞ Be vigilant about monitoring group members' arousal levels, be aware of the effects over- or underarousal can have on performances, and do what is necessary to see that clients are optimally aroused whenever appropriate and desirable.
- ☞ Help participants to balance opportunities to act with personal capacity for action, so that they may possibly experience states of flow and the related benefits.
- ☞ Be sure that the antecedents of an adventure are present within each experience: freedom of choice, state of mind, intrinsic motivation, outcome uncertainty, and competence engagement.
- ☞ Understand the role that fear plays in an adventure and be prepared to help participants cope with their concerns accordingly through desensitization, flooding, modeling, or rehearsal mechanisms.
- ☞ Understand the varying conditions of challenge that can arise from the interaction of risk and competence and be able to help participants recognize these in relation to the level of risk and competence present in an adventure.
- ☞ Understand the role of adaptive dissonance and know how to structure and control adventure experiences to create healthy adaptive dissonance in clients.
- ☞ Help participants set their own goals to enable greater commitment as well as provide sufficient training, emotional support, proper resources, and benefit comprehension to increase motivation.

☞ Be aware of the impact that past performance or physiological arousal can have on self-efficacy and be capable of sharing vicarious experiences or using verbal persuasion, but not coercion, as methods of participant encouragement.

☞ Monitor how participants attribute success or failure and assist them with proper attribution to either internal or external locuses of control.

☞ Guide the reflection of participants in examining their levels of competence and performance of tasks in relation to their emotions and motivation to complete tasks.

☞ Note the impact that successful or failed attempts at mastery will have on participants' perceived competence and how this, in turn, will affect their levels of motivation.

☞ Be aware of the impact that perceived competence and levels of motivation will have on participants' feelings of self-efficacy and selections of risks in an adventure experience.

SUMMARY

Ellis's play theory of optimal arousal suggests a reason for human engagement in adventure: people will purposefully seek out conditions of optimal arousal that permit maximal performance. Csikszentmihalyi's flow state model details what they can experience in an adventure: goal clarity, immediate feedback, merging of action and awareness, concentration on a limited stimulus field, self-forgetfulness, heightened self-awareness, personal control, and autotelic enjoyment. Mitchell lists the necessary antecedents of adventure as freedom of choice, state of mind, intrinsic motivation, outcome uncertainty, and competence engagement. Mortlock traces the stages in an outdoor journey, based on the level of fear present: play (no fear), adventure (some), frontier adventure (lots), and misadventure (too much).

Martin and Priest's adventure experience paradigm combines the work of these four into a graphic representation of the relationship between risk and competence. Through this paradigm, the creators explore how the combination of risk in the adventure experience and participant competence interact to create one of five conditions of challenge: exploration and experimentation, adventure, peak adventure, misadventure, and devastation and disaster. Priest and

Baillie describe how adaptive dissonance can be used to create astute individuals within the adventure experience paradigm. Adaptive dissonance is the state between what clients know they can do and what they are not able to do, that is, tasks they are unsure of whether they can accomplish or not. Accomplishing such tasks generates a strong sense of mastery, leading to astute learners.

In addition, it's important to understand the concepts concerning motivation in adventure programming. Motivation refers to why and how individuals move or don't move from one state of being to another. Factors influencing motivation include the direction of effort, intensity of effort, choice of behaviors, ability to sustain motivation, and the resulting behavior change. Theories important to note include the following: goal theory, or how a person's commitment to a goal influences actions; expectancy theory, or how a person's expectations about achieving a goal influences actions; self-efficacy, or how the belief of whether or not a person can accomplish a task affects motivation and how you as an outdoor leader can implement various strategies to enhance a client's ability to be successful; attribution theory and locus of control, or how individuals explain their successes and failures and the influence these attributions have on future actions and emotions; and effectance and competence motivation, or how effectiveness of attempts in completing tasks influences feelings of competence as well as how social and interpersonal factors influenced—and were influenced by—these feelings. A final model from Klint and Priest combines all of these frameworks into one model outlining risk-taking behavior and competence effectance, or how the accuracy of participants' beliefs are used to influence the probability of success or failure in adventure experiences. The model makes use of Seyle's concepts of distress and eustress to theorize how people change perceptions on the basis of experience and how astuteness is developed through adventure experiences.

QUESTIONS TO THINK ABOUT

1. Considering Csikszentmihalyi's flow state, can you recall a time when this occurred with you on an adventure experience? If so, try to describe what was happening and why it was occurring. How might you

replicate such an experience for others as an outdoor leader?

2. Discuss the similarities between Csikszentmihalyi's six characteristics of flow and Mitchell's five antecedents of adventure. Create a list of conditions you would like to help foster in adventure experiences to enhance the likelihood that clients will reach their goals.
3. Differentiate among the four sources of self-efficacy and explain the relevancy of the three domains of self-efficacy. Select an adventure activity (e.g., rock climbing, challenge course) and provide examples from this activity that represent sources for increasing self-efficacy levels in clients.
4. What does motivation mean to you? Choose one of the theories of motivation and explain how you would create conditions to help motivate a client.
5. Recall a time when you led a group on an adventure, then explain their individual behaviors by applying the adventure experience paradigm and the competence effectance theory.

REFERENCES

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory for behavioral change. *Psychological Review* 84, 191-215.
- Bunting, C. (1987). Challenge activities and stress management. In J.F. Meier, T.M. Morash, & G.E. Welton (Eds.), *High-adventure outdoor pursuits: Organization and leadership* (pp. 28-35). Columbus, OH: Publishing Horizons.
- Carpenter, G., & Priest, S. (1989). The adventure experience paradigm and non-outdoor leisure pursuits. *Leisure Studies* 8(1), 65-75.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M., & Csikszentmihalyi, I.S. (1991). *Adventure and the flow experience*. In J.C. Miles & S. Priest (Eds.), *Adventure education* (pp. 149-155). State College, PA: Venture.
- Ellis, M.J. (1973). *Why people play*. Englewood Cliffs, NJ: Prentice-Hall.
- Ewert, A. (1983). *Outdoor adventure and self-concept: A research analysis*. Eugene, OR: Center of Leisure Studies, University of Oregon.
- Ewert, A. (1989). Managing fear in the outdoor experiential education setting. *Journal of Experiential Education* 12(1), 19-25.
- Festinger, L. (1957). *The theory of cognitive dissonance*. Evanston, IL: Row & Peterson.
- Gass, M. (1985). Programming the transfer of learning in adventure education. *Journal of Experiential Education* 10(3), 18-24.
- Gass, M. (1991). Enhancing metaphor development in adventure therapy programs. *Journal of Experiential Education* 14(2), 6-13.
- Gass, M. (1993). *Adventure therapy: Therapeutic applications of adventure programming in mental health settings*. Dubuque, IA: Kendall-Hunt Publishing, Inc.
- Goffman, E. (1981). Fun in games. In M. Marie-Hart & S. Birrell (Eds.), *Sport in the socio-cultural process* (pp. 40-91). Dubuque, IA: Brown.
- Harter, S. (1978). Effectance motivation reconsidered. *Human Development* 21, 34-64.
- Harter, S. (1986). Cognitive-developmental processes in the integration of concepts about emotions and self. *Social Cognition* 4, 119-151.
- Katzell, R., & Thompson, D.E. (1990). Work motivation: Theory and practice. *American Psychologist* 45(2), 144-153.
- Martin, P., & Priest, S. (1986). Understanding the adventure experience. *Journal of Adventure Education* 3(1), 18-21.
- Mitchell, R.G. (1983). *Mountain experience: The psychology and sociology of adventure*. Chicago: University of Chicago Press.
- Mortlock, C. (1984). *The adventure alternative*. Cumbria: England Cicerone Press.
- Priest, S., & Baillie, R. (1987) Justifying the risk to others: The real razor's edge. *Journal of Experiential Education* 10(1), 16-22.
- Priest, S. (1993). A new model for risk taking. *Journal of Experiential Education*, 16(1), 50-53.
- Russell, D. (1982). The causal dimension scale: A measure of how individuals perceive causes. *Journal of Personality and Social Psychology* 42, 1137-1145.
- Sage, G. H. (1977). *Introduction to motor behavior: A neuropsychological approach*. Reading, MA: Addison-Wesley.
- Schreyer, R.M., White, R., & McCool, S.F. (1978). Common attributes uncommonly exercised. *Journal of Health, Physical Education, and Recreation (JHOPER)* 49(4). Also in J.F. Meier, T.M. Morash, & G.E. Welton (Eds.), *High-adventure outdoor pursuits: Organization and leadership* (pp. 36-42). Columbus, OH: Publishing Horizons.
- Selye, H. (1974). *Stress without distress*. New York: Lippincott.
- Skow, J. (1983, August 29). Risking it all: The spirit of adventure is alive and well. *Time*. 52-59.
- Walsh, V., & Golins, G. (1976). *The exploration of the Outward Bound process*. Denver: Colorado Outward Bound School.
- Weinberg, R. S. & Gould, D. (1995). *Foundations of sport and exercise psychology*. Champaign, IL: Human Kinetics.
- Weiner, B. (1972). *Theories of motivation: From mechanism to cognition*. Chicago: Rand McNally.

- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of Educational Psychology* 71, 3-25.
- Weiner, B. (1985). An attribution theory of achievement motivation and emotion. *Psychological Review* 92, 548-573.
- Weiner, B., Russell, D., & Lerman, D. (1978). Affective consequences of causal ascriptions. In J.H. Harvey, W.J. Ickes, & R.F. Kidd (Eds.), *New directions in attribution research*, vol. 2 (pp. 59-90). Hillsdale, NJ: Erlbaum.
- Weiner, B., Russell, D., & Lerman, D. (1979). The cognitive-emotion process in achievement-related contexts. *Journal of Personality and Social Psychology* 37, 1211-1220.
- White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review* 66, 297-333.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Erlbaum.