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CHAPTER 7

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Subjective Task Value and the Eccles et al. Model of Achievement-Related Choices

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Over the past 25 years, my colleagues and I have studied the motivational and social factors influencing such long- and short-range achievement goals and behaviors as career aspirations, vocational and avocational choices, course selections, persistence on difficult tasks, and the allocation of effort across various achievement-related activities. Given the striking differences in the educational, vocational, and avocational patterns of males and females, we began this work with a particular interest in the motivational factors that might underlie the gender differences in such achievement-related choices. Frustrated with the number of seemingly disconnected theories proliferating to explain gender differences in these achievement patterns, we developed a comprehensive theoretical model of achievement-related choices that could be used to guide our subsequent research efforts (see Figure 7.1 for most recent version). Drawing on the theoretical and empirical work associated with decision making, achievement

theory, and attribution theory (see Crandall, 1969; Weiner, 1992), we proposed that educational, vocational, and other achievement-related choices are most directly related to two sets of beliefs: the individual's expectations for success, and the importance or value the individual attaches to the various options perceived by the individual as available. In this model, we also specified the relation of these beliefs to cultural norms, experiences, aptitudes, and to those personal beliefs and attitudes that are commonly assumed to be associated with achievement-related activities (see Eccles, 1987; Eccles, Wigfield, & Schiefele, 1998).

For example, let us consider course enrollment decisions. The model predicts that people will be most likely to enroll in courses that they think they can master and that have high task value for them. Expectations for success (alternatively, a sense of domain-specific personal efficacy) depend on the confidence the individual has in his or her intellectual abilities and on the individual's
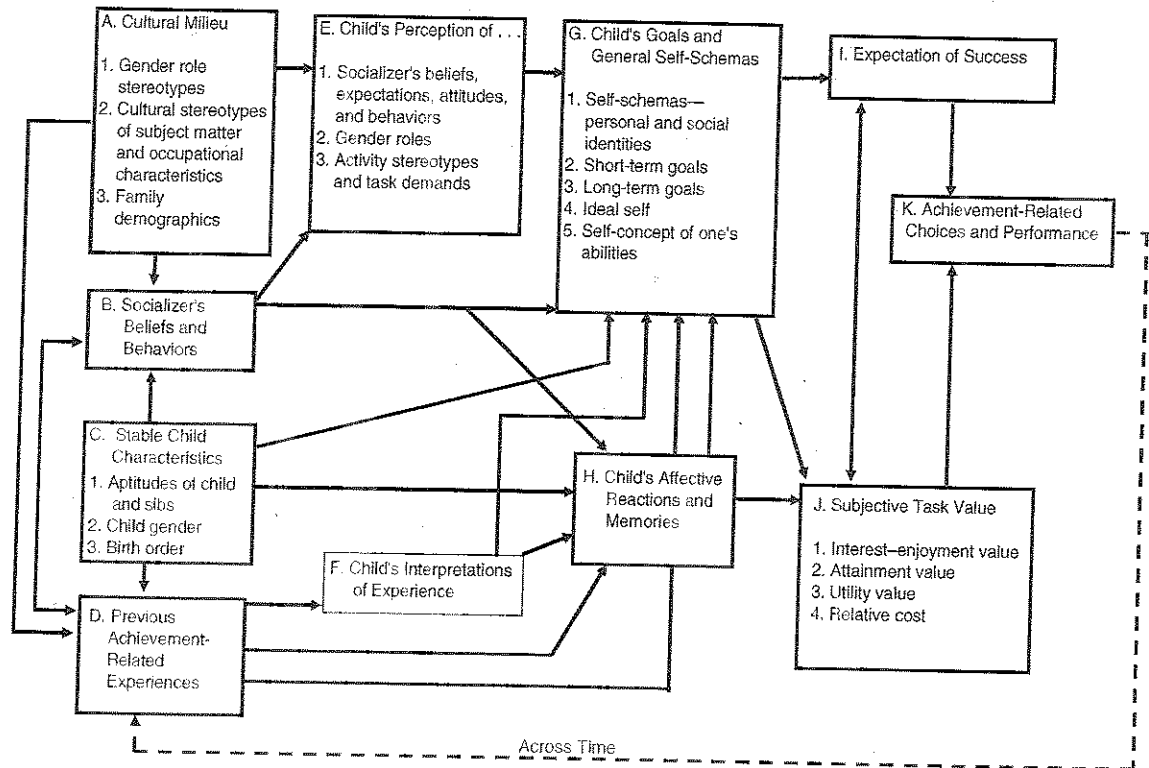
FIGURE 7.1. General expectancy–value model of achievement choices.

estimations of the difficulty of the course. These beliefs are shaped over time by the individual's experiences with the subject matter and by his or her subjective interpretation of those experiences (e.g., Does the person think that his or her successes are a consequence of high ability or lots of hard work?). Likewise, the value of a particular course to the individual is influenced by several factors. For example, does the person enjoy doing the subject material? Is the course required? Is the course seen as instrumental in meeting one of the individual's long- or short-range goals? Have the individual's parents or counselors insisted that the course be taken or, conversely, have other people tried to discourage the individual from taking the course? Is the person afraid of the material to be covered in the course? Does the person think that the course is appropriate for people like him or her? Finally, does taking the course interfere with other more valued options?

Four features of our approach that are not

well captured by the static model depicted in Figure 7.1 are particularly important for understanding individual, as well as gender and other group, differences in achievement-related choices: First, we focus on achievement-related behaviors that involve both conscious and nonconscious choices. Although the language we use to describe the various components makes it seem that we are talking about quite conscious processes, this is not our intention. Please bear in mind that this is a problem with the language rather than the theory. We believe that the conscious and nonconscious choices people make about how to spend time and effort lead, over time, to marked differences between groups and individuals in lifelong achievement-related patterns. For example, many of the most interesting gender differences (e.g., educational and vocational aspirations, and educational, vocational, and avocational activity choice/involvement) occur on achievement-related behaviors, aspirations, or involve the element of choice,

even if the outcome of that choice is heavily influenced by socialization pressures and cultural norms.

Focusing attention on achievement-related choices reflects a second important aspect of our perspective, namely, the issue of what becomes part of an individual's field of possible choices. Although individuals choose from among several options, they do not actively, or consciously, consider the full range of objectively available options. Many options are never considered, because the individual is unaware of their existence. Other options are not seriously considered, because the individual has inaccurate information regarding either the option itself or the individual's possibility of achieving the option. For example, young people often have inaccurate information regarding the full range of activities associated with various career choices or the financial assistance available for advanced educational training. Yet they make decisions about which occupations to pursue, and they select courses in high school that they believe are important for getting into college and majoring in the subject most directly linked to their career aspirations. Too often, these choices are based on either inaccurate or insufficient information. In addition, many options may not be seriously considered, because the individual does not believe that a particular choice fits well with his or her gender-role or other social-role schemas. Again, inaccurate information about what occupations are actually like can lead to premature elimination of quite viable career options. For example, a young woman with excellent math skills may reject the possibility of becoming an engineer, because she has a limited view of what engineers actually do. She may stereotype engineers as nerds or as folks who focus on mechanical tasks, with little direct human relevance, when, in fact, many engineers work directly on problems related to pressing human needs.

A third important feature of our perspective is the explicit assumption that achievement-related decisions, such as the decision to enroll in an accelerated math program or to major in education rather than law or engineering, or to devote a lot of energy to school achievement rather than social activities, are made within the context of a complex social reality that presents each individual with a wide variety of choices, each of which has both long-range and immediate consequences. Furthermore, the choice is often between two or more positive options, or between two or more options that each have both positive and negative components. For example, the decision to enroll in an advanced math course is typically made in the context of other important decisions, such as whether to take advanced English or a second foreign language, whether to take a course with one's best friend or not, or whether it is more important to spend one's senior year working hard or having fun, and so on. The critical issue in our view is the relative personal value of each option. Given high likelihood of success, we assume that people will then choose those tasks or behaviors that have relatively higher personal value. Thus, it is the hierarchy of subjective task values that matter, rather than the absolute values attached to the various options under consideration. This feature of our approach makes within-person comparisons much more relevant than between-group, mean-level comparisons.

Consider, as an example, two junior high school students: Mary and Barbara. Both young women enjoy mathematics and have always done very well. Both have been identified as gifted in mathematics and have been offered the opportunity to participate in an accelerated math program at the local college during the next school year. Barbara hopes to major in communications when she gets to college and has also been offered the opportunity to work part-time at the local television news station doing odd jobs and some copyediting. Mary hopes to major in chemistry in college and plans a career as a research scientist. Taking the accelerated math course involves driving to and from the college. Since the course is scheduled for the last period of the day, it will take the last two periods of the day, as well as 1 hour of afterschool time to take the course. What will the young women do? In all likelihood, Mary will enroll in the program, because she likes math and thinks that the effort required to both take the class and master the material is worthwhile and important for her long-range career goals. Barbara's decision is more complex. She may want to take the class but may also think that the time required is too costly, especially given her al-

ternative opportunity at the local television station. Whether she takes the college course or not will depend, in part, on the advice she gets at home and from her counselors. If they stress the importance of the math course, then its subjective worth to her is likely to increase. If its subjective worth increases sufficiently to outweigh its subjective cost, then Barbara will probably take the course despite its cost in time and effort.

A true-life experience with my daughter provides another example. In the third grade, she did not do very well on her report card. I asked her why she was doing so poorly. In her first reply, she said other children also were doing poorly. I reacted by saying I really did not care how the other children were doing. I was only concerned with her poor performance, to which she replied, "But I would have to work harder to do better." I agreed and asked why she was not working harder. She replied, "What do you want me to do? Waste my childhood doing schoolwork?" Clearly, she had no problems with her sense of personal efficacy. Instead, she just did not value doing schoolwork as much as she valued other ways of spending her time. These two examples point to the importance of the value component of the Eccles et al. expectancy–value model. I focus on this component in this chapter.

Finally, we assume that the processes summarized in Figure 7.1 are both developmental and dynamic. The model provides a snapshot of both the processes at one point in time and a global view of the developmental sequence linking exogenous and sociocultural influences to the emergence of the psychological processes depicted on the right side of Figure 7.1. But the relations within the entire system are quite dynamic both moment-to-moment and across developmental history. Like many researchers interested in self-processes, we assume that both personal states and situational characteristics will make the various components of the self-system more or less salient at different times. As such, the immediate subjective task value of various options and behaviors will fluctuate depending on the salience of different components of the self-system. We also assume that the components of the self-system change across developmental time in response to experience with specific

tasks, changing cognitive abilities and interpretative beliefs, changing socialization pressures, and changing sociocultural influences. Finally, we assume the relative salience of the subcomponents of subjective task value will change developmentally and across situations. Like Deci and Ryan (1985), we believe that the relative importance of different aspects of a task for behavioral choices will vary across developmental time due to such developmental processes as internalization, maturation, and life stage. For example, the relative salience of intrinsic enjoyment of a task may be particularly salient to young children and to people primarily interested in leisure pursuits (Wigfield & Eccles, 1992). In contrast, the utility value of a task for fulfilling one's goals may be particularly salient during those periods in life when one is most engaged in striving to achieve these goals. For example, the utility value of particular school courses for one's career goals is likely to be a particularly salient influence on choices during adolescence, when one is preparing oneself for a particular occupation.

In summary, as outlined in Figure 7.1, my colleagues and I assume that achievement-related choices (e.g., educational, occupational, and leisure-time choices), whether made consciously or nonconsciously, are guided by the following: (1) one's expectations for success on, and sense of personal efficacy for, the various options, as well as one's sense of competence for various tasks; (2) the relation of the options both to one's short- and long range goals and one's core personal and social identities, and basic psychological needs; (3) the individual's culturally based role schemas, such as those linked to gender, social class, religious group, and ethnic group; and (4) the potential cost of investing time in one activity rather than another. We assume that all of these psychological variables are influenced by one's experiences and interpretation of these experiences, by cultural norms, and by the behaviors and goals of one's socializers and peers.

In this chapter, I focus on the subjective task value (STV) component of the Eccles et al. expectancy–value model. As the example of the two young women given earlier illustrates, I am particularly interested in the role that STV plays in shaping individuals'

achievement-related decisions about activity choice, participation, and degree of engagement. Because the Eccles et al. model was originally designed to explain a sociocultural phenomenon—gender differences in achievement-related choices, I believe it is particularly well suited for a sociocultural analysis of motivation and activity choices. I predict that sociocultural differences in a wide array of activity and behavioral choices, particularly in the achievement domain, reflect cultural differences in success expectations and STV-related beliefs, which, in turn, likely result from sociocultural differences in the wide range of social experiences that shape human development. The work my colleagues and I have done on gender within the United States provides comprehensive examples of just how these sociocultural processes can work. I summarize some of this work in this chapter, paying particular attention to our gender work on STV.

OVERVIEW OF THE COMPONENTS OF SUBJECTIVE TASK VALUE

Our initial theorizing about STV was heavily influenced by the work of Norm Feather (1988, 1992). Like Feather, we assume that task value is a quality of the task that contributes to the increasing or decreasing probability that an individual will select it (see Eccles, 1987; Eccles et al., 1983; Wigfield & Eccles, 1992). We define this quality of tasks in terms of four components: (1) attainment value, or the value an activity has because engaging in it is consistent with one's self-image; (2) intrinsic or interest value—expected enjoyment of engaging in the task; (3) the utility value of the task for facilitating one's long-range goals or helping the individual obtain immediate or long-range external rewards; and (4) the cost of engaging in the activity.

Attainment Value

Building on Battle's (1966) work on "attainment value," we define it in terms of the personal importance attached to doing well on, or participating in, a given task. Our notion of attainment value is closely linked to work on identity: We predict that tasks will be seen as important when individuals view engaging in the task as central to their own sense of themselves (i.e., their core social and personal identities), because such tasks provide the opportunity for the individual to express or confirm important aspects of the self. In this sense, our notion of attainment value is similar to ideas proposed by Connell and Wellborn (1991) and Deci and Ryan (1985) linking motivation and engagement to the extent to which tasks and activities fulfill the basic human needs of autonomy, competence, and relatedness. Connell and Wellborn (1991) argued that people's motivation to engage in a task is influenced by the extent to which the task provides opportunities to fulfill their basic needs for autonomy, social relatedness, and a sense of competence. In this sense, their theory is a variant on more basic person–environment fit theories that stress the importance of a good fit between the opportunities provided by the environment and the needs of the individuals for optimal motivation. Our notion of attainment value represents our operationalization of this same principle. In addition, however, I would add the following basic needs and values to the list proposed by Connell and Wellborn: (1) the need to feel that what one does matters in a fundamentally important way to one's social group, and (2) the need to feel respected and valued by one's social group.

Other theorists (e.g., Harter, 1983; White, 1959) have also pointed out the importance of effectance, competence, and social relatedness needs. The importance of competence needs, in particular, has received a great deal of attention in the achievement literature. For example, in her model of mastery or effectance motivation, Harter (1983) described the effects of both success and failure experiences on mastery motivation. She proposed that successful mastery attempts that are positively reinforced lead to internalization of the reward system. They also enhance perceptions of competence and perceived internal control over outcomes, give the individual pleasure, and ultimately increase mastery motivation. In contrast, when mastery attempts fail, the need for approval by others persists, with a corresponding increase in external control beliefs, lower competence beliefs, higher anxiety in mastery situations, and ultimately, lower mas-

tery motivation. This perspective is important, because it links success and failure experiences to subsequent general motivational orientations, which, we believe, in turn influence the attainment values attached to whole categories of activities (e.g., activities that provide opportunities to demonstrate mastery and competence).

A similar analysis applies to the success and failure on particular tasks. If one has had a history of success on particular tasks, then, through the processes associated with both self-knowledge and identity formation, and classical conditioning, the individual will come to see him- or herself in terms of these particular competencies and to feel good when anticipating engaging in tasks that provide the opportunity to demonstrate these specific competencies. In contrast, if the individual has failed at mastery attempts on particular tasks and feels incompetent at those tasks, then he or she is likely to lower the value attached to being competent at these particular types of tasks because he or she will not see such tasks as providing the opportunity to feel competent (see Bandura, 1986, for similar discussion of the relation between prior success and failure and current task value).

We believe that the attainment value of various tasks is influenced by the affordances provided by these tasks to fulfill a whole array of individual needs and personal values. As we grow up, we develop images of who we are and what we would like to be. These image are made up of many component parts, including (1) our conceptions of our own personality and capabilities; (2) our long-range goals and plans; (3) our schema regarding the proper roles of people "like us" (e.g., men vs. women, Jews vs. Gentiles, Italians vs. Englishmen, young people vs. older people, Goths vs. Preppies), as well as our more general social scripts regarding proper behavior in a variety of situations; (4) our instrumental and terminal values (Rokeach, 1973); (5) our motivational sets or goal orientations; and (6) our images of our ideal or hoped-for selves. Together, the most central parts of these images and schemas comprise our personal and social identities. These social and personal identities should have the most powerful influence on the value each individual attaches to various educational and vocational op-

tions; these differential values, in turn, should influence the individual's achievement-related choices (Eccles, 1984, 1987). For example, if helping other people is a central part of an individual's personal identity, then that person should place higher value on "helping" than on "nonhelping" occupations. Essentially, I am arguing that individuals perceive tasks in terms of certain characteristics that can be related to their needs and values. In turn, tasks that fit well with one's values, goals or needs, will be seen as having high STV; tasks that do not fit well, or that actually are in opposition to one's values, goals, or needs, will be seen as having low or even negative STV.

Recent work by scholars interested in goal orientations (Ames & Ames, 1989; Dweck & Elliott, 1983; Elliot & McGregor, 2001; Midgley, Anderman, & Hicks, 1995; Nicholls, 1984; see also Pintrich & Schunk, 2002) provides a good example of these processes. Initially, goal orientation theorists hypothesized that achievement tasks vary along two dimensions: (1) the extent to which mastery or improvement is stressed, and (2) the extent to which doing better than others is stressed. They also hypothesized that individuals differ in the salience and importance of these two dimensions: Some are oriented primarily to the mastery component; others, primarily to the competitive component; and still others, to both or neither of these aspects of achievement tasks. To the extent that these individual differences in goal orientation are a central part of one's core self, achievement tasks or situations that emphasis one or the other of these two components will have different STV to individuals, depending on their goal orientation. People who think of themselves as very competitive, or who have a highly competitive temperament or motivational need, will attach greater STV to competitive achievement tasks than individuals who do not value competitiveness as a personal characteristic, or who do not want to seen by others as a competitive person. In contrast, if individuals place great importance on the mastery component of achievement tasks, they should place high value on mastery-based achievement tasks and may avoid achievement tasks that stress comparing one's performance to others rather than to one's own past performance.

Tasks may be also perceived in terms of nurturance, power, aesthetic pleasure, and so on. Participating in particular tasks requires the demonstration of the characteristics associated with the task. Whether this requirement is seen as an opportunity or a burden will depend on the individual's needs, motives, and personal values, and on his or her desire to demonstrate these characteristics both to him- or herself and to others.

In summary, we assume the following: (1) Individuals seek to confirm their possession of those characteristics central to their self-image; (2) various tasks provide differential opportunities for such confirmation; (3) individuals place more value on those tasks that either provide the opportunity to fulfill their self-image or are consistent with their self-image and long-range goals; and (4) individuals are more likely to select tasks with high subjective value than tasks with lower subjective value. To the extent that groups of people, such as males and females, come to have different self-images, needs, goals, and personal values through the processes associated with sociocultural learning, various activities will come to have different subjective value for males and females.

Intrinsic and Interest Value

I reserve the term "intrinsic value" for either the enjoyment one gains from doing the task or the anticipated enjoyment one expects to experience while doing the task. In this sense, my notion of intrinsic value is similar to the idea of flow, as proposed by Csikszentmihalyi (1988), who discussed intrinsically motivated behavior in terms of the immediate subjective experience that occurs when people are engaged in the activity. Interviews with climbers, dancers, chess players, basketball players, and composers revealed that these activities yield a specific form of experience, labeled "flow," characterized by (1) holistic feelings of being immersed in, and of being carried by, an activity; (2) merging of action and awareness; (3) focus of attention on a limited stimulus field; (4) lack of self-consciousness; and (5) feeling in control of one's actions and the environment. Flow is only possible when people feel that the opportunities for action in a given situation match their ability to master the

challenges. The challenge of an activity may be something concrete or physical, such as the peak of a mountain to be scaled, or it can be something abstract and symbolic, such as a set of musical notes to be performed, a story to be written, or a puzzle to be solved. Research has shown that both the challenges and skills must be relatively high before a flow experience becomes possible (Massimini & Carli, 1988).

Our notion of intrinsic task value is also related to the idea of interest value used by Hidi (1990), Renninger, Hidi, and Krapp (1992), Schiefele (1991), and Tobias (1994). These researchers differentiate between individual and situational interest. Individual interest is a relatively stable evaluative orientation toward certain domains; situational interest is an emotional state aroused by specific features of an activity or a task. Two aspects or components of individual interest are distinguishable (Schiefele, 1991, 1996): feeling-related and value-related interest. "Feeling-related interest" refers to the feelings that are associated with an object or an activity itself—feelings such as involvement, stimulation, or flow. "Value-related interest" refers to the attribution of personal significance or importance to an object. In addition, both feeling-related and value-related valences are directly related to the object rather than to the relation of this object to other objects or events. For example, if students associate mathematics with high personal significance because mathematics can help them get prestigious jobs, then we would describe this aspect as utility value rather than interest value.

We know little about the origins of either within-individual or between-individual differences in interest. In some ways, individual differences in patterns of interest are related to issues discussed under attainment value: The attraction to, or enjoyment of, particular types of activities are undoubtedly linked to core aspects of the self, such as temperament, personality, motivational orientations. It is also likely to be linked to both genetic propensities and to classical learning associated with either positive or negative emotional experiences during initial encounters with particular activities.

In the last 30 years, educational psychologists have become interested in individual differences in a more general, individual in-

terest pattern, namely, one associated with trait-like individual differences in what might be referred to as the desire to learn (see Amabile, Hill, Hennessey, & Tighe, 1994; Gottfried, 1990; Harter, 1981; Midgley, 2002; Nicholls, 1984; Schiefele, 1996). These researchers define this enduring learning orientation in terms of three components: (1) preference for hard or challenging tasks, (2) learning that is driven by curiosity or interest, and (3) striving for competence and mastery. The second component is most central to the idea of intrinsic task value. Both preference for hard tasks and striving for competence are linked more closely with what we call "attainment value." Nonetheless, empirical findings suggest that these three components are highly correlated, and that high levels of a trait-like desire to learn facilitates positive emotional experience (Matsumoto & Sanders, 1988), self-esteem (Ryan, Connell, & Deci, 1985), mastery-oriented coping with failure and high academic achievement (Benware & Deci, 1984), and use of appropriate learning strategies (Pintrich & Schrauben, 1992).

We know much more about the task characteristics linked to situational interest in part because the research on school-related situational interest has focused on the characteristics of academic tasks that create interest (e.g., Hidi, 1990). Among others, the following text features arouse situational interest: personal relevance, both familiarity and novelty, activity level, and comprehensibility (Hidi & Baird, 1986). We also know that there is strong empirical support for the relation of both individual and situational interest with text comprehension and recall, and with deep-level learning (see Renninger et al., 1992; Schiefele, 1996).

Before leaving this discussion of intrinsic–interest value, it is important to note that we do not see it is as the same as intrinsic motivation. Certainly doing something because one loves the experience of doing it is an example of intrinsic motivation. But, as I discuss later, intrinsic motivation has more to do with the origin of the decision to exchange in the activity than with the source of the activities value. Extrinsic rewards can undermine an individual's intrinsic motivation to engage in tasks that the individual finds intrinsically interesting.

Utility Value

"Utility value," or usefulness, refers to how a task fits into an individual's future plans, for instance, taking a math class to fulfill a requirement for a science degree. In certain respects, utility value is similar to extrinsic motivation, because when doing an activity out of utility value, the activity is a means to an end rather than an end in itself (see Ryan & Deci, 2000). However, the activity can relate also to some important personal goals, such as attaining a certain occupation. In this sense, utility value is also related to personal goals and one's sense of self. This aspect of utility value makes this component of task value somewhat similar to Deci and Ryan's (1985) idea of introjected value. The relation between utility value and attainment value is also quite close to the distinction Deci and Ryan make between introjected behavioral regulation and integrated behavioral regulation. To the extent that one's short- and long-range goals become an integral part of one's identity and needs, then tasks that fulfill these goals have both utility and attainment value. In this sense, the distinction also relates to Harter's (1998) notion of the authentic self and to the distinction Higgins (1987) makes between the ought, ideal, and actual selves.

Perceived Cost

According to the Eccles et al. model, the value of a task should also depend on a set of beliefs that can best be characterized as the cost of participating in the activity. Cost is influenced by many factors, such as anticipated anxiety, fear of failure, fear of the social consequences of success, such as rejection by peers, or anticipated sexual harassment or discrimination, or anger from one's parents or other key people, and fear of loss of a sense of self-worth (Covington, 1992).

The last conceptualization of cost is similar to the kinds of dynamics discussed by Covington in his self-worth theory. Covington (1992) defined the motive for self-worth as the desire to establish and maintain a positive self-image, or sense of self-worth. Because children spend so much time in classrooms and are evaluated so frequently there, Covington argued that protecting one's

sense of academic competence is likely to be critical for maintaining a positive sense of self-worth. However, school evaluation, competition, and social comparison can make it difficult for some children to maintain the belief that they are competent academically. Covington outlined various strategies children develop to avoid appearing to lack ability, including procrastination, making excuses, avoiding challenging tasks, and not trying. The last two strategies are particularly interesting. Covington and Omelich (1979) referred to effort as a "double-edged sword," because although trying is important for success (and is encouraged by both teachers and parents), if children try and fail, then it is difficult to escape the conclusion that they lack ability. Therefore, if failure seems likely, some children will not try, precisely because trying and failing threatens their ability self-concepts. Avoiding challenging tasks is a good way to avoid or minimize failure experiences that is used by even high-achieving students who are failure avoidant. Rather than responding to a challenging task with greater effort, these students try to avoid the task altogether, in order to maintain both their own sense of competence and others' perceptions of their competence.

Cost can also be conceptualized in terms of the loss of time and energy for other activities. People have limited time and energy. They cannot do everything they would like to do. They must choose among activities. To the extent that one loses time for Activity B by engaging in Activity A, and to the extent that Activity B is high in one's hierarchy of importance, then the subjective cost of engaging in A increases. Alternatively, even if the attainment value of A is high, the value of engaging in A will be reduced to the extent that the attainment value of B is higher, and to the extent that engaging in A jeopardizes the probability of successfully engaging in B (see Kerr, 1985, for good examples of this process in action in gifted women's lives).

Thus, cost refers to what the individual has to give up to do a task (e.g., "Do I do my math homework or call my friend?"), as well as the anticipated effort one will need to put into task completion. Is working this hard to get an A in math worth it? My col-

leagues and I have emphasized that cost is especially important to choice, and that sociocultural processes linked to gender and cultural socialization should have a big influence on the perceived cost of various activities precisely because the goal of these socialization practices is to teach which activities should be given the highest priority (e.g., see Eccles, 1984, 1987, 1989).

The examples provided earlier illustrate this idea of cost very concretely. Choices are influenced by both negative and positive task characteristics, and all choices are assumed to have costs associated with them, because one choice often eliminates other options. If Mary, from the earlier example, follows her inclinations and chooses to major in chemistry in college, she will not be able to pursue other possible majors. In addition, because chemistry is a particularly demanding major with lots of requirements, she will not even be able to take very many nonscience courses. Thus, she will have to forgo the opportunity to take courses in many other fields and on many other topics. She will also have to spend a great deal of time on her course work. How she reacts to these inherent costs in majoring in chemistry will impact on her decision to complete this major.

RELATION OF SUBJECTIVE TASK VALUE THEORY TO TWO OTHER MOTIVATIONAL THEORIES: INTRINSIC MOTIVATION AND GOAL THEORIES

In the previous sections, I related the specific components of my STV theory to other motivational theories. There are, however, two more global theories of motivation that relate to various aspects of STV in a more holistic way.

Self-Determination Theory

Several motivational theorists have focused attention on the distinction between *intrinsic* motivation and *extrinsic* motivation (e.g., Deci & Ryan, 1985; Harter, 1983; Lepper, 1988; Ryan & Deci, 2000). When individuals are intrinsically motivated, they do activities for their own sake and out of interest in

the activity. When extrinsically motivated, individuals do activities for instrumental or other reasons, such as receiving a reward. Typically, these theorists assume that intrinsic motivation is better than extrinsic motivation. In general, evidence supports this assumption. For example, many studies have documented the debilitating effects of extrinsic incentives and pressures on the motivation to perform even inherently interesting activities and the facilitative effects of intrinsic motivation on many aspects of learning and task engagement (e.g., see Deci & Ryan, 1985; Harter, 1983; Lepper, 1988). But what determines intrinsic motivation? Most theorists believe that instrinsic motivation derives from human beings' basic needs for competence and effectance (Harter, 1983; White, 1959) and their basic need for personal causation and self-determination (deCharms, 1968). Deci and Ryan (1985) argued that the basic needs for both competence and self-determination are the major reason why people seek out optimal stimulation and challenging activities, and that intrinsic motivation is maintained only when actors feel both competent and self-determined.

Deci and Ryan (1985) also argued that the basic needs for competence and self-determination play a role in more extrinsically motivated behavior. Consider, for example, a student who consciously, and without any external pressure, selects a specific major because it will help him or her earn a lot of money. This student is guided by basic needs for competence and self-determination, but his or her choice of major is based on reasons totally extrinsic to the major itself. Thus, although this student's choice of major is intrinsically motivated in that it is self-determined, it is not intrinsically motivated in the sense that the activity itself is intrinsically interesting. In our terms, the major has utility value rather than intrinsic value.

By introducing the idea of self-determination, Deci and Ryan (e.g., Ryan, 1992; Ryan & Deci, 2000) went beyond the extrinsic–intrinsic motivation dichotomy common in most discussions of intrinsic versus extrinsic motivation. Key to their perspective is not whether the task has intrinsic or extrinsic value, but whether or not engagement in the task is self-determined. They do, however,

also argue that optimal motivation and performance is linked to both self-determination and valuing the task itself.

Deci and Ryan (1985) also elaborated a developmental theory associated with internalization to explain the process of transferring the regulation of behavior from outside to inside the individual. They postulated that a basic need for interpersonal relatedness explains why people turn external regulation into internal regulation through the process of internalization. Furthermore, they argued that internalization takes place through a series of developmental steps. At the beginning, behavior is primarily under *external regulation*. Later, behavior comes under the *introjected regulation processes* associated with feelings that one should do the behavior. This step is followed by the *identified regulation processes* associated with the utility of that behavior to meet internalized goals (e.g., studying hard to get grades to get into college) and then by the *integrated regulation processes* associated with what the individual thinks is valuable and important to the self. Even at the integrated regulation level, however, behavior is not fully internalized and self-determined; for the behaviors to be full internalized and self-determined, the individual must also be highly interested in the behavior. Although this theory of internalization has sequential properties inherent in its structure, Deci and Ryan also measure all aspects of behavioral regulation at the same time and sometimes assume that individuals can be motivated by all aspects of regulation at the same time— an assumption with which I agree. In this way, these forms of behavioral regulation have some similarity to the different aspects of STV discussed earlier: Attainment value comes closest to Deci and Ryan's notion of integrated regulation; intrrinsic/interest value comes closest to Deci and Ryan's notion of internalized regulation; utility value comes closest to Deci and Ryan's notion of identified regulation, but it also shares some similarity with both introjected and external regulation.

There are several differences in the emphases in these two approaches. In my approach to STV theory, these various aspects of task value cumulate to determine the final STV. In addition, I stress the role of cost in determining each task's or activity's STV.

Thus, I stress the fact that the same activity can have multiple sources of STV simultaneously, that more sources can yield higher levels of STV, and that it is this cumulative STV that is key to predicting behavioral choice. I also avoid privileging internal regulation over the other forms of task value. Finally, I do not conceptualize the developmental sequence in such a linear way. Some activities are intrinsically interesting from the start and have high value because the young child finds them inherently interesting, fun, and rewarding. Similarly, although I do believe that some aspects of behavioral regulation do follow the type of internalization sequence proposed by Deci and Ryan, I also believe that other aspects of the values underlying behavioral choices do not follow such a linear sequence. Attainment value is a good example. I believe that many of the self-system dynamics underlying attainment value are discovered through the processes of self-socialization and identity formation, rather than the processes associated with internalization. In addition, I believe that life stages will lead the various subcomponents of STV to have different salience at different points in one's life.

Goal Theories

Recently researchers have become interested in children's achievement goals and their relation to achievement behavior (see Ames & Ames, 1989; Dweck & Elliott, 1983; Elliot & MacGregor, 2001; Ford, 1992; Harackiewicz & Elliot, 1993; Meece, 1991, 1994; Midgley, 2002; Midgley et al., 1995; Nicholls, 1984). Earlier, I discussed the relation of some aspects of achievement goal orientation work to our idea of attainment value. In this section, I say more about the link between goal theories and STV.

Achievement goal orientation theories are currently the most popular form of goal theory. Proponents of this approach focus broadly on two basic goals: mastery or task-involved goals and performance or ego-involved goals. For example, Nicholls and his colleagues (e.g., Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990) defined two major goal patterns or orientations: ego-involved goals and task-involved goals. Individuals with ego-involved goals seek to maximize favorable evaluations of their competence and minimize negative evaluations of competence. Questions such as "Will I look smart?" and "Can I outperform others?" reflect ego-involved goals. In contrast, individuals with task-involved goals focus on mastering tasks and increasing their competence. Questions such as "How can I do this task?" and "What will I learn?" reflect task-involved goals. Nicholls also discussed a third type of goal orientation, work avoidance.

Dweck and her colleagues (e.g., Dweck & Elliott, 1983), Ames (1992), and Midgley and her colleagues (see Midgley, 2002) provide complementary analyses distinguishing between performance goals (e.g., ego-involved goals), and mastery goals (e.g., task-involved goals). Most recently, Elliot and MacGregor (2001) made the distinction between approach and avoidance goals, and suggested a 2×2 matrix of achievement goals that crossed approach and avoidance goals with performance and mastery goals. To the extent that these goals represent core aspects of the self or trait-like motivational orientations, these goals should relate to STV through their impact on attainment value and perceived cost.

Other researchers (e.g., Ford, 1992; Wentzel, 1991) have adopted a broader perspective on goals and motivation, arguing that there are many different kinds of goals that individuals can have in achievement settings. For example, Ford defined "goals" as desired end states that people try to attain through the cognitive, affective, and biochemical regulation of their behavior. Ford (1992) outlined an extensive taxonomy of goals that distinguished most broadly between *within-person* goals, which concern desired within-person consequences, and *person–environment* goals, which concern the relation between the person and his or her environment. The within-person goals include affective goals (e.g., happiness, physical well-being), cognitive goals (e.g., exploration, intellectual creativity), and subjective organization goals (e.g., unity, transcendence). The person–environment goals include self-assertive goals, such as self-determination and individuality, integrative social relationship goals, such as belongingness and social responsibility, and task goals, such as mastery, material gain, and safety. In many respects, both of these clusters of goals

are similar to the types of goals that, I argue, influence the attainment value of various tasks, because the tasks provide an opportunity to enact and demonstrate one's goals.

Wentzel, a student of Ford, has examined the role of multiple goals in adolescents in achievement settings (e.g., Wentzel 1991, 1993). She focuses on the way in which the *content* of children's goals guides and directs behavior. In this sense, Wentzel's goals are like the goals and self-schema that relate to our notion of attainment value hierarchies. For instance, Wentzel found that the goals such as seeing oneself as successful, dependable, wanting to learn new things, and wanting to get things done, predict school achievement. In order to understand students' engagement in school achievement-related activities, one would need to measure these various goals and the extent to which various activities were perceived by the students as providing opportunities or barriers to their fulfillment of these goals. Wentzel has begun this work by demonstrating that both social and academic goals predict adolescents' school performance and behavior (see Juvonen & Wentzel, 1996).

BUT DO SUBJECTIVE TASK VALUES ACTUALLY INFLUENCE ACHIEVEMENT-RELATED CHOICES?

Is there any evidence to support the importance of these aspects of STV for predicting behavioral choices? *Yes* (see Eccles et al., 1998, for review). In this chapter, I focus on only one aspect of the question: Do individual differences in relative perceived value of a variety of occupations influence individual differences in occupational choice? Several studies provide support for the hypothesized link of personal values to a variety of achievement-related choices, including course enrollment decisions, occupational choices, college major, and involvement in sports (see Eccles et al., 1998). Given space limitations, I focus only on the findings from our longitudinal study of approximately 1,000 adolescents from southeastern Michigan (Michigan Study of Adolescent Life Transitions, MSALT). When these adolescents were seniors in high school, we assessed the following constructs: their occupational aspirations, the value and impor-

tance they attached to a wide array of both occupations and occupational characteristics (e.g., work that allows one to help other people, work that allows one to earn a lot of money, etc.), and their personal efficacy for success in the same array of occupations. We then used discriminant analysis to determine the strongest predictors of occupational choice within rather than across genders (Eccles, Barber, & Jozefowicz, 1999; Eccles & Vida, 2003; Jozefowicz, Barber, & Eccles, 1993).

As predicted, the relevant dimension of personal efficacy/expectations for success was an important predictor for every occupational category (e.g., efficacy for health-related occupations was a strong predictor only of plans to enter a health-related profession; efficacy for working with people was a strong predictor only of plans to enter a human service occupation). In addition, as predicted, the values attached to relevant job characteristics were significant predictors of occupational aspirations. But the findings for values were more complex, in that values had both positive and negative predictive power. As predicted in our model, for any given occupational category, the extent to which the individual valued characteristics associated with the occupation predicted plans to enter that occupational category (e.g., valuing creativity predicted women's plans to become artists or writers, valuing helping others predicted women's plans to enter either human service or health-related professions). In addition, however, and consistent with the notion that the individual hierarchy of values matters, valuing helping others predicted *not aspiring* to either a physical science–related profession or a business/law-related profession, as well as not majoring in these fields and not being employed in these fields as a young adult. Similarly, valuing occupational prestige predicted *not aspiring* to a human service occupation.

SUBJECTIVE TASK VALUE AND BOTH CULTURAL AND GENDER DIFFERENCES IN ACHIEVEMENT-RELATED CHOICES

As noted in the introduction to this chapter, I believe that the sociocultural processes associated with gender-role and cul-

tural socialization should influence the ways in which members of different culturally based groups come to see themselves, as well as the goals and values they develop for their lives. In addition, experiences in different types of learning environments should influence the emotional experiences associated with different activities. Finally, cultures and countries should vary in the opportunities provided to try different types of activities, as well as in the range of activities made available and salient to various individuals living within the group. Each of these processes should lead to both cultural group differences and within-culture individual differences in STVs. I discuss this more later.

At an even more basic level, cultures differ in the extent to which individuals have "choice" over such achievement-related behaviors as educational focus, careers, and leisure activities. Western cultures pride themselves on allowing individuals to make these choices for themselves, even though choice still continues to be heavily socialized in these Western cultures. Other cultures place less emphasis on individual choice, particularly individual choice based on maximizing self-fulfillment and self-actualization. For example, in interviews with young professionals in China, I found that career choices were based much more on the needs of the community for particular types of skills than on the needs of the individual to find a job that maximized the fit of one's occupation with one's talents and interests. In most cases, the students think that their occupation was determined for them by their community, or by the State. Similarly, in interviews with Japanese students, I found that choices about future occupations were based more on the quality of the company than on the fit of the particular job category with the individual's talents and interests. In this case, the individuals were given more power to select their future occupation; but the criteria for their choice were quite different from the criteria advocated in vocational counseling in the United States.

Does this mean that the Eccles et al. expectancy–value model is not a useful theoretical tool for such cultures? I think not. It does mean that we need to consider the cultural and social, as well as the psychological components, of the Eccles et al. model. For

this chapter, we need to pay particular attention to the sociocultural forces that underlie individual differences in STV. In both the Chinese and Japanese cases discussed earlier, the STV of various occupational categories was based on more communial considerations than is typical for European American adolescents. In addition, the relevance of ability self-concepts for choice should be less than it is for European American adolescents. These hypotheses need to be tested.

Equally important, cultures will differ in the range of options provided. Individuals are only exposed to narrow range of options available to them in any achievement domain. Cultures differ greatly in the kinds of day-to-day activities to which their children are exposed. For example, urban children in the United States are not likely to be exposed to playing cricket, African drums, or Balinese dancing for a leisure activity, or to farming as an occupational choice. Consequently, it is not surprising that American children are unlikely to choose these activities.

Sociocultural processes are also likely to produce cultural differences in expectancies, ability self-concepts, and all components of STV. For example, cultures likely differ in the stereotypes of different abilities. Some cultures believe that individual differences in math and sport ability reflect individual differences in practice and learning. Others believe these individual differences are due primarily to innate aptitude. It is likely that the conclusions the children in these different types of cultures draw about their abilities from their success and failure experiences in math and sports will differ—leading to culture differences in ability self-concepts for different academic domains.

The potential impact of sociocultural processes on the various components of STV is even clearer. Attainment value, for example, should be very culturally embedded. The value of various identity components, activities, and behaviors is a central component of culture. To the extent that individuals within a culture internalize the culturally proscribed identity components, these individuals will place greater importance (attainment value) on those behaviors and activities that are consistent with these identity components. Similarly, to the extent that individuals have internalized the culturally pro-

scribed identity components, the lower value, and the higher cost, they will attach to activities and behaviors that are inconsistent or antithetical with the culturally proscribed identity components.

The impact of sociocultural processes on utility and cost can be analyzed in a similar manner. If various adult roles are valued differently across cultures, then the utility value of those activities and behaviors likely to be instrumental to achieving these adult roles will also vary across cultures and subcultural groups. Similarly, the cost of engaging in activities or behaviors that reduce the likelihood of achieving these adult roles will vary across cultures. In addition, cultures will vary in their tolerance and encouragement of nontraditional and nonnormative behavioral choices. As the tolerance and encouragement go down, the cost of non-normative and nontraditional choices goes up—in some cases, to the point of death.

Finally, females and males in all cultures, as well as other cultural subgroups within a culture, engage in quite different activities both as children and adults. In part, these differences are likely to reflect differences in the choices to which females and males are exposed; in part, these differences reflect the impact of sociocultural processes on the development of females' and males' ability self-perceptions and STVs.

In summary, there are many ways in which culture might relate to the Eccles et al. expectancy–value model of achievement-related choices. In this section, I have stressed the relation between culture and the various components underlying STV. In the next section, I explore these links more fully, drawing upon our work in the area of gender.

DO GENDER DIFFERENCES IN SUBJECTIVE TASK VALUES HELP US UNDERSTAND GENDER DIFFERENCES IN ACHIEVEMENT-RELATED CHOICES?

Given the probable impact of gender-role socialization on the variables associated with STV, gender differences in the STV attached to various achievement-related options should be important mediators of gender

differences in educational and occupational choices in both typical and gifted populations. Our research supports this hypothesis. In a longitudinal study of the math course enrollment decisions of intellectually able, college-bound high school students, gender differences in students' decisions to enroll in advanced mathematics were mediated primarily by gender differences in the value that the students' attached to mathematics (Eccles, Adler, & Meece, 1984). More specifically, the young women were less likely than the young men to enroll in advanced mathematics, primarily because they felt that math was less important, less useful, and less enjoyable than did the young men. We also found clear evidence of gender differences in the value attached to various school subjects and activities in our study of elementary school-age children enrolled in a gifted program (Eccles & Harold, 1992). Even though there was no gender difference in expectations for success in mathematics, these girls reported liking math less than did the boys and rated math as less useful than did the boys. In addition, the boys also attached greater importance to sports than did the girls. Not surprisingly, the boys were much more likely to be engaged in sports activities throughout their elementary school years than the girls. Other studies of both gifted and more typical populations have yielded similar findings (Dauber & Benbow, 1990; see Eccles & Harold, 1992).

In summary, there is substantial evidence of gender differences in the valuing of various educational and occupational options. But do these differences explain gender differences in educational occupational choice? As noted earlier, I have found evidence that the answer is yes (see Eccles, 1987). Additional support for this hypothesis comes from the work of Benbow (1988; Benbow & Minor, 1986). Gifted girls in their study were less likely than gifted boys to take advanced mathematics, in part because they liked language-related courses more than they liked mathematics courses. In addition, they found weak but consistent positive relations in their gifted samples between liking of biology, chemistry, and physics, and subsequent plans to major in biology, chemistry, and physics. Finally, students' interest predicted course taking in high school and college.

CONCLUDING REMARKS

I had several goals for this chapter. First I wanted to outline in some detail my perspective of STV as a part of the Eccles et al. expectancy–value theory of achievement-related behavioral choices. The general outline of a theory of STV was developed by myself and my colleagues during the 1970s and 1980s. The basic elements were first discussed in Eccles (Parsons) et al. (1983) and in my 1984 Nebraska Symposium on Motivation chapter. These basic elements included an articulation of four critical subcomponents or influences on STV: attainment value, intrinsic interest value, utility value, and perceived cost. More recent accounts of these basic elements, along with a developmental analysis and an attempt to relate the basis elements to other motivational theories, appeared in a 1992 article by Wigfield and Eccles and a 1998 chapter by Eccles, Wigfield, and Schefiele. In this chapter, I have tried to articulate more fully my own perspective on each of the four basic elements, focusing most intensively on attainment value. This focus reflects my current interest in both social and personal identities.

I also wanted to articulate the relation of this perspective to other related motivational theories. This proved to be quite a challenge for two reasons: (1) The complexity of current theories of motivation made clear, unidimensional links difficult, and (2) all currently popular theories are dynamic and changing as the theorists talk more with each other. I found both of these challenges intrinsically interesting and important for the field. As each of the theories become more complex, they also become more similar. Being an integrative optimist, I want to interpret these theoretical shifts in terms of a developmental progression toward convergence on a comprehensive and predictively powerful set of principles of behavioral choice and motivation. We are not there yet, but we are getting closer.

Finally, I wanted to lay out the power of the STV perspective to analyze the sociocultural processes underlying group differences in behavioral choices. As the world becomes closer and globalization becomes more common, we are forced to think about group differences in behavioral choice. We need to understand the motivations of peo-ple who are culturally quite different from us. The fundamental question of motivation is why people do what they do. But can we develop theories that are sufficiently powerful to help us understand behavioral differences across various socioculturally defined groups? The final sections of this chapter represent my attempt to address this question. Again, I found this a quite challenging task, in part due to my own culturally and genetically based cognitive limitations, and in part due to the complexity of the task itself. But again, my optimism was reinforced. Many very smart people are trying to address this task, and I think our motivational theories are getting more powerful as we share our ideas with each other.

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