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CHAPTER 3

The Three-Ring Conception of Giftedness

A Developmental Model for Promoting Creative Productivity[4]

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Introduction From Joe

The original article on The Three-Ring Conception of Giftedness appeared in a 1978 edition of the *Kappan*. Although it was originally rejected by the journals in gifted education, it has now become the most widely cited article in the field. Over the years, I have updated the article three times to include new research and changes in identification and programming that have taken place in the field over the years. The original article and subsequent follow-ups have been cited approximately 3,000 times in national and international jour-

4 Renzulli, J. S. (2005). The Three-Ring Conception of Giftedness: A developmental model for promoting creative productivity. In R. J. Sternberg & J. Davidson (Eds.), *Conceptions of giftedness* (2nd ed., pp. 217–245). Boston, MA: Cambridge University Press.

nals. The most important point in the chapter is that our field needs to make differentiated provisions for both high-achieving students and what I have described in this chapter as creative productive giftedness. These two types of giftedness are not mutually exclusive, but it is important to recognize that creative and productive people represent the kind of giftedness found in people who have changed the world in both large and small ways. The chapter presented here is the most recent update. I am proud of the influence all of the Three-Ring articles have had because they show that a field can change its mind regarding long held beliefs about the nature of giftedness.

Outwitted
He drew a circle to shut us out
Heretic, rebel, a thing to flout.
But love and I had the wit to win
We drew a circle that took him in.

—Edwin Markham, *Quatrains*

The record of human accomplishments and the progress of civilization can, in many ways, be charted by the actions of history's most gifted and talented contributors to the arts, sciences, and all other areas of human performance. As early as 2200 B.C., the Chinese had developed an elaborate system of competitive examinations to select outstanding persons for government positions (DuBois, 1970), and down through the ages almost every culture has had a special fascination for persons who have made notable contributions to their respective areas of interest and involvement. The areas of performance in which one might be recognized as a "gifted" person are determined by the needs and values of the prevailing culture, and scholars and laypersons alike have debated (and continue to debate) the age-old issues of how certain human abilities, personalities, and environmental conditions contribute to what we call giftedness.

A fascination with persons of unusual ability and potential for extraordinary expertise in any and all fields of human performance has given rise to an area of study in psychology and education called gifted education. In a very general sense, this field focuses on two major questions:

1. What makes giftedness?
2. How can we develop giftedness in young people and adults?

These two questions are the focus of the conception of giftedness described in this chapter, which has evolved over a period of more than 30 years. Because this theory views giftedness as something we develop in certain people, at certain times, and under certain circumstances, a program development plan called the Enrichment Triad Model paralleled work on the conception of giftedness. This plan for the delivery of services describes how we can go about promoting creative productive giftedness and how various types of general enrichment for larger groups of students can serve as "identification situations" for more focused and advanced-level experiences designed to develop gifted behaviors in smaller numbers of students (Renzulli, 1977, 1982, 1992). This approach is a high-end learning example of what is popularly called performance-based or dynamic assessment. Both the conception of giftedness and program development theories have been paralleled by the creation of a wide array of practical instruments and procedures designed to implement the theories in a variety of learning environments (Reis, Burns, & Renzulli, 1992; Renzulli, 1997a, 1997b; Renzulli & Reis, 1997; Renzulli, Rizza, & Smith, 2002; Renzulli et al., 2002). I have always believed that, in an applied field of study, theory is not of much value unless it can give relatively specific direction to the persons ultimately responsible for putting the theory into practice. Most theorists leave practical applications to others; however, one of the characteristics of my work is that it has proceeded simultaneously along both theoretical and practical lines. For better or worse, I have never been content with developing theoretical concepts without devoting equal or even greater attention to creating instruments, procedures, and materials for implementing the various concepts. And theory in an applied field does not have much value if it is not compatible with practical realities, such as policies, personalities, governance, finances, how schools work, teachers' ways of knowing, and practices that can reasonably be expected to endure *beyond* the support usually accorded to pilot projects or experimental research studies. This approach has both advantages and disadvantages. An eye toward implementation allows for theory testing in practical settings and the opportunity to generate research data that can lend credence to the theory and/or point out directions where additional work needs to be done.

The research supporting the theory described in this chapter, as well as reactions to commentary by other writers, has been updated in a number of publications over the years (Renzulli, 1986, 1988, 1999). Because of space limitations, the majority of this research is referenced rather than described in detail. I do, however, refer to some of the modern theories of intelligence that have emerged since the original publication of this work because they have implications for the role that various kinds of intelligences play in the development of giftedness. In this chapter, I provide a description of the major

theoretical issues underlying various conceptions of giftedness, an overview of the Three-Ring Conception of Giftedness, some of the research that led to the initial development of the theory, and a brief description of research carried out in places that have used this model. Also included are a new dimension of the overall theory that deals with co-cognitive characteristics and a brief description of a plan for identifying students for special programs and services based on this conception of giftedness.

I would like to point out at the outset that I use the G-word as an adjective rather than a noun. So rather than writing about "the gifted," my preference is to discuss the development of gifted behaviors or giftedness. This use of terminology is in no way intended to negate the existence of persons who are at the high end of a continuum in any domain—general intelligence, mathematics, swimming, piano playing—but my preference is to write about a gifted mathematician, a gifted swimmer, or a gifted piano player. I also make a distinction between potential and performance. Persons can have remarkable potentials for mathematics, swimming, or piano playing, but until that potential is manifested in some type of superior performance, I am reluctant to say they have displayed gifted behaviors. And, of course, our main challenge as educators is to create the conditions that convert potential into performance.

Issues in the Study of Conceptions of Giftedness

Relationships Among Purpose, Conceptions, and Programming

One of the first and most important issues that should be dealt with in a search for the meaning of giftedness is that there must be a purpose for defining this concept. In view of the practical applications for which a definition might be used, it is necessary to consider any definition in the larger context of overall programming for the target population we are attempting to serve. In other words, the way in which one views giftedness will be a primary factor in both constructing a plan for identification and in providing services that are relevant to the characteristics that brought certain youngsters to our attention in the first place. If, for example, one identifies giftedness as extremely high mathematical aptitude, then it would seem nothing short of common sense to use assessment procedures that readily identify potential for superior performance in this particular domain. And it would be equally reasonable to assume that a program based on this definition and identification procedure should devote major emphasis to the enhancement of performance in mathematics and related areas. Similarly, a definition that emphasizes artistic

abilities should point the way toward relatively specific identification and programming practices. As long as there are differences of opinion among reasonable scholars, there will never be a single definition of giftedness, and this is probably the way that it should be. But one requirement for which all writers of definitions should be accountable is the necessity of showing a logical relationship between definitions on the one hand and recommended identification and programming practices on the other.

Implicit in any efforts to define and identify the potential for gifted behaviors in young people is the assumption that we will "do something" to provide various types of specialized learning experiences that show promise of promoting the development of characteristics implicit in the definition. In other words, the *why* question supersedes the *who* and *how* questions. Although there are two generally accepted purposes for providing special education for young people with high potential, I believe that these two purposes in combination give rise to a third purpose that is intimately related to the definition question.

The first purpose of gifted education is to provide young people with maximum opportunities for self-fulfillment through the development and expression of one or a combination of performance areas in which superior potential may be present. The second purpose is to increase society's supply of persons who will help to solve the problems of contemporary civilization by becoming producers of knowledge and art rather than mere consumers of existing information. Although there may be some arguments for and against both of these purposes, most people would agree that goals related to self-fulfillment and/or societal contributions are generally consistent with democratic philosophies of education. What is even more important is that the two goals are highly interactive and mutually supportive of each other. In other words, the self-satisfying work of scientists, artists, and leaders in all walks of life has the potential to produce results that might be valuable contributions to society. If, as Gowan (1978) has pointed out, the purpose of gifted programs is to increase the size of society's reservoir of potentially creative and productive adults, then the argument for gifted-education programs that focus on creative productivity (rather than lesson-learning giftedness) is a very simple one. If we agree with the goals of gifted education set forth earlier in the chapter, and if we believe that our programs should produce the next generation of leaders, problem solvers, and persons who will make important contributions to the arts and sciences, then does it not make good sense to model special programs and services after the *modus operandi* of these persons rather than after those of the lesson learner? This is especially true because research (as described later in the chapter) tells us that the most efficient lesson learners are not necessarily those persons who go on to make important contributions in

the realm of creative productivity. And in this day and age, when knowledge is expanding at almost geometric proportions, it would seem wise to consider a model that focuses on how our most able students access and make use of information rather than merely on how they accumulate and store it.

Giftedness and Intelligence

A major issue that must be dealt with is that our present efforts to define giftedness are based on a long history of previous studies dealing with human abilities. Most of these studies focused mainly on the concept of intelligence and are briefly discussed here to establish an important point about the process of defining concepts rather than any attempt to equate intelligence with giftedness. Although a detailed review of these studies is beyond the scope of the present chapter, a few of the general conclusions from earlier research are necessary to set the stage for this analysis.[5]

The first conclusion is that intelligence is not a unitary concept but rather, there are many kinds of intelligence and therefore single definitions cannot be used to explain this complicated concept. The confusion and inconclusiveness about present theories of intelligence has led Sternberg (1984), Gardner (1983), and others to develop new models for explaining this complicated concept. After having studied the three aspects of intelligence for some years, Sternberg (1996, 2001) concluded that the answer to the question of intelligence is even more than just *the amount* of a person's analytical, creative, and practical abilities. A person may be gifted with respect to any one of these abilities or with respect to the way she or he *balances the abilities* to succeed (Sternberg & Grigorenko, 2002). "The notion of someone's being 'gifted' or not is a relic of an antiquated, test-based way of thinking" (Sternberg, 1996, p. 197). Intelligence, according to Sternberg and Grigorenko (2002), is not a fixed entity, but a flexible and dynamic one (i.e., it is a form of developing expertise). Developing expertise is "the ongoing process of the acquisition and consolidation of a set of skills needed for a high level of mastery in one or more domains of life performance" (Sternberg & Grigorenko, 2002, p. 267). Thus, someone can be gifted in one domain but not in another. Further, according to Sternberg and colleagues (Sternberg & Lubart, 1995; Sternberg & O'Hara, 1999), intelligence is just one of six forces that generate creative thought and behavior. It is the confluence of intelligence, knowledge, thinking styles, personality, motivation, and the environment that forms gifted behavior as viewed from a creative productive perspective.

5 Persons interested in a succinct examination of problems associated with defining intelligence are advised to review "The Concept of Intelligence" (Neisser, 1979).

Howard Gardner (1983) initially formulated a list of seven domainspecific intelligences and added an eighth one several years later. The first two intelligences—*linguistic* and *logical-mathematical*—are ones that have been typically valued in schools; *musical*, *bodily-kinesthetic*, and spacial are usually associated with the arts; and another two—*interpersonal* and *intrapersonal*—are what Gardner called "personal intelligences." After considering a few additional intelligences, including spiritual, moral, and existential intelligences, Gardner concluded that only the *naturalist* intelligence qualifies as intelligence in his Multiple Intelligences theory (Gardner, 1999). Linguistic intelligence, which involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals, is required of people such as writers, lawyers, and speakers. Scientific and mathematical thinking—required of mathematicians and physicists—on the other hand requires logical-mathematical intelligence, which includes the ability to analyze problems logically (i.e., detect patterns, reason deductively, and think logically). Musical intelligence includes the capacity to recognize and compose musical pitches, tones, and rhythms, skills necessary for performance, composition, and appreciation of musical patterns. Dancers, athletes, and mimes use their whole body or parts of the body to solve problems. Gardner calls the mental ability necessary to coordinate bodily movements bodily-kinesthetic intelligence. Spatial intelligence, the ability to represent and manipulate three-dimensional configurations, is needed by architects, engineers, sculptors, and chess players. The capacity to understand the intentions, motivations, desires, and actions of others and to act sensibly and productively based on that knowledge—interpersonal intelligence—is needed by counselors, teachers, political leaders, and evangelists. A good understanding of one's own cognitive strengths and weaknesses, thinking styles, feelings, and emotions is based on intrapersonal intelligence. Biologists need high levels of naturalist intelligence, which includes extensive knowledge of the living world and its taxonomies, and high capability in recognizing and classifying plants and animals.

In view of this recent work and numerous earlier cautions about the dangers of trying to describe intelligence through the use of single scores, it seems safe to conclude that this practice has been and always will be questionable. At the very least, attributes of intelligent behavior must be considered within the context of cultural and situational factors. Indeed, some of the most extensive examinations have concluded that "[t]he concept of intelligence *cannot* be explicitly defined, not only because of the nature of intelligence but also because of the nature of concepts" (Neisser, 1979, p. 179). Psychologists in the 1990s pointed out the existence of a wide range of contemporary conceptions of intelligence and how it should be measured. Although the psychometric

approach is the oldest and best established, it is limited in its ability to explain intelligence. Multiple forms of intelligence such as Sternberg's and Gardner's theories, theories of developmental progression, and biological approaches have much to contribute to a better understanding of intelligence. Thus, some contemporary psychologists suggest that "we should be open to the possibility that our understanding of intelligence in the future will be rather different from what it is today" (Neisser et al., 1996, p. 80).

A second conclusion is that there is no ideal way to measure intelligence and therefore we must avoid the typical practice of believing that if we know a person's IQ score, we also know his or her intelligence. Even Terman warned against total reliance on tests: "We must guard against defining intelligence solely in terms of ability to pass the tests of a given intelligence scale" (Terman et al., 1926, p. 131). E. L. Thorndike echoed Terman's concern by stating, "To assume that we have measured some general power which resides in [the person being tested] and determines his ability in every variety of intellectual task in its entirety is to fly directly in the face of all that is known about the organization of the intellect" (Thorndike, 1921, p. 126).

Although to date the heritability of cognitive ability in childhood seemed to be well established (McGue, Bouchard, Iacono, & Lykken, 1993; Plomin, 1999; as cited in Turkheimer, Haley, Waldron, D'Onofrio, & Gottesman, 2003), recent research adds a new dimension to the relationship between intelligence and measured IQ. Studies among twins or adoptees and their biological and adoptive parents typically yield large genetic effects and relatively smaller effects of family environments. However, most of these studies include children from middle-class and affluent families. Turkheimer et al. (2003) conducted a study that included a substantial proportion of minority twins raised in families living near or below the poverty level. Their study showed that, in the most impoverished families, the modeled heritability of full-scale IQ was essentially zero, and shared environment accounted for almost 60 percent of the variability; whereas in the most affluent families, virtually all of the modeled variability in IQ was attributable to heritability. In other words, whereas genetic makeup explains most of the differences in IQ for children in adequate environments (middle and high socioeconomic status), *environment*—not genes—makes a bigger difference for minority children in low-income homes. The use of IQ scores as a measure of intelligence, therefore, may be even more questionable for children from impoverished families than they are for the general population. Sternberg cautioned that even if heritability is fairly high for a certain population, it does not mean that intelligence cannot be modified (Miele, 1995).

Two Kinds of Giftedness

The reason I have cited these concerns about the historical difficulty of defining and measuring intelligence is to highlight the even larger problem of isolating a unitary definition of giftedness. At the very least, we will always have several conceptions (and therefore definitions) of giftedness; but it will help in this analysis to begin by examining two broad categories that have been dealt with in the research literature. The distinction between these two categories is the foundation for the theory presented in this chapter and, in many ways, it represents the theme of my overall approach to both the identification and development of gifted behaviors. I refer to the first category as "schoolhouse giftedness" and to the second as "creative productive giftedness." Before going on to describe each type, I want to emphasize that:

1. Both types are important.
2. There is usually an interaction between the two types.
3. Special programs should make appropriate provisions for encouraging both types of giftedness as well as the numerous occasions when the two types interact with each other.

Schoolhouse giftedness. Schoolhouse giftedness might also be called test-taking or lesson-learning giftedness. It is the kind most easily measured by IQ or other cognitive ability tests and, for this reason, it is also the type most often used for selecting students for entrance into special programs. The abilities people display on IQ and aptitude tests are exactly the kinds of abilities most valued in traditional school learning situations. In other words, the games people play on ability tests are similar to games that teachers require in most lesson-learning situations. Research tells us that students who score high on IQ tests are also likely to get high grades in school. Research also has shown that these test-taking and lesson-learning abilities generally remain stable over time. The results of this research should lead us to some very obvious conclusions about schoolhouse giftedness: It exists in varying degrees, it can be identified through standardized assessment techniques, and we should therefore do everything in our power to make appropriate modifications for students who have the ability to cover regular curricular material at advanced rates and levels of understanding. Curriculum compacting (Reis, Burns, & Renzulli, 1992), a procedure used for modifying curricular content to accommodate advanced learners, and other acceleration techniques should represent an essential part of any school program that strives to respect the individual differences that are clearly evident from scores yielded by cognitive ability tests.

Although there is a generally positive correlation between IQ scores and school grades, we should not conclude that test scores are the only factors that contribute to success in school. Because IQ scores correlate only from

0.40 to 0.60 with school grades, they account for only 16 to 36 percent of the variance in these indicators of potential. Many youngsters who are moderately below the traditional 3 to 5 percent test score cut-off levels for entrance into gifted programs clearly have shown that they can do advanced-level work. Indeed, most of the students in the nation's major universities and four-year colleges come from the top 20 percent of the general population (rather than just the top 3 to 5 percent), and Jones (1982) reported that a majority of college graduates in every scientific field of study had IQs between 110 and 120. Are we "making sense" when we exclude such students from access to special services? To deny them this opportunity would be analogous to *forbidding* a youngster from trying out for the basketball team because he or she missed a predetermined "cutoff height" by a few inches! Basketball coaches are not foolish enough to establish *inflexible* cut-off heights because they know that such an arbitrary practice would cause them to overlook the talents of youngsters who may overcome slight limitations in inches with other abilities such as drive, speed, teamwork, ball-handling skills, and perhaps even the ability and motivation to outjump taller persons who are trying out for the team. As educators of gifted and talented youth, we can undoubtedly take a few lessons about flexibility from coaches!

Creative productive giftedness. If scores on IQ tests and other measures of cognitive ability only account for a limited proportion of the common variance with school grades, we can be equally certain that these measures do not tell the whole story when it comes to making predictions about creative productive giftedness. Before defending this assertion with some research findings, let us briefly review what is meant by this second type of giftedness, the important role it should play in programming, and, therefore, the reasons we should attempt to assess it in our identification procedures—even if such assessment causes us to look below the top 3 to 5 percent on the normal curve of IQ scores.

Some phenomena are called by the name "creativity" and are qualitatively different from creative productive giftedness. For purposes of clarification, I will briefly discuss Csikszentmihalyi's (1996) distinction between three phenomena. The first phenomenon refers to unusual and stimulating thoughts. People who express this kind of thinking may be referred to as *brilliant* rather than creative, unless they also contribute something of permanent significance. Second, the term *creativity* is used for people who experience the world in novel and original ways. Their perceptions are fresh and their judgments insightful. Csikszentmihalyi likes to call them *personally creative*. They may make important discoveries that are very important to themselves, but others do not know about those discoveries. Third, people who have changed our

culture in some important respect can, according to Csikszentmihalyi (1996), be called *creative* without qualifications. He further emphasized:

> The difference among these three meanings is not just a matter of degree. The last kind of creativity is not simply a more developed form of the two. These are actually different ways of being creative, each to a large measure unrelated to the others. (pp. 25–26)

The development of creative productive giftedness aims to increase the chances that more students will become creative in the third way described, that is, their ideas and work will actually have an impact on others and cause change. This product-oriented view is in line with most current Western definitions of creativity. The most often mentioned features of the end product are novelty and appropriateness. Programming that addresses this kind of creativity must be qualitatively different from regular schooling. It should primarily focus on students who fall into the following two categories of talent, proposed by Tannenbaum (Sternberg & Davidson, 1986): scarcity and surplus talents. For purposes of preservation and advancement, the world needs inventive people like Jonas Salk, Martin Luther King, Jr., Marie Curie, and Sigmund Freud. Such *scarcity* talents are forever in short supply. Society also seeks beauty, which can be provided by people who possess what Tannenbaum called *surplus* talent. These people (e.g., Picasso, Mozart, and C. S. Lewis) have the rare ability to elevate people's sensibility and sensitivities to new heights through the production of great art, literature, music, and philosophy.

Psychologists who studied motivated behavior (e.g., Deci & Ryan, 1985) found that people have a desire for self-determination and competence. The need for self-determination or a sense of autonomy is satisfied when one is free to behave of one's own volition, rather than being forced to behave according to the desires of another. One also strives to feel proficient and capable of performing the task in which they choose to engage. These needs for self-determination and competence motivate people to seek and conquer optimal challenges that stretch their abilities when trying something *new* (Deci & Ryan, 1985; Deci, Vallerand, Pelletier, & Ryan, 1991). The challenge of a situation depends on the degree of match between a person's internal structures and the demands of the environment. Creative productive giftedness, therefore, describes those aspects of human activity and involvement in which a premium is placed on the development of original thought, solutions, material, and products that are purposefully designed to have an impact on one or more target audiences. Learning situations that are designed to promote creative productive giftedness emphasize the use and application of information (content) and thinking processes in an integrated, inductive, and

real-problem-oriented manner, which allows students to be self-determined first hand inquirers. Creative productive giftedness also implies acting on what one knows and believes rather than merely acquiring and storing knowledge for its own sake.

The role of the student is transformed from that of a learner of prescribed lessons to one in which she or he uses the *modus operandi* of a firsthand inquirer. This approach is quite different from the development of lesson-learning giftedness, which tends to emphasize deductive learning, structured training in the development of thinking processes, and the acquisition, storage, and retrieval of information. In other words, creative productive giftedness is simply putting one's abilities to work on problems and areas of study that have personal relevance to oneself and that can be escalated to appropriately challenging levels of investigative activity. The roles that both students and teachers should play in the pursuit of these problems have been described elsewhere (Renzulli, 1982, 1983).

Why is creative productive giftedness important enough for us to question the "tidy" and relatively easy approach that traditionally has been used to select students on the basis of test scores? Why do some people want to rock the boat by challenging a conception of giftedness that can be numerically defined by simply giving a test? The answers to these questions are simple and yet very compelling. The research reviewed in the second section of this chapter tells us that there is much more to the development of gifted behaviors than the abilities revealed on traditional tests of intelligence, aptitude, and achievement. Furthermore, history tells us it has been the creative and productive people of the world, the producers rather than consumers of knowledge, the reconstructionists of thought in all areas of human endeavor, who have become recognized as "truly gifted" individuals. History does not remember persons who merely scored well on IQ tests or those who learned their lessons well but did not apply their knowledge in innovative and action-oriented ways.

It is important to mention once again that high levels of traditional achievement are necessary for all students. The breadth and depth of one's declarative knowledge base improves the foundation on which creative productive behaviors can be based and, coupled with advanced training in procedural knowledge (thinking skills, research methods, various forms of expression), combined to form the necessary ingredients for the type of giftedness described here.

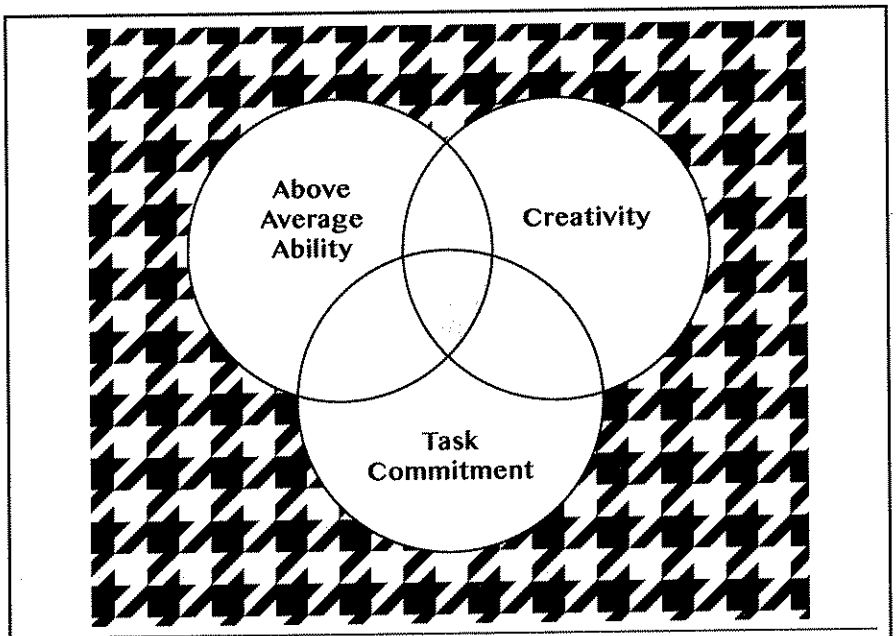

Figure 3.1 *Graphic representation of the Three-Ring Definition of Giftedness.*

The Three-Ring Conception of Giftedness

The Three-Ring Conception of Giftedness is a theory that attempts to portray the main dimensions of human potential for creative productivity. The name derives from the conceptual framework of the theory—namely, three interacting clusters of traits (above average ability, task commitment, and creativity) and their relationship with general and specific areas of human performance (see Figure 3.1). The three rings are embedded in a Houndstooth background that represents the interaction between personality and environmental factors that give rise to the three rings.

Research Underlying the Three-Ring Conception of Giftedness

One way of analyzing the research underlying conceptions of giftedness is to review existing definitions along a continuum ranging from *conservative* to *liberal.* Conservative and liberal are used here not in their political connotations, but rather according to the degree of restrictiveness that is used in determining who is eligible for special programs and services.

Restrictiveness can be expressed in two ways. First, a definition can limit the number of specific performance areas that are considered in determining

eligibility for special programs. A conservative definition, for example, might limit eligibility to academic performance only and exclude other areas such as music, art, drama, leadership, public speaking, social service, and creative writing. Second, a definition can limit the degree or level of excellence that one must attain by establishing extremely high cut-off points. At the conservative end of the continuum is Terman's (1926) definition of giftedness as "the top 1 percent level in general intellectual ability as measured by the Stanford-Binet Intelligence Scale or a comparable instrument" (p. 43). In this definition, restrictiveness is present in terms of both the type of performance specified (i.e., how well one scores on an intelligence test) and the level of performance one must attain to be considered gifted (top 1 percent). At the other end of the continuum can be found more liberal definitions, such as the following one by Witty (1958):

> There are children whose outstanding potentialities in art, in writing, or in social leadership can be recognized largely by their performance. Hence, we have recommended that the definition of giftedness be expanded and that we consider any child gifted whose performance, in a potentially valuable line of human activity, is consistently remarkable. (p. 62)

Although liberal definitions have the obvious advantage of expanding the conception of giftedness, they also open up two "cans of worms" by introducing a values issue (what are the potentially valuable lines of human activity?) and the age-old problem of subjectivity in measurement. In recent years, the values issue has been largely resolved. There are very few educators who cling tenaciously to a "straight IQ" or purely academic definition of giftedness. "Multiple talent" and "multiple criteria" are almost the bywords of the present-day gifted student movement, and most persons would have little difficulty in accepting a definition that includes almost every area of human activity that manifests itself in a socially useful form of expression.

The problem of subjectivity in measurement is not as easily resolved. As the definition of giftedness is extended beyond those abilities that are clearly reflected in tests of intelligence, achievement, and academic aptitude, it becomes necessary to put less emphasis on precise estimates of performance and potential and more emphasis on the opinions of qualified human judges in making decisions about admission to special programs. The crux of the issue boils down to a simple and yet very important question: How much of a trade-off are we willing to make on the objective-subjective continuum to allow recognition of a broader spectrum of human abilities? If some degree of subjectivity cannot be tolerated, then our definition of giftedness and the

resulting programs will logically be limited to abilities that can be measured only by objective tests.

Research on creative productive people has consistently shown that, although no single criterion can be used to determine giftedness, persons who have achieved recognition because of their unique accomplishments and creative contributions possess a relatively well-defined set of three interlocking clusters of traits. These clusters consist of (a) above average, although not necessarily superior ability, (b) creativity, and (c) task commitment. It is important to point out that no single cluster "makes giftedness" (in the sense of "gifted behavior" or creative productivity). Rather, it is the *interaction* among the three clusters that research has shown to be the necessary ingredient for creative productive accomplishment (Renzulli, 1978). The shaded portion of Figure 3.1 represents this interaction. It is also important to point out that each cluster plays an important role in contributing to the development of gifted behaviors. This point is emphasized because one of the major errors that continues to be made in identification procedures is to overemphasize superior abilities at the expense of the other two clusters of traits.

Amabile's (1983, 1996) Componential Theory of Creativity comprises three components that are very similar to the three clusters I proposed in the original article on the Three-Ring Conception (Renzulli, 1978). Her essential three components for creative performance are: (a) domain-relevant skills (knowledge, talents, and technical skills in the domain), (b) creativity-relevant skills (cognitive styles, working styles, and creativity heuristics), and (c) task motivation (motivational variables that determine an individual's approach to a given task). Amabile (1996) emphasized that each of the model's three components—domain-relevant skills, creativity-relevant skills, and task motivation—is necessary, and none is sufficient for creativity in and of itself. She also proposed that the level of creativity of a product or response varies as a function of the levels of each of the three components.

Well-Above-Average Ability

Well-above-average ability can be defined in two ways. *General ability* consists of traits that can be applied across all domains (e.g., general intelligence) or broad domains (e.g., general verbal ability applied to several dimensions of the language arts). These abilities consist of the capacity to process information, to integrate experiences that result in appropriate and adaptive responses to new situations, and the capacity to engage in abstract thinking. Examples of general ability are verbal and numerical reasoning, spatial relations, memory, and word fluency. These abilities are usually measured by tests

of general aptitude or intelligence and are broadly applicable to a variety of traditional learning situations.

Specific abilities consist of the capacity to acquire knowledge, skill, or the ability to perform in one or more activities of a specialized kind and within a restricted range. These abilities are defined in a manner that represents the ways in which human beings express themselves in real-life (i.e., nontest) situations. Examples of specific abilities are chemistry, ballet, mathematics, musical composition, sculpture, and photography. Each specific ability can be further subdivided into even more specific areas (e.g., portrait photography, astrophotography, photojournalism). Specific abilities in certain areas such as mathematics and chemistry have a strong relationship with general ability and, therefore, some indication of potential in these areas can be determined from tests of general aptitude and intelligence. They can also be measured by achievement tests and tests of specific aptitude. Many specific abilities, however, cannot be easily measured by tests, and, therefore, areas such as the fine and applied arts, athletics, leadership, planning, and human relations skills must be evaluated through observation by skilled observers or other performance-based assessment techniques.

Within this model, the term *above average ability* is used to describe both general and specific abilities. *Above average* should also be interpreted to mean the upper range of potential within any given area. Although it is difficult to assign numerical values to many specific areas of ability, when I refer to "well above average ability," I clearly have in mind persons who are capable of performance or *possess the potential* for performance that is representative of the top 15 to 20 percent of any given area of human endeavor. One of the criticisms of this work has been that one must "perform" or produce a product to be "gifted." This is clearly not the intention, and I have responded to these criticisms in detail elsewhere (Renzulli, 1999). I also want to emphasize once again that when I refer to above average abilities that I am not restricting my use of percentages to only those things that can be measured by tests.

Although the influence of intelligence, as traditionally measured, quite obviously varies with specific areas of performance, many researchers have found that creative accomplishment is not necessarily a function of measured intelligence. In a review of several research studies dealing with the relationship between academic aptitude tests and professional achievement, Wallach (1976) has concluded that "above intermediate score levels, academic skills assessments are found to show so little criterion validity as to be a questionable basis on which to make consequential decisions about students' futures. What the academic tests do predict are the results a person will obtain on other tests of the same kind" (p. 57). Wallach goes on to point out that academic test scores at the upper ranges—precisely the score levels that are most often used

for selecting persons for entrance into special programs—do not necessarily reflect the potential for creative productive accomplishment. He suggests that test scores be used to screen out persons who score in the lower ranges and that, beyond this point, decisions should be based on other indicators of potential for superior performance.

Numerous research studies support Wallach's findings that there is a limited relationship between test scores and school grades on the one hand and real-world accomplishments on the other (Bloom, 1963; Harmon, 1963; Helson & Crutchfield, 1970; Hudson, 1960; Mednick, 1963; Parloff, Datta, Kleman, & Handlon, 1968; Richards, Holland, & Lutz, 1967; Wallach & Wing, 1969). In fact, in a study dealing with the prediction of various dimensions of achievement among college students, Holland and Astin (1962) found that "getting good grades in college has little connection with more remote and more socially relevant kinds of achievement; indeed, in some colleges, the higher the student's grades, the less likely it is that he is a person with creative potential. So it seems desirable to extend our criteria of talented performance" (pp. 132–133). A study by the American College Testing Program (Munday & Davis, 1974) titled "Varieties of Accomplishment After College: Perspectives on the Meaning of Academic Talent," concluded that

> the adult accomplishments were found to be uncorrelated with academic talent, including test scores, high school grades, and college grades. However, the adult accomplishments were related to comparable high school nonacademic (extracurricular) accomplishments. This suggests that there are many kinds of talents related to later success which might be identified and nurtured by educational institutions. (p. 2)

Sternberg (1997) reported that tested differences in ability account for approximately "10% of the variation among workers in job performance" (p. 9). However, based on correlations between intelligence tests and various measures of job performance, Neisser et al. (1996) concluded that "across a wide range of occupations, intelligence test performance accounts for some 29% of the variance in job performance" (p. 83), which leaves 71 percent of variation in job performance unexplained. The pervasiveness of this general finding was demonstrated as early as 1965 by Hoyt (1965), who reviewed 46 studies dealing with the relationship between traditional indications of academic success and postcollege performance in the fields of business, teaching, engineering, medicine, scientific research, and other areas such as the ministry, journalism, government, and miscellaneous professions. From this extensive review, Hoyt concluded that traditional indications of academic success have no more than

a very modest correlation with various indicators of success in the adult world and that "there is good reason to believe that academic achievement (knowledge) and other types of educational growth and development are relatively independent of each other" (p. 73).

The experimental studies conducted by Sternberg (1981) and Sternberg and Davidson (1982) have added a new dimension to our understanding about the role that intelligence tests should play in making identification decisions. After numerous investigations into the relationship between traditionally measured intelligence and other factors, such as problem solving and insightful solutions to complex problems, Sternberg (1982) concluded that

> tests only work for some of the people some of the time—not for all of the people all of the time—and that some of the assumptions we make in our use of tests are, at best, correct only for a segment of the tested population, and at worst, correct for none of it. As a result we fail to identify many gifted individuals for whom the assumptions underlying our use of tests are particularly inadequate. The problem, then, is not only that tests are of limited validity for everyone but that their validity varies across individuals. For some people, tests scores may be quite informative, for others such scores may be worse than useless. Use of test score cutoffs and formulas results in a serious problem of underidentification of gifted children. (p. 157)

These studies raise some basic questions about the use of tests as a major criterion for making selection decisions. The research reported above clearly indicates that vast numbers *and* proportions of our most productive persons are *not* those who scored at the 95th percentile or above on standardized tests of intelligence, nor were they necessarily straight-A students who discovered early how to play the lesson-learning game. In other words, more creative productive persons came from below the 95th percentile than above it, and if such cut-off scores are needed to determine entrance into special programs, we may be guilty of actually discriminating against persons who have the greatest potential for high levels of accomplishment.

The most defensible conclusion about the use of intelligence tests that can be put forward at this time is based on research findings dealing with the "threshold effect." Reviews by Chambers (1969) and Stein (1968) and research by Walberg (1969, 1971) indicate that accomplishments in various fields require minimal levels of intelligence, but that beyond these levels, degrees of attainment are weakly associated with intelligence. In studies of creativity, it is generally acknowledged that a fairly high although not exceptional level

of intelligence is necessary for high degrees of creative achievement (Barron, 1969; Campbell, 1960; Guilford, 1964, 1967; McNemar, 1964; Vernon, 1967).

Research on the threshold effect indicates that different fields and subject-matter areas require varying degrees of intelligence for high-level accomplishment. In mathematics and physics, the correlation of measured intelligence with originality in problem solving tends to be positive but quite low. Correlations between intelligence and the rated quality of work by painters, sculptors, and designers is zero or slightly negative (Barron, 1968). Although it is difficult to determine exactly how much measured intelligence is necessary for high levels of creative and productive accomplishment within any given field, there is a consensus among many researchers (Barron, 1969; Bloom, 1963; Cox, 1926; Harmon, 1963; Helson & Crutchfield, 1970; MacKinnon, 1964, 1965; Oden, 1968; Roe, 1952; Terman, 1954) that once the IQ is 120 or higher, other variables become increasingly important. These variables are discussed in the following sections.

Task Commitment

A second cluster of traits that consistently has been found in creative productive persons is a refined or focused form of motivation that I have called task commitment. Whereas motivation is usually defined in terms of a general energizing process that triggers responses in organisms, task commitment represents energy brought to bear on a particular problem (task) or specific performance area. The terms that are most frequently used to describe task commitment are perseverance, endurance, hard work, dedicated practice, self-confidence, a belief in one's ability to carry out important work, and action applied to one's area(s) of interest. In addition to perceptiveness (Albert, 1975) and a better sense for identifying significant problems (Zuckerman, 1979), research on persons of unusual accomplishment has consistently shown that a special fascination for and involvement with the subject matter of one's chosen field "are the almost invariable precursors of original and distinctive work" (Barron, 1969, p. 3). This motivation to engage in an activity primarily for its own sake is often called intrinsic motivation. When one feels both self-determined and competent in pursuing a certain task, intrinsic motivation arises and leads to action. According to Deci and Ryan (1985), intrinsic motivation is innate to the human organism and is ever present as a motivator. It is a "natural ongoing state of the organism unless it is interrupted" (Deci & Ryan, 1985, p. 234) because intrinsically motivated behaviors satisfy a person's need to feel both competent and autonomous. Extrinsic motivation, often caused by factors such as money or rewards, on the other hand, can undermine one's sense of autonomy if they are perceived as externally controlling

(Amabile, Hill, Hennessey, & Tighe, 1994). The identification of these two types of motivation—intrinsic and extrinsic motivation—was, according to Collins and Amabile (1999), a breakthrough in research on the forces driving creativity. It seems, however, that any extrinsic factors that support one's sense of competence or enable one's deeper involvement with the task itself (without undermining one's sense of self-determination) may have a reinforcing effect on intrinsic motivation. This positive combination of seemingly opposite types of motivation can be called "extrinsics in service of intrinsics" (Collins & Amabile, 1999). More research on motivation and especially on the synergistic effect of extrinsic motivators on intrinsic motivation is necessary. A person's high commitment toward a task seems to be the result of this synergistic effect.

Even in young people whom Bloom and Sosniak (1981) identified as extreme cases of talent development, early evidence of task commitment was present. Bloom and Sosniak report that "after age 12 our talented individuals spent as much time on their talent field each week as their average peer spent watching television" (p. 94). The argument for including this nonintellective cluster of traits in a definition of giftedness is nothing short of overwhelming. From popular maxims and autobiographical accounts to hard-core research findings, one of the key ingredients that has characterized the work of gifted contributors is their ability to involve themselves totally in a specific problem or area for an extended period of time.

The legacy of both Sir Francis Galton and Lewis Terman clearly indicates that task commitment is an important part of the making of a gifted person. Although Galton was a strong proponent of the hereditary basis for what he called "natural ability," he nevertheless subscribed heavily to the belief that hard work was part and parcel of giftedness:

> By natural ability, I mean those qualities of intellect and disposition, which urge and qualify a man to perform acts that lead to reputation. I do not mean capacity without zeal, nor zeal without capacity, nor even a combination of both of them, without an adequate power of doing a great deal of very laborious work. But I mean a nature which, when left to itself, will, urged by an inherent stimulus, climb the path that leads to eminence and has strength to reach the summit—on which, if hindered or thwarted, will fret and strive until the hindrance is overcome, and it is again free to follow its laboring instinct (Galton, 1869, p. 33, as cited in Albert, 1975, p. 142).

The monumental studies of Lewis Terman undoubtedly represent the most widely recognized and frequently quoted research on the characteristics of gifted persons. Terman's studies, however, have unintentionally left a mixed

legacy because most persons have dwelt (and continue to dwell) on "early Terman" rather than the conclusions he reached *after* several decades of intensive research. As such, it is important to consider the following conclusion that he reached as a result of 30 years of follow-up studies on his initial population:

> A detailed analysis was made of the 150 most successful and 150 least successful men among the gifted subjects in an attempt to identify some of the nonintellectual factors that affect life success. . . . Since the less successful subjects do not differ to any extent in intelligence as measured by tests, it is clear that notable achievement calls for more than a high order of intelligence. The results [of the follow-up] indicated that personality factors are extremely important determiners of achievement . . . The four traits on which [the most and least successful groups] differed most widely were *persistence in the accomplishment of ends, integration toward goals, self-confidence, and freedom from inferiority feelings.* In the total picture the greatest contrast between the two groups was in all-round emotional and social adjustment, and in *drive to achieve.* (Terman & Oden, 1959, p. 148; italics added)

Although Terman never suggested that task commitment should replace intelligence in our conception of giftedness, he did state that "intellect and achievement are far from perfectly correlated" (p. 146). Several more recent research studies support the findings of Galton and Terman and have shown that creative productive persons are far more task-oriented and involved in their work than are people in the general population. Perhaps the best known of these studies is the work of Roe (1952) and MacKinnon (1964, 1965). Roe conducted an intensive study of the characteristics of 64 eminent scientists and found that all of her subjects had a high level of commitment to their work. MacKinnon pointed out traits that were important in creative accomplishments: "It is clear that creative architects more often stress their inventiveness, independence and individuality, their *enthusiasm, determination,* and *industry*" (1964, p. 365; italics added).

Extensive reviews of research carried out by Nicholls (1972) and McCurdy (1960) found patterns of characteristics that were consistently similar to the findings reported by Roe and MacKinnon. Although the studies cited thus far used different research procedures and dealt with a variety of populations, there is a striking similarity in their major conclusions. First, academic ability (as traditionally measured by tests or grade-point averages) showed limited relationships to creative productive accomplishment. Second, nonintellectual factors, and especially those related to task commitment, consistently played an important part in the cluster of traits that characterized highly productive

people. Although this second cluster of traits is not as easily and objectively identifiable as are general cognitive abilities, they are nevertheless a major component of giftedness and should, therefore, be reflected in our definition.

Creativity

The third cluster of traits that characterizes gifted persons consists of factors usually lumped together under the general heading of "creativity." As one reviews the literature in this area, it becomes readily apparent that the words *gifted, genius,* and *eminent creators* or *highly creative persons* are used synonymously. In many of the research projects discussed previously, the persons ultimately selected for intensive study were, in fact, recognized *because* of their creative accomplishments. In MacKinnon's (1964) study, for example, panels of qualified judges (professors of architecture and editors of major American architectural journals) were asked first to nominate and later to rate an initial pool of nominees, using the following dimensions of creativity:

1. Originality of thinking and freshness of approaches to architectural problems.
2. Constructive ingenuity.
3. Ability to set aside established conventions and procedures when appropriate.
4. A flair for devising effective and original fulfillments of the major demands of architecture, namely, technology (firmness), visual form (delight), planning (commodity), and human awareness and social purpose. (p. 360)

When discussing creativity, it is important to consider the problems researchers have encountered in establishing relationships between creativity tests and other more substantial accomplishments. A major issue that has been raised by several investigators deals with whether or not tests of divergent thinking actually measure "true" creativity. Although some validation studies have reported limited relationships between measures of divergent thinking and creative performance criteria (Dellas & Gaier, 1970; Guilford, 1967; Shapiro, 1968; Torrance, 1969), the research evidence for the predictive validity of such tests has been limited. Unfortunately, very few tests have been validated against real-life criteria of creative accomplishment; however, future longitudinal studies using these relatively new instruments might show promise of establishing higher levels of predictive validity. Thus, although divergent thinking is indeed a characteristic of highly creative persons, caution should be exercised in the use and interpretation of tests designed to measure this capacity.

Given the inherent limitations of creativity tests, a number of writers have focused attention on alternative methods for assessing creativity. Among others, Nicholls (1972) suggested that an analysis of creative products is preferable to the trait-based approach in making predictions about creative potential (p. 721), and Wallach (1976) proposes that student self reports about creative accomplishment are sufficiently accurate to provide a usable source of data.

Although few persons would argue against the importance of including creativity in a definition of giftedness, the conclusions and recommendations discussed previously raise the haunting issue of subjectivity in measurement. In view of what the research suggests about the questionable value of more objective measures of divergent thinking, perhaps the time has come for persons in all areas of endeavor to develop more careful procedures for evaluating the products of candidates for special programs.

A Definition of Gifted Behavior

Although no single statement can effectively integrate the many ramifications of the research studies I have described, the following definition of gifted behavior attempts to summarize the major conclusions and generalizations resulting from this review of research.

Gifted behavior consists of thought and action resulting from an interaction among three basic clusters of human traits, above average general and/or specific abilities, high levels of task commitment, and high levels of creativity. Children who manifest *or are capable of developing* an interaction among the three clusters require a wide variety of educational opportunities, resources, and encouragement above and beyond those ordinarily provided through regular instructional programs.

Research on the Three-Ring Conception of Giftedness

The definition of gifted behavior reported previously has served as the basis for a large number of research studies designed to examine the effectiveness of identification practices based on the Three-Ring Conception and programmatic interventions that focus on promoting creative productive giftedness. Using a population of 1,162 students in grades one through six in 11 school districts, Reis and Renzulli (1982) examined several variables related to an identification process based on the Three-Ring Conception and the

Enrichment Triad programming model. Talent Pools consisting of above average ability students in each district and at each grade level were divided into two groups. Group A consisted of students who scored in the top 5 percent on standardized tests of intelligence and achievement. Group B consisted of students who scored from 10 to 15 percentile points below the top 5 percent. Both groups participated equally in all program activities.

An instrument called the Student Product Assessment Form (SPAF) was used to compare the quality of products from each group. This instrument provides individual ratings for eight specific qualitative characteristics of products and seven factors related to overall product quality. The validity and reliability of the SPAF were established through a year-long series of studies (Reis, 1981) that yielded reliability coefficients as high as 0.98. A double-blind method of product coding was used so that the expert judges did not know group membership (i.e., A or B) when evaluating individual products. A two-way analysis of variance indicated that there were no significant differences between Group A and Group B with respect to the quality of students' products. These findings are offered as a verification of the Three-Ring Conception of Giftedness and as support for the effectiveness of the model in serving a group somewhat larger than the traditional top 5 percent. Questionnaires and interviews were used to examine several other factors related to overall program effectiveness. Data obtained from classroom and special program teachers, parents, and Talent Pool students indicated that attitudes toward this identification system were highly positive. Many classroom teachers reported that their high level of involvement in the program had favorably influenced their teaching practices and promoted more favorable attitudes toward special programs. Parents whose children had been placed previously in traditional programs for the gifted did not differ in their opinions from parents whose children had been identified as gifted under the expanded criteria. Resource teachers—many of whom had previously been involved in traditional programs for the gifted—overwhelmingly preferred the expanded identification procedure to the traditional reliance on test scores alone. In fact, several resource teachers said they would resign or request transfers to regular classrooms if their school systems did not continue to use this more flexible approach!

Additional research examined academic self-concept, locus of control, correlates of creative productivity, and administrators' attitudes toward programs based on the Three-Ring Conception of Giftedness. A summary of these and other studies about this combined identification and programming approach can be found in Renzulli and Reis (1994), and updates are included on our web site (www.gifted.uconn.edu).

New Dimensions to the Three-Ring Conception of Giftedness

In the early 1970s, when I began work on a conception of giftedness that challenged the traditional view of this concept, I embedded the rings in a Houndstooth background that represented the interaction between personality and environment. In recent years, further research and theory development has led to a new dimension of the model that calls attention to a series of six co-cognitive factors. A comprehensive review of the literature and a series of Delphi technique studies led to the development of an organizational plan for studying the 6 components and 13 subcomponents presented in Figure 3.2. I refer to these traits as co-cognitive factors be cause they interact with and enhance the cognitive traits that we ordinarily associate with the development of human abilities. Moon (2000) suggests that constructs of this type, including social, emotional, interpersonal, and intrapersonal intelligence, are related to each other and are independent from traditional measures of ability. The two-directional arrows in this diagram are intended to point out the many interactions that take place between and among the Houndstooth components.

This new initiative was prompted by a longstanding concern about the role that gifted education should play in preparing persons with high potential for ethical and responsible leadership in all walks of life and a concern for the well-documented decline of social capital in modem societies (Putnam, 1993, 1995; Portes, 1998). Social capital differs from economic and intellectual capital in that it focuses on a set of intangible assets that address the collective needs and problems of other individuals and our communities at large. Although social capital cannot be defined as precisely as corporate earnings or gross domestic product, Labonte (1999) eloquently defined it as: "something going on 'out there' in peoples' day-to-day relationships that is an important determinant to the quality of their lives, if not society's healthy functioning" (p. 430). This kind of capital generally enhances community life and the network of obligations we have to one another. Investments in social capital benefit society as a whole because they help to create the values, norms, networks, and social trust that facilitate coordination and cooperation geared toward the greater public good. Striking evidence indicates a marked decline in American social capital over the latter half of the last century. National surveys show declines over the last few decades in voter turnout and political participation and membership in service clubs, church-related groups, parent-teacher associations, unions, and fraternal groups. These declines in civic and social participation have been paralleled by an increasing tendency for young people to focus on materialism, self-indulgence, narrow professional success, and indi-

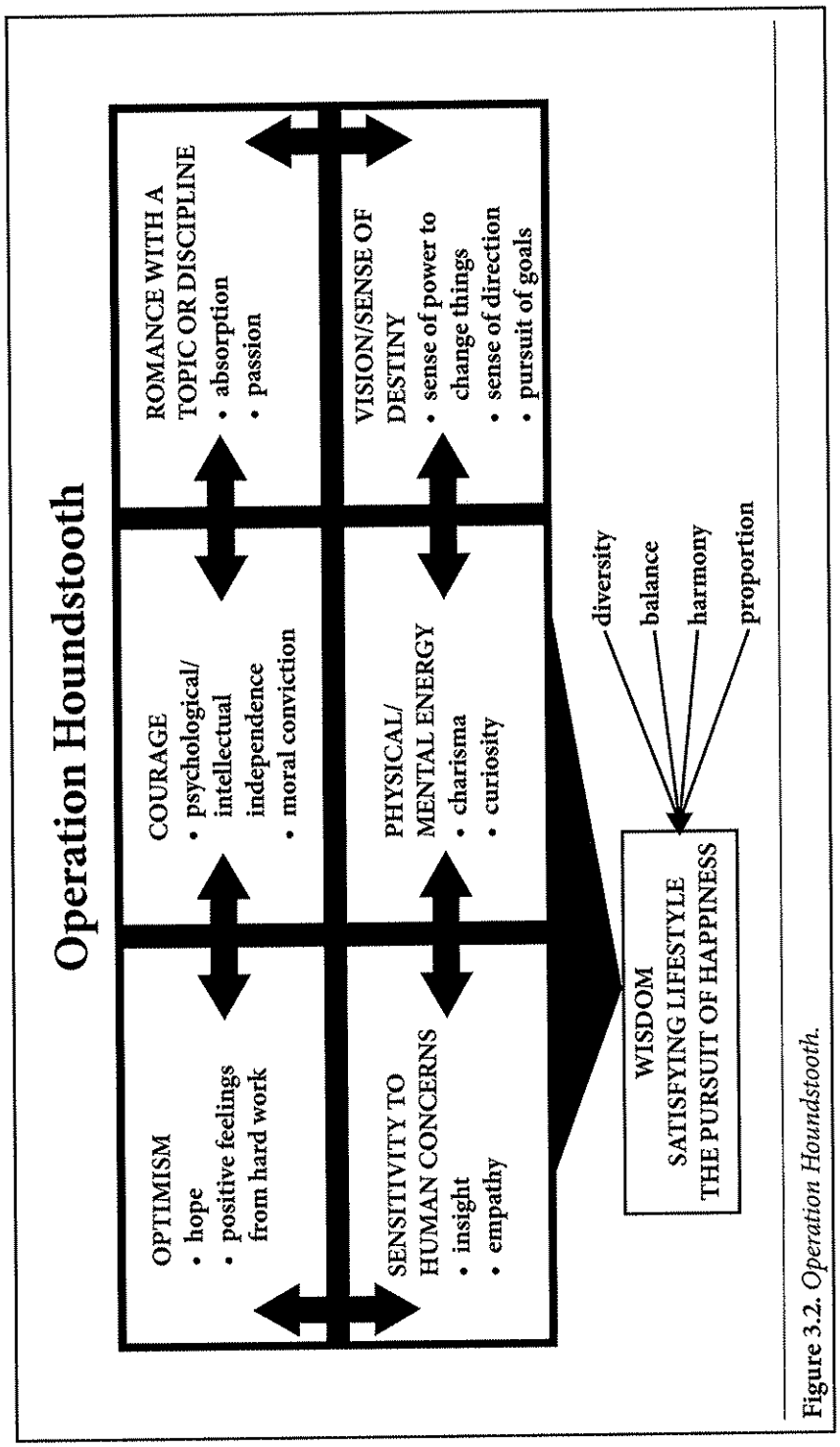

Figure 3.2. *Operation Houndstooth.*

vidual economic gain (Ahuvia, 2002; Huer, 1991; Kasser, 2002; Myers, 1993; Netemeyer, Burton, & Lichtenstein, 1995; Shrader, 1992; Tatzel, 2002).

Researchers who have studied social capital have examined it mainly in terms of its impact on communities at large, but they also point out that it is created largely by the actions of individuals. They also have reported that leadership is a necessary condition for the creation of social capital. Although numerous studies and a great deal of commentary about leadership have been discussed in the gifted education literature, no one has yet examined the relationship between the characteristics of gifted leaders and their motivation to use their gifts to advance the greater public good. A scientific examination of a more focused set of background components is necessary for us to understand the sources of gifted behaviors and, more importantly, the ways in which people transform their gifted assets into constructive action. What causes people like Martin Luther King Jr., Mother Teresa, Nelson Mandela, and Rachel Carson to devote their time and energy to socially responsible endeavors that improve the lives of so many people? And can a better understanding of people who use their gifts in socially constructive ways help us create conditions that expand the number of young people who may make commitments to the growth of social as well as economic capital? Can our gifted education programs produce future corporate leaders who are as sensitive to aesthetic and environmental concerns as they are to the corporate bottom line? Can we influence the ethics and morality of future industrial and political leaders so that they place gross national happiness on an equal or higher scale of values than gross national product? These are some of the questions we are attempting to address in an ongoing series of research studies that examine the relationship between noncognitive personal characteristics and the role that these characteristics play in the development of giftedness.

A detailed discussion of the Houndstooth factors, the research that led to their development, and an intervention theory that promotes them is beyond the scope of this chapter; however, a description of the rationale for including them in an expanded conception of giftedness and the research that led to the identification of the factors can be found in a recent article devoted entirely to this topic (Renzulli, 2002). We are only in the early stages of examining these admittedly imprecise factors and developing strategies for promoting them, but I believe that if the gifted education community is sincere about its frequent claims of producing the next generation of leaders, our conception of giftedness and the services we provide should place some emphasis on leaders who are committed to making the world a better place. As Nelson Mandela said, "A good head and a good heart are always a formidable combination."

A Practical Plan for Identification

Translating theory into practice is always a challenging task! Although my work on a conception of giftedness has dealt with theory development, equal attention has been given to how the theory can guide practical strategies for the identification of all students who can benefit from special services. And therein lies one of the greatest challenges because a more flexible approach to identification often is at odds with traditional state or local regulations that require precision, names on lists signifying who is "gifted," and resource allocations that make sharp distinctions between the work of special program personnel and other teachers who may be able to contribute to a school's total talent development mission. These practical realities have led to an identification plan that is a compromise between a totally performance-based system and one that targets certain students while still maintaining a degree of flexibility. An overview of the plan follows, and a more detailed description titled *A Practical Plan for Identifying Gifted and Talented Students* can be found in Renzulli (1990) and on our Web site (http://www.gifted.uconn.edu).

The essence of this plan is to form a Talent Pool of students who are targeted because of strengths in particular areas that will serve as a primary (but not total) rationale for the services that the special program will provide. Before listing the steps involved in this identification system, three important considerations are discussed. First, Talent Pool size will vary in any given school depending on the general nature of the total student body. In schools with unusually large numbers of high achieving students, it is conceivable that Talent Pools will be larger than in lower-scoring schools. But even in schools where achievement levels are below national norms, there still exists an upper-level group of students who need services above and beyond those that are provided for the majority of the school population. Some of our most successful programs have been in inner-city schools that serve disadvantaged and bilingual youth; and even though these schools were below national norms, Talent Pools of approximately 15 percent of students needing supplementary services were still identified. Talent Pool size is also a function of the availability of resources (both human and material) and the extent to which the general faculty is willing to (a) make modifications in the regular curriculum for above-average-ability students, (b) participate in various kinds of enrichment and mentoring activities, and (c) work cooperatively with any and all personnel who may have special program assignments. It is very important to determine beforehand the number of students who can be served in ways that "show up" when program accountability is considered.

Because teacher nomination plays an important role in this identification system, a second consideration is the extent of orientation and training that teachers have had about both the program and procedures for nominating

students. In this regard, we recommend the use of a training activity that is designed to orient teachers to the behavioral characteristics of superior students (Renzulli et al., 2002, pp. 24–28).

A third consideration is, of course, the type of program for which students are being identified. The identification system is based on models that combine both enrichment and acceleration, whether or not they are carried out in self-contained programs, inclusion programs, pull-out programs, or any other organizational arrangement. Regardless of the type of organizational model used, it is also recommended that a strong component of curriculum compacting (Reis et al., 1992) be a part of the services offered to high-achieving Talent Pool students.

Once a target number or percent of the school population is established, that number should be divided in half. In the 15 percent Talent Pool depicted in Figure 3.3, approximately half the students will be selected on the basis of test scores, thus guaranteeing that the process will not discriminate against traditionally high-scoring students. Step 2 uses a research-based teacher nomination scale (Renzulli et al., 2002) for students not included in Step 1. Again, the previously mentioned training helps to improve the reliability of ratings. With the exception of teachers who are habitually under- or overnominators, these ratings are treated on a par value with test scores. Our experience has shown that the vast majority of Talent Pool nominees result from Steps 1 and 2.

Step 3 allows for the use of other criteria (e.g., parent, peer, or self-nomination; previous product assessment) that a school may or may not want to consider but, in this case, the information is reviewed in a casestudy fashion by a selection committee. Step 4 allows previous-year teachers to recommend students who were not nominated in the first three steps. This "safety valve" guards against bias or incompatibility on the part of the nominator in Step 2, and it allows for consideration of student potential that may be presently unrecognized because of personal or family issues or a turn-off to school. Step 5 provides parents with information about why their son or daughter was nominated for the Talent Pool, the goals and nature of the program as it relates to their child's strength areas, and how a program based on the Three-Ring Conception of Giftedness differs from other types of programs. Step 6 is a second safety valve. Action information nomination allows for consideration of targeted services for a young person who may show a remarkable display of creativity, task commitment, or a previously unrecognized need for highly challenging opportunities.

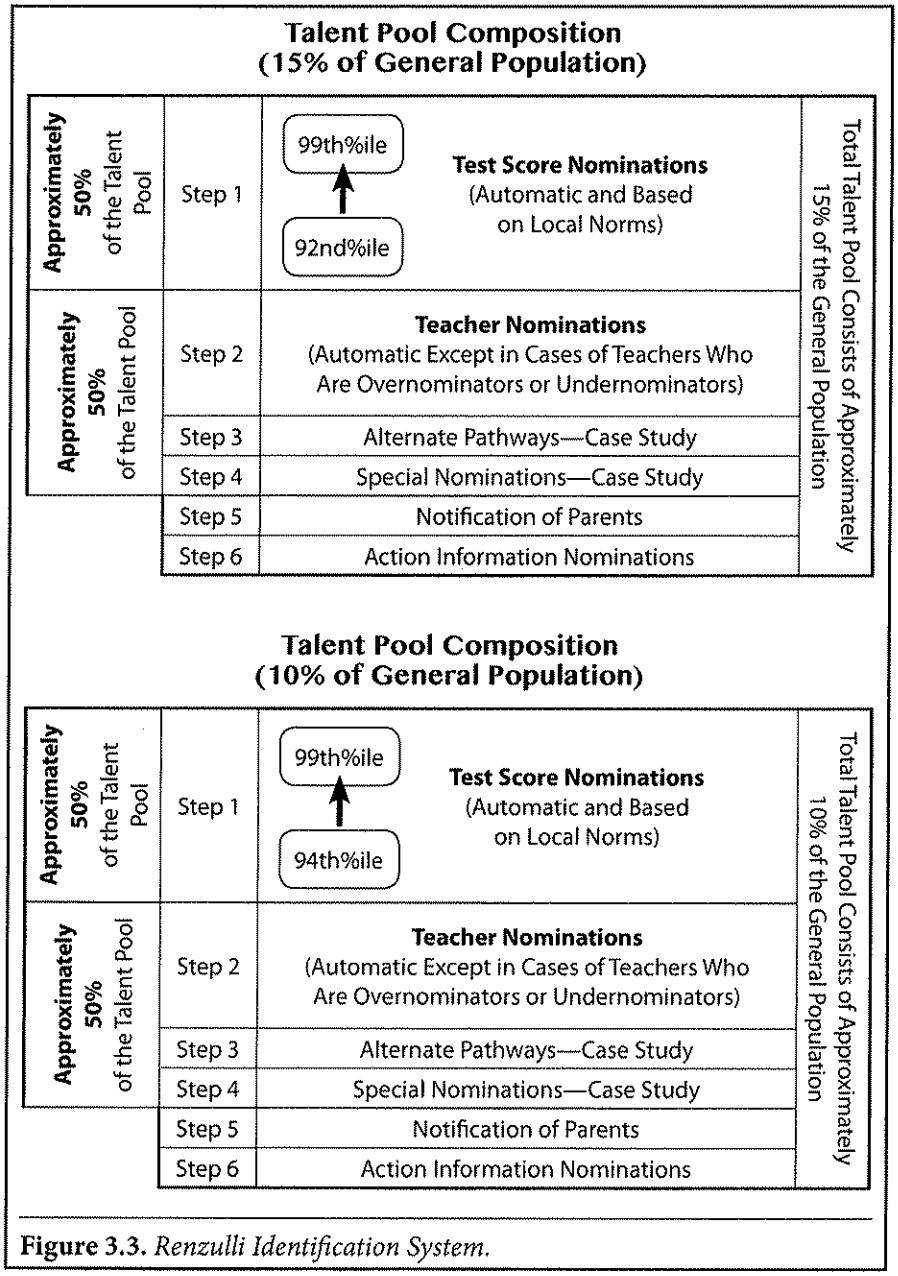

Figure 3.3. *Renzulli Identification System.*

Summary: What Makes Giftedness?

In recent years, we have seen a resurgence of interest in all aspects of the study of giftedness and related efforts to provide services for at-risk youth and young people who may show their potential in ways that are not always challenged in traditional school programs. A healthy aspect of this renewed interest has been the emergence of new and innovative theories to explain the concept and a greater variety of research studies that show promise of giving us better insights and more defensible approaches to both identification and programming. Conflicting theoretical explanations abound, and various interpretations of research findings add an element of excitement and challenge that can only result in greater understanding of the concept in the years ahead. As long as the concept itself is viewed from the vantage points of different subcultures within the general population and differing societal values, we can be assured that there will always be a wholesome variety of answers to the age-old question: What makes giftedness? These differences in interpretation are indeed a salient and positive characteristic of any field that attempts to further our understanding of the human condition.

In this chapter, I have attempted to provide a framework that draws on the best available research about creative and productive individuals. I have also referenced research in support of the validity of the Three-Ring Conception of Giftedness. The conception and definition presented in this chapter have been developed from a decidedly educational perspective because I believe that efforts to define this concept must be relevant to the people in schools who may be most influenced by this work. I also believe that conceptual explanations and definitions must point the way toward practices that are economical, realistic, and defensible in terms of an organized body of underlying research and follow-up validation studies. This kind of technical information should be presented to decision makers who raise questions about *why* particular identification and programming models are being suggested by persons who are interested in serving gifted youth.

The task of providing better services to our most promising young people cannot wait until theorists and researchers produce an unassailable ultimate truth, because such truths probably do not exist. But the needs and opportunities to improve educational services for these young people exist in countless classrooms every day of the week. The best conclusions I can reach at the present time are presented previously, although I also believe that we must continue the search for greater understanding of this concept, which is so crucial to the further advancement of civilization. In the meantime, we should follow the advice in the poem by Edward Markham at the beginning of this chapter—

we must draw our circles larger so that we do not overlook any young person who has the potential for high levels of creative productivity.

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