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The Three Ring Conception of Giftedness: A Change in Direction from Being Gifted to the Development of Gifted Behaviors

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Not everything that can be counted counts. And not everything that counts can be counted.
—Albert Einstein

The Meaning of the Word "Gifted"

Any attempt to develop a conception of giftedness must first deal with how one chooses to use the term, "gifted." When used for practical purposes, such as identifying students for special services, a direct relationship should exist between the definition of giftedness, the identification system, and the types of services offered in the program. If, for example, the program is designed to provide advanced level curriculum in math, then it is logical and appropriate to examine math scores and achievement levels in this discipline to make identification and selection decisions. If, on the other hand, a program is developed to respond to individual student interests, promote investigative skills and mindsets, and encourage creative productivity in students' strength areas, then a logical identification system that assesses these areas should be considered. In other words, the identification system should *follow* rather than precede the development of program practices.

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Approaching a practical understanding of the meaning of the term "gifted" raises the question of what heuristic purpose the term serves once it is deprived of the aura that surrounds its use in many professional education groups and lay communities. A heuristic technique is an approach to problem solving, learning, or discovery employing a practical systematic method. Although a heuristic technique is not necessarily optimal or perfect, it should be sufficient to pursue an immediate goal; in this case, to plan special programs and the processes that determine which young people are eligible to participate.

When considering the heuristic meaning of the word, "gifted," one must first examine the parts of speech assigned to the g-word in the dictionary (Merriam-Webster, 2016). It is categorized as both a noun (giftedness) and an adjective (gifted). When used as a noun, the word refers to an *entity* or state of being. For example, "He or she is gifted." Synonyms for the word as a noun are almost non-existent but "blessed" or "preordained" might come close. The noun "giftedness" often takes an adjective (such as scientific or academic) to specify the area in which a person has achieved superior accomplishment.

When used as an adjective, it refers to high potential in a particular area of human performance and usually has reference to a criterion or comparison group (e.g., "She is a gifted writer for her age"). Synonyms frequently found when the word "gifted" is used as an adjective are also adjectives that usually take an object (e.g., superior mathematician, advanced reader, innovative designer, exceptional artist, persuasive speaker, compelling writer); all words that helpfully provide direction when talking about the types of services advocated when developing special programs, services, and opportunities. Indeed, the word is even used as an adjective when the field is referred to as "Gifted Education," reminiscent of the root word, that a gift is something to be given rather than a state of being. The student receives the gift when the school provides opportunities, resources, and encouragement to transform his or her potential into gifted behaviors.

Persons advocating the entity perspective argue that someone must first officially label students as "gifted" before they can receive any special services. One may contrast this with a *responsive* orientation, where students react to presented opportunities and teachers respond to students' demonstrated talent potentials at various times and ways. Those with an entity perspective may assert that they are using a "multiple criteria" approach; but oftentimes, the label will not be bestowed unless the student achieves a predetermined cut-off score on an IQ or other cognitive ability test. In such cases, the preliminary nomination and screening serve as a ticket to take a test, and the strengths and evidence of talent potential that led to the nomination and/or screening are

disregarded unless one hits the cut-off score. Thus, claims about a multiple-criteria approach end up being a smokescreen for the same old test-based, entity-oriented approach.

A case in point is an article that discusses the impact of the nomination stage on identifying under-represented students (McBee, Peters, & Miller, 2016). Although an excellent analysis is made of issues related to nominations for gifted programs, referral to the "actually gifted" and the "not-actually gifted" clearly indicates an entity orientation, even at the very early nomination stage of identification. Use of terminology such as "truly" and "actually" gifted in scholarly publications, with or without whatever disclaimers may be noted, could easily lead the casual observer to believe that there are people who do indeed have a "gifted chromosome."

As a heuristic, "gifted education" conveys a process that *may* lead to the enhancement of abilities and skills. As a less than perfect heuristic, "gifted assessment" for identification *may* identify students who can benefit from enhanced programming, but it may also miss many who would benefit. Recent studies (Grissom & Redding, 2016; Lu & Weinberg, 2016; McCoach et al., 2016) provided evidence that students from historically under-represented groups continue to be less likely to be identified as "gifted." Grissom and Redding (2016) found that Black students are half as likely as other students with equal achievement to be assigned to a gifted program and that Black students are three times as likely to be nominated for a gifted program if taught by a Black teacher. Likewise, in a study that controlled for school characteristics, McCoach et al. (2016) found that students who are Black, Hispanic, from low-SES (Socio-economic status) families, or English learners whose achievement scores were just as high as students who were White, non-ELL (English Language Learners), and not from low-SES families were significantly less likely to be identified as "gifted."

The traditional entity usage and primary reliance on teacher nominations and ability-test scores have resulted in remarkable restrictions of high-potential students from historically under-represented groups in the United States (Erwin & Worrell, 2012; Ford, 2014; Ford & Whiting, 2016; Lakin, 2016; U.S. Department of Education, Office of Civil Rights, 2016; see also National Research Council, 2002). This approach also eliminates students of all backgrounds who are highly creative, those who think and pursue tasks with a different approach to learning, and those who have highly specialized talents, interests, creativity, or motivation. Examples abound of these nontraditional thinkers who go on to become world-changers. Joni Mitchell, winner of nine Grammy Awards and a member of the Rock and Roll Hall of Fame, reflected:

> I was a bad student. I finally flunked out in the twelfth grade. […] The way I saw the educational system from an early age was that it taught you what to think, not how to think. *There was no liberty, really, for free thinking*. You were being trained to fit into a society where free thinking was a nuisance. (Crowe, 1979, emphasis added)

Other examples also support our premise. Sir Richard Branson, the founder and CEO of Virgin Group, is dyslexic and did poorly in school. He dropped out of school at 16 to produce the magazine *Student,* which led to the creation of Virgin Records. On his last day, the headmaster told him he would "either end up in prison or become a millionaire" (Branson, 1998). Maya Angelou's turbulent childhood led to a period of selective mutism, and she has explained that people considered her "an idiot, a moron" because she didn't talk (Moore, 2003, para. 23). Steven Spielberg is another case in point. He had dyslexia, hated school, dropped out of college, and his grades were too low to get into the University of California's film school. His mother, a free spirit with artistic talent, gave him free rein. She was tolerant of her son's lack of interest in school and often let him stay home, feigning illness, so he could work on his movies (McBride, 2011).

Another dramatic example of a creative young scientist whose teacher overlooked his strengths follows in the teacher's comments about John Gurdon, winner of the 2013 Nobel Prize for medicine:

> His work has been far from satisfactory. His prepared stuff has been badly learnt and several of his test pieces have been torn over: one such piece of prepared work scored 2 marks out of a possible 50. His other work has been equally bad, and several times he has been in trouble, *because he will not listen, but will insist on doing his work in his own way*. I believe he has ideas about becoming a scientist: on his present showing this is quite ridiculous. (Collins, 2012, October 8, emphasis added)

Two Kinds of Assessment

Another consideration that guided the development of the Three Ring Conception of Giftedness is the set of differences between two kinds of assessment. Most identifications system have been based on assessments *of* learning—what students already know based on cognitive and achievement test scores. While this information is obviously valuable in making decisions about students' potential, the Three Ring Conception also takes into consideration factors related to assessment *for* learning. Sensitivity to traits such as

curiosity, interests, learning styles, expression styles, enjoyment of learning, collaboration, cooperation, planning, and self-regulation are not as easily measured or consistently present as traits measured by cognitive assessments. These traits are, however, developmental and are highly influential in the advancement of creative productive giftedness. In recent years psychologists have paid much more attention to performance-based assessment (Darling-Hammond, 1994; Wiggins, 1998) and therefore the traits listed above should be reflected in practical applications of theories designed to identify potentials for gifted behaviors.

The theory developed in this chapter focuses on creative-productive rather than lesson-learning giftedness and proposes that young people showing creative potential and an investigative mindset should also have access to special opportunities, resources, and encouragement. The quotation above and the following quotation attributed to Albert Einstein, the personification of scientific (adj.) "giftedness," point out that "Not everything that can be counted counts, and not everything that counts can be counted." If decision-makers only base student placement on things that can be easily counted, how many John Gurdons, Joni Mitchells, Richard Bransons, and Maya Angelous will society lose by failing to heed Campbell's and Einstein's advice?

The Three Ring Conception of Giftedness

As its name implies, the Three Ring Conception of Giftedness is based on three interacting clusters of traits consisting of above average (not necessarily superior) ability, task commitment, and creativity (see Fig. 19.1). 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 these three interlocking clusters of traits (Renzulli, 1978, 1986, 1988, 1999, 2002, 2005). No single cluster "makes giftedness," but rather, it is the *interaction* between and among the clusters that create gifted behaviors, which are the necessary ingredients for creative/productivity.

It is essential to understand that each cluster plays an important role in contributing to the display of gifted behaviors. The theory was developed to guide identification practices for both academic/high achieving giftedness and creative-productive giftedness. Both types of giftedness are important, they often interact, and both should be developed in programs that serve high-potential youth. Although the theory is widely used in programs based on our Schoolwide Enrichment Model (Reis & Renzulli, 2003; Renzulli & Reis,

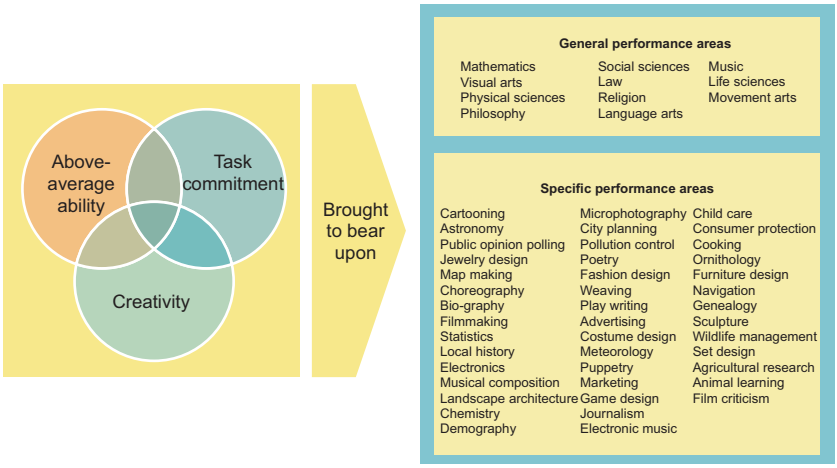

Fig. 19.1 Three Ring Conception of Giftedness

2014), the articles and chapters referenced above based on this theory are among the most widely cited in the field of research on gifted education and talent development. The Schoolwide Enrichment Model (SEM) combines the Enrichment Triad Model (Renzulli, 1977) with a more flexible approach to identifying high-potential students based on the Three Ring Conception of Giftedness, and it has been implemented in thousands of school districts worldwide. Extensive evaluations and research studies indicate the effectiveness of the model, resulting in independent researchers Van Tassel-Baska and Brown (2007) labeling it one of the mega-models in the field. This research suggests that the model is effective at serving high-ability students in a variety of educational settings and works well in schools that serve diverse ethnic and socioeconomic populations (Reis & Renzulli, 2003; Renzulli & Reis, 1994).

The curriculum/instructional focus in the SEM for all learning activities is the Enrichment Triad Model (Renzulli, 1977). Research on the use of SEM has consistently shown the positive outcomes of the use of this approach with students, finding that the enriched and accelerated content can reverse underachievement and increase achievement (Reis & Renzulli, 2003). The Enrichment Triad Model is designed to encourage creative productivity on the part of students by exposing them to various topics, areas of interest, and fields of study and to further train them to *apply* advanced content, process-training skills, and methodology training to self-selected areas of interest. In order for enrichment learning and teaching to be applied systematically to the learning process of all students, it must be organized in a way that makes sense to teachers and students, and the Enrichment Triad Model is widely used for this purpose.

Comprehensive reviews of research literature cited earlier on the Three Ring Conception of Giftedness have, over time, provided updated pertinent research supporting this definition. Each of the three clusters is described in detail in the sections that follow.

Above-Average Ability

Above-average ability includes both general and specific ability. General Ability is defined as the capacity to process information, integrate experiences that result in appropriate and adaptive responses in new situations, and engage in abstract thinking in areas such as verbal and numerical reasoning, spatial relations, memory, and word fluency. General abilities are broadly applicable to a variety of traditional learning situations and are most often measured by tests of general aptitude or intelligence. They are broadly applicable to a variety of traditional learning situations. Research support for the concept of the Above Average Ability cluster has been discussed in previous research syntheses (Renzulli, 1978, 1986, 1988, 1992, 1999, 2005) but can also be found in Sternberg's voluminous work on the Triarchic Theory of Intelligence (1985, 1988, 1996).

It is important to point out that we need to consider above average ability more broadly than just in terms of traditional academic learning. People in areas such as the arts, leadership, politics, human relations, executive function skills, business and entrepreneurship, and social conscientiousness are all real-world domains of expression where above average behaviors can be observed. These areas represent fields of knowledge where an individual's ability can be applied to address the types of problems one encounters in daily life by selecting, adapting to, and shaping one's environment. Sternberg (1996) has asserted that his concept of practical intelligence is a better predictor of successful academic and occupational outcomes than standard IQ tests and other cognitive ability measures.

Specific ability is the capacity to acquire knowledge and skill or the ability to perform at high levels in one or more specific areas of human performance. Examples of these areas are listed in the lower right section of Fig. 19.1. A few of the specific abilities can be measured by achievement tests or tests of specific aptitudes, but others (e.g., photography, cartooning, film making, leadership, fashion design) can only be determined by performance-based assessment. Assessment of these types of specific abilities usually can only be determined by highly skilled observers in specialized fields using criteria based on their experience in specific areas of performance.

Task Commitment

Although this second cluster of traits is not as easily and objectively identifiable as general cognitive abilities, task commitment is a major contributor to the development of gifted behaviors. These traits, which are consistently exhibited by creative-productive persons, are a refined or focused form of motivation. Renzulli (1978) formulated the term "task commitment" over four decades ago and in recent years the concept has gained increased attention in Duckworth's theory of "grit" (Duckworth, Peterson, Matthews, & Kelly, 2007). Whereas motivation is usually defined in terms of a general energizing process that triggers responses, task commitment represents focused motivation that is brought to bear upon 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, and a belief in one's ability to carry out important work. In addition to perceptiveness and a better capacity to identify significant problems, research and biographical information on persons of high levels of accomplishment have consistently shown that a special fascination for and involvement with content that is of high interest is of critical importance in the talent development process. The young people studied by Bloom and Sosniak (1981), one of the most well-regarded studies of sustained talent development, for example, displayed early evidence of task commitment.

Research support for including task commitment in a definition of giftedness has increased in recent years. From popular maxims and autobiographical accounts to research about the role of effort and sustained interest (Duckworth et al., 2007; Dweck, 2006; Tough, 2013), task commitment as well as focus and effort have emerged as necessary traits employed by successful individuals who can immerse themselves totally in a specific problem or area for an extended period of time. Indeed, grit is defined as the tendency to sustain interest in and effort toward very long-term goals (Duckworth et al., 2007).

Creativity

The third cluster of traits necessary for the development of skills leading to creative productivity includes factors usually characterized under the general heading of "creativity." Kaufman and Beghetto (2009) estimated that there

have been more than 10,000 papers written across diverse areas of psychology about creativity in the last decade. Summarizing research on this increasingly complex area is challenging. Several researchers, including Kaufman and Beghetto (2009), suggest that current creativity research follows one of two trends. The first trend focuses on eminence and creative genius, usually labeled as *Big-C* creativity. The second trend focuses on everyday creativity (Richards, 1990) and includes the creative work or activities of students or children, often called *Little-c* creativity. Longitudinal research related to the Three Ring Conception of Giftedness suggests that the "Little-c" opportunities that are core parts of the Schoolwide Enrichment Model (i.e., Type II and Type III experiences) can develop a mindset that can inspire students to pursue the Big-C creativity that may emerge in the years that follow. Hébert (1993) found that the creative projects of school-aged students had an impact on their post-secondary decisions and plans. He also found that the high creative opportunities in elementary and middle school programs encouraged students to seek creative outlets in high school. Students who experienced high levels of creative productivity, especially those who completed sustained creative projects based on their interests, maintained these interests and aspirations during college. One student Hébert (1993) interviewed, for example, who had graduated from college as an aspiring writer, explained that the high levels of creative enjoyment and engagement that she experienced in the enrichment program at her school led her to seek similar opportunities in her college and future work. In another longitudinal study of participants in Schoolwide Enrichment Model (SEM) based programs, Delcourt (1993) learned that high school creative productivity, as manifested in performances and product development, was predicted by earlier high levels of creative/productive behaviors in elementary and middle school. In another longitudinal study, students who participated in Schoolwide Enrichment Model programs based on our work (Renzulli & Reis, 1985, 1997, 2014) maintained strong interests over time and were still involved in creative-productive work both during and after graduation from college (Westberg, 2010).

Traits associated with creativity in the Three Ring Conception of Giftedness include novelty, curiosity, originality, ingenuity, flow (Beghetto & Kaufman, 2007; Csikszentmihalyi, 1996), and a willingness to challenge convention and tradition. The belief that creativity is developmental is inherent in the Three Ring Conception of Giftedness and is shared by other creativity researchers, including Runco (2004) and Sternberg and Lubart (1995). Another theory that is compatible with the creativity cluster in the Three Ring

Conception is Amabile's (1996) componential model of creativity. She argued that three variables were needed for creativity to occur: domain-relevant skills, creativity-relevant skills, and task motivation, similar to the interaction of the clusters in the Three Ring Conception.

Creativity is an essential component of the highest levels of creative productive giftedness. Many bright, capable, productive scientists have contributed to humanity's pool of knowledge, but the scientists whose work we revere, whose names have remained recognizable in scholarly communities and among the general public—the ones we think of as *gifted* or *Big-C* scientists—are those scientists who used their creativity to envision, analyze, and help to resolve scientific questions in new, original ways. Teachers, parents, coaches, and mentors can stimulate and develop young people's creativity in school and in this way prevent and alleviate the boredom and underachievement that too often affect high-potential students (Reis & McCoach, 2000). And because the occurrence of Big-C is rare, we remain fascinated by whether we can increase the likelihood that it can occur more often in students who participate in consistently planned enrichment opportunities.

It is difficult to measure creativity, and challenges exist in establishing relationships between creativity assessments and later creative lifetime accomplishments. Some research exists about school-based experiences that have increased creativity and had an impact on later creative productivity (Delcourt, 1993; Hébert, 1993; Westberg, 2010). Milgram and Hong (1993) found that engagement in childhood creative activities predicted adult vocational and avocational activities and Plucker (1999) found that students who were identified as creative thinkers at early ages by the Torrance Test of Creative thinking were more likely to engage in creative activities as adults. Although case studies do not represent the type of hard data that is the contemporary vogue in research and evaluation, when examining a different "brand" of learning, we must be open to equally different brands of evaluation.

Defining Gifted Behaviors

Although no single statement can effectively integrate the many ramifications of the research studies that underlie the Three Ring Conception of Giftedness, this definition of gifted behaviors attempts to summarize the major conclusions and generalizations resulting from earlier extensive reviews of research (Renzulli, 1978, 1986, 2005).

Gifted behavior consists of behaviors that reflect an interaction between and among three basic clusters of human traits—above-average ability, high levels of task commitment, and high levels of creativity. Gifted behaviors also include noncognitive traits related to various personal and executive function traits. Individuals capable of developing gifted behavior are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Persons who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs.

The Three Ring Conception: Frequent and Recurring Questions

In the decades since the original publication of the Three Ring Conception of Giftedness (Renzulli, 1978), questions are often asked about the interrelationships between and among the three rings. The most frequently asked questions are below.

Do Additional Clusters Exist Beyond the Original Three?

A frequent reaction to our work has been the suggestion that the three clusters of traits portrayed in the model do not adequately explain the development of gifted behaviors. Based on our experiences and research about the Three Ring Conception of Giftedness (Renzulli, 1978, 1986, 2005), we believe that the interaction among the three rings is still the most important feature leading to the manifestation of gifted behaviors. Other factors contribute to the reasons that some persons display gifted behaviors at certain times and under certain circumstances. These factors, discussed below, can be grouped into the two traditional dimensions of personality and environment that influence the manifestation of gifted behaviors. Certain aspects of the original three clusters also relate to chance factors, for it may be chance that enables a student to interact with a teacher that peaks and supports his or her creativity. Our research, however, has demonstrated that creativity and task commitment and the two factors discussed below are in fact modifiable and can be influenced in a highly positive fashion by purposeful kinds of educational experiences (Baum, Hébert, & Renzulli, 1999) and by enriched and purposely planned enrichment and acceleration experiences.

Are the Three Rings Constant?

Most educators and psychologists would agree that the above average ability ring represents a generally stable set of characteristics, at least when interpreted in terms of traditionally measured school achievement. In view of the types of assessment procedures that are most readily available and economically viable, it is easy to see why aptitude or achievement tests have been so often used to make decisions about entrance into gifted programs.

The task commitment and creativity clusters are different, as these traits are not always present or absent in the same manner as students who are generally more stable in content area achievement. We can't use a percentile to value a creative idea nor can we assign a standardized score to the amount of effort and energy that a student might be willing to devote to a highly demanding task. Creativity and task commitment are present or absent as a function of the various types of situations in which individuals become involved, and these clusters are variable rather than permanent. Although there may be a tendency for some individuals to develop more creative ideas than others and have greater reservoirs of energy that promote more frequent and intensive involvement in situations requiring high levels of creativity. Task commitment and creativity can be developed through appropriate stimulation and training. Variations in interests do, of course, occur, as some people are more influenced by certain situations than others, but educators cannot predetermine which individuals will respond most favorably to a particular type of stimulation. This is why in the Schoolwide Enrichment Model we recommend general enrichment experiences for all students.

The creativity and task commitment clusters almost always stimulate one another. When a person gets a creative idea, the idea is encouraged and reinforced by one's actions or the actions of others. An individual decides to "do something" with the idea and, as a result, his or her commitment to the task begins to emerge. Similarly, a commitment to solving a particular problem will frequently begin the process of creativity as applied to problem solving.

Are the Rings of Equal Size?

In the original publication of the three ring conception of giftedness, Renzulli (1978) noted that the clusters must be viewed as "equal partners" in contributing to the display of gifted behaviors, but over time we have found that the higher the traditionally measured cognitive ability, the more able the person is to achieve in most traditional learning situations. The above average ability

cluster is a predominant influence in lesson-learning giftedness. When it comes to creative/productive giftedness, however, an interaction among all three clusters is necessary for high-level performance. Not all clusters must be of equal size nor the size of the clusters must remain constant throughout the pursuit of creative/productive endeavors. For example, task commitment may be minimal or even absent at the beginning of a robust creative idea; the energy and enthusiasm for pursuing the idea may never be as large as the idea itself. Similarly, there are cases in which an extremely creative idea and strong task commitment will overcome somewhat lesser amounts of traditionally measured ability. Such a combination may even enable a person to increase her or his ability by gaining the proficiency needed to complete a robust project or study. Our research and case studies clearly indicate that larger clusters do in fact compensate for somewhat decreased size on one or both of the other two areas, but all three rings must be present and interacting in order for high levels of creative productivity to emerge (Renzulli, Koehler, & Fogarty, 2006; Renzulli, Sands, & Heilbronnor, 2011).

Co-Cognitive Additions to the Three Ring Conceptions of Giftedness

In addition to cognitive contributors to the development of high performance, a number of other factors referred to by Renzulli (2005) as "intelligences outside the normal curve" have been found to play a role in the accomplishments of highly effective young people and adults. New additions to our conception of giftedness focus on two clusters of co-cognitive traits that deal with characteristics related to using one's talents to create social capital by doing good works and applying executive function skills to the development of action-oriented products. Although these traits are not as easily measured as cognitive abilities, we believe they are important contributors to high levels of creative productivity and that can and should be developed in high-potential young people. Motivation for this work came mainly from an examination of the literature on positive psychology (Seligman, 1990). This movement focuses psychology on enhancing what is good in addition to fixing maladaptive behaviors. The goal of positive psychology is to create a science of human strengths that will help us understand and learn how to foster socially constructive virtues in young people. Financial and intellectual capital are the well-known forces that drive the economy and result in generating highly valued material assets, wealth production, and professional

advancement—all important goals in a capitalistic economic system. Social capital, on the other hand, is a set of intangible assets that address the collective needs and problems of other individuals and our communities at large. Also important in pursuing this work was our own observations and teaching experiences with young people.

The original graphic for the Three Ring Conception was embedded in a houndstooth background because people frequently asked where the three rings came from. The black and white houndstooth graphic was intended to convey the *interaction* between personality traits and environmental conditions that contribute to creative productivity. If we truly believe that many high-potential young people will eventually assume leadership positions in their chosen career areas, we should be encouraging them to use their talents to make the world a better place. The literature review and school experiences initiated a confirmatory factor analysis (Renzulli, 2002, 2008; Renzulli, Sytsma, & Berman, 2002) that resulted in the identification of the following six factors related to the production of social capital:

- Optimism (hope, positive feelings from hard work)
- Courage (psychological and intellectual independence, moral courage)
- Romance with a topic or discipline (absorption, passion)
- Sensitivity to human concerns (insight, empathy)
- Physical and mental energy (charisma, curiosity)
- Vision and sense of destiny (sense of power to change things, sense of direction, and pursuit of goals)

Subsequent research concluded that Houndstooth-oriented activities led to the constructive development of gifted behaviors, and the internalization of co-cognitive factors. It also showed that students became creative producers at the higher levels of internalization than merely doing work for grades or other forms of external rewards (Renzulli et al., 2006, 2011). This work helped us to better understand why some people mobilize their interpersonal, political, ethical, and moral realms of being in such ways that they place human concerns and the common good above materialism, ego enhancement, and self-indulgence.

The work on executive functions is a spin-off from the work done on Operation Houndstooth and it also relates to the task commitment concept in the Three Ring Conception of Giftedness. Executive functions are generally defined as a set of processes dealing with managing one's mental control, self-regulation, and resources in order to achieve a goal (Kaufman, 2010). Our concern was to better understand and explain the motivation and skills

that were observed in students' work on high-quality creative and investigative projects.

A comprehensive review of both the psychological and business leadership literatures led to countless articles on executive functions. Again, an instrument development project was initiated (Renzulli & Mitchell, 2011), and a confirmatory factor analysis resulted in the development of an instrument that identified the following five factors:

- Action orientation (decision making, goal setting, time management)
- Social interactions (listening, communication, collaboration)
- Altruistic leadership (team work, positive reinforcement, delegation)
- Realistic self-awareness (self-confidence, self-efficacy, humility)
- Awareness of the needs of others (e.g., empathy, tolerance, kindness)

An ongoing search was and continues to be pursued for materials and teaching strategies to develop these five co-cognitive factors in young people. We believe that both scientific examinations and practical examples of these background components are necessary for us to understand more fully the "big picture" of creative/productive gifted behaviors; and more importantly, the ways in which people transform their gifted assets into constructively positive social action. Although these factors are frequently called the "soft skills," we believe that the mission of gifted education should be expanded to include these co-cognitive skills because they are becoming more important in the top-level employment market. A major assumption underlying our work in these co-cognitive areas is that personality and environment are subject to modification. Factors such as courage, optimism, and a sense of power to change things are the traits that we respect in leaders and innovators such as Rachel Carson, Marie Curie, Nelson Mandela, and Martin Luther King (Renzulli, 2005). Combined with other co-cognitive executive function skills such as collaboration, leadership, and self-efficacy, what emerges in our enhancements of the Three Ring Conception of Giftedness Theory extends far beyond the "golden chromosome" theory that previously led many educators and psychologists to believe that some people are pre-ordained to be gifted.

In the years ahead, we hope to examine additional environmental and school-related interventions that promote the types of behavior associated with each of the clusters in the Three Ring Conception and what we describe as intelligences outside the normal curve (Renzulli et al., 2006). These interventions draw upon existing and newly developed techniques that can be used within various schools and in extracurricular contexts. Definitive answers to questions about promoting the development of these components will take

time but it is our hope that educators and psychologists will understand the importance of this challenge and initiate additional research to contribute to our understanding of these human behaviors. We also hope that educators will promote planned enrichment activities and the infusion of more enrichment into the regular curriculum to stimulate these behaviors (Renzulli & Waicunas, 2016).

Fundamental to our conception of giftedness is the difference between those who master information, even at very advanced levels, and those who create and produce new and important contributions to knowledge. Given the increased access to knowledge and the ease with which technology enables the acquisition of just-in-time information, our conception of giftedness focuses on how our most able students access and apply information rather than merely how they accumulate, store, and retrieve it. Also fundamental to our conception of giftedness is our belief that it is less important to label children as "gifted" and more important to develop the types of educational experiences that are necessary for the emergence of creativity, task commitment, and an investigative way of looking at the world, in order to encourage students to display gifted behaviors. Using the Three Ring Conception as one's definition of giftedness also means that "gifted programming" should include the various types of educational services and gifted education pedagogy that we advocate. Our goal is to promote enjoyment, engagement, and enthusiasm for learning in all students and to develop high achievement and the intellectual, motivational, and creative assets that contribute to both high achievement and creative productivity. The educational services described in the pedagogical and program organization model, the Schoolwide Enrichment Model, with which the Three Ring Conception of Giftedness was developed (Renzulli, 1977; Renzulli & Reis, 2014) increase the likelihood that more students will pursue creative work in school and life.

Conclusion

We believe that the justification for gifted education is to increase the world's reservoir of creative and productive young people who will contribute to the scientific, economic, social, and cultural development of mankind and to preserve the earth's resources for future generations. Persons identified using strategies based on the Three Ring Conception of Giftedness and the co-cognitive factors discussed above are a diverse group. They exhibit a wide range of characteristics in ability and achievement, temperament, and effort invested in realizing academic and creative accomplishments. Our four

decades of research on this conception of giftedness has convinced us that their talents and abilities, task commitment, and creativity, as applied to areas of interest or passion, can be developed over time. The development of these abilities is accomplished when individuals begin the process of identifying and nurturing their academic abilities and interests inside and outside of school. The development of task commitment and creativity occurs when students find an area in which they desire to pursue with a passion, usually when their interests are activated. When children experience and enjoy creative and productivity experiences, such as interest-based projects and academic work, they are more likely to seek additional creative and productive experiences later in their education and professional lives. If we promote and develop these creative experiences in elementary or secondary school, students are more likely to pursue creative opportunities in their adult lives, leading to more creative and productive personal and work lives. When this happens, more talents in a broader pool of persons with academic and creative potential will be realized and developed.

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