

Beyond Bloom: Revisiting Environmental Factors That Enhance or Impede Talent Development

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Classic studies of talent development involve reflections by accomplished or even eminent individuals on the parenting, education, and training they received in preparation for their careers. Roe (1953) discovered that her subjects, eminent scientists, typically began their passionate pursuit of collection, experimentation, or theorizing around the age of seven, Zuckerman (1977), surveying American Nobel laureates, reported that a large majority were themselves students of previous laureates. The laureate mentor auditioned various brilliant students in order to select those most likely to carry on his laboratory's line of work while the student sought guidance and association with recognized greatness. The chief benefit for the protégé was the communication of tacit knowledge (Wagner & Sternberg, 1986) on how to identify scientific problems with great potential for discovery and impact.

Bloom (1985), in collaboration with several students and colleagues, studied musicians, athletes, and scholars who had achieved high-level public recognition, focusing on the development of talent as expressed through the efforts of families and teachers. Roe's (1953) research addresses the first stage, "falling in love" with science. Zuckerman's (1977) study dwells mostly on the "mastery" stage, where unique aspects of performance are refined and professional reputation is enhanced. The middle period of disciplined practice of technique has, until recently, been largely ignored by our field (Ericsson, 1996). Educational institutions, peers, and families play a key role in assisting young people through this challenging yet essential developmental period.

SOME QUESTIONS THAT EMERGE FROM BLOOM'S STUDY

Developing Talent in Young People (Bloom, 1985) addresses the issue of whether the design and purpose of schools conflict with talent development. Bloom's work also raises a set of questions about the role of parents, teachers, and mentors:

- For which talent domains should schools be responsible? Should the culture of families in a particular school community influence this decision?
- Most talent domains include a "high" form and a "low" form. For example, dancers may perform in classical ballet or in musical theater. Should parents and teachers be equally supportive of students missing school to rehearse or perform in both cases?
- How much talent must be demonstrated in order to convince families and teachers that a child should be tracked into a serious talent-development program? Should sheer motivation and interest count as much as demonstrated talent?
- At what age should talent development begin? What criteria should be used to decide about moving a child into more narrowly focused training?
- Since lack of early opportunity precludes assessing talent on a level playing field, how should the needs of children outside the mainstream be addressed?

ENVIRONMENTAL FACTORS THAT AFFECT THE DEVELOPMENT OF TALENT

Families clearly play a very important role in the realization of promise and potential (Bloom, 1985). At the most fundamental level, parents provide two critical resources: money and time. Parental financial support for lessons, instruments, equipment, and outside-of-school educational opportunities is as essential as their role in arranging lessons, searching out programs, driving to and monitoring practices.

Parents, overtly or covertly, espouse values conducive to talent development (Olszewski, Kulieke, & Buescher, 1987). These may include the importance of finding and developing one's abilities; aspiring to achievement at the highest levels possible; independence of thought and expression; and favoring active-recreational, cultural, and intellectual pursuits (Olszewski et al., 1987). Csikszentmihalyi and Beattie (1979) assert that families have systems of cognitive coding as well as patterns of explanations for events or circumstances that determine values and attitudes. Parents can model a love of work and learning, including learning outside of structured or traditional activities and settings. Parents also model personality dispositions that are essential to talent development, such as risk taking and coping with setbacks and failures. They demonstrate that success requires a great deal of hard work and sustained effort over long periods of time (Olszewski et al., 1987).

Another very important role for parents is helping their talented child build supportive social networks (Subotnik & Olszewski-Kubilius, 1997). Although the social world of the child begins with the family, over time, as higher levels of performance are achieved, that world expands to include teachers, coaches, mentors, and talented peers. Social networks evolve naturally, but parents can help children build connections that support not only general social and emotional development, but talent development as well. Participation in special activities, such as competitions or after-school or summer programs, can augment social networks with peers that provide specific emotional support for achievement—friends and companions who are also involved in the talent field can be essential to sustaining commitment during times of flagging interest or disappointing performance. Parents can take an active and deliberate role in constructing these social-support networks for their children by providing a rich array of opportunities to connect with other talented children. Parents also assist by managing social relations (e.g., dates to play with other children) until the child is able to do so him or herself.

Although research generally supports the positive role that families can play in developing talent, the literature also suggests that different kinds of family interactions yield different outcomes for children. Specifically, family dynamics, attitudes, and behaviors and parenting styles greatly influence children's motivations to achieve or produce. Creatively gifted children tend to come from families that stress independence rather than interdependence between family members, are less child-oriented, have tense or imbalanced family relationships, and express negative affect and competition between family members, resulting in motivation toward power and dominance. High scholastic achievers come from families that are cohesive and child-centered, and where parent-child identification is strong, resulting in high levels of achievement motivation (Albert, 1978, 1983; Arnold, 1995).

Research studies of eminent adults yield retrospective accounts of family environments characterized by stress, trauma, conflict, and dysfunction (Ochse, 1993). Research on high-IQ individuals, most of whom do not end up being eminent, describes families that are intact and happy with normal and moderate levels of stress (Olszewski-Kubilius, 2000). What can we glean from these profiles of families of gifted individuals? Different mixtures of family variables may, in fact, yield different outcomes that are more or less supportive of creativity, scholastic achievement, talent development, and general mental health.

Question: Should we actively seek to help parents and educators promote one of these outcomes over others? Studies suggest that an important factor in the lives of eminent individuals is the degree to which children freely develop a unique identity and express their own thoughts. Individuals who do so are more likely to produce ground-breaking work in their talent domain as opposed to high levels of achievement. The circumstances within homes and families that create environments conducive to the development of independent identities and thought are many and varied. They include a reduction in parent-child identification, an emotional distance between parent and child, lower levels of parental monitoring of children, and less conventional socialization of children by parents (Ochse, 1993; Olszewski-Kubilius, 2000). The literature cites negative circumstances that create this “distance,” such as imbalanced or difficult family relationships, parental alcoholism or mental illness, death of a parent or sibling, or more benign circumstances such as parents who are less involved with children because they are involved with their own interests or careers (Ochse, 1993; Olszewski-Kubilius, 2000). These conditions are thought to result in children’s being more independent and autonomous, and less sex-stereotyped. They also cause children to retreat or shy away from interpersonal interactions at home and spend more time alone, which can facilitate practice and skill acquisition in the talent area and promote an inward focus (Ochse, 1993; Simonton, 1992).

A second family variable that appears to play an important role in achievement motivation is stress. Stress is a broad concept and difficult to define. What is very stressful for one person may be only moderately stressful for another. As mentioned above, many eminent individuals report difficult childhood circumstances, including parental loss, parental dysfunction, neglect, harsh parenting, lack of family stability, rejection due to physical handicaps, and poverty. Researchers speculate on the role of stress in engendering powerful motivations to succeed. Specifically, individuals may strive to acquire admiration and affection from others and compensate for that which was not obtained from family, to ameliorate rejection, or to prove that they are worth while (Ochse, 1993; Rhodes, 1997). Stressful family circumstances may propel a child to seek refuge in safe, controllable intellectual activities or to use creative activity as an outlet for emotions (Ochse, 1993; Piirto, 1992), or it may force an early psychological maturity for the child (Albert, 1978, 1980). Further, stressful childhoods may prepare individuals to cope with the intellectual tensions and marginal existence characteristic of many highly creative people (Feldman, 1994b; H. Gardner, 1994).

Traumatic childhood events galvanize some individuals to devote their life’s work to righting a perceived wrong. Csikszentmihalyi (1990) refers to the process by which some individuals take stressful circumstances and turn them into positive ones as “transformational coping,” whereby an individual redefines the situation into a broader existential problem and seeks a creative solution (i.e., creative work), thereby reducing or assuaging the emotions associated with the initial event or situation (Ochse, 1993).

Although research on eminent individuals seems to suggest that family stress and unhappy childhoods are associated with producing a creative individual, are they necessary ingredients? Not according to Csikszentmihalyi et al. (1993). They talk about a balance of support and tension within the family as conducive to high levels of talent development. These families provide contexts for children that are both integrated (family members are connected and supportive of one another) and differentiated (there are high expectations from parents that individual children will develop their talents to the highest degree possible through individual thought and expression). Such families produce autotelic personalities, or individuals who are self-motivated and self-directed. According to Csikszentmihalyi et al., an overemphasis on integration or differentiation can result in individuals who are eminent but not well adjusted (primacy of differentiation) or very well adjusted but not talented or creative (primacy of integration). They suggest that the development of high levels of talent requires the motivation and characteristics

born of childhood trauma—other levels of talent result from a more balanced blend of tension and support.

Similarly, Therival (1999b) asserts that stress and tragedy are not essential to creative productivity. He offers a model of creativity that includes the following components: genetic endowment (G), parental or other “confidence building” assistances (A), and misfortunes (M). According to Therival, creativity can develop in individuals who experience great misfortune as long as there is also assistance present. He distinguishes between creators who are dedicated (have high levels of G, many A’s in youth, and no major M’s) and creators who are “challenged” (high C, some A’s, and some M’s). Both produce creative work, but the challenged personalities are more overtly driven to prove themselves and to receive recognition (Therival, 1999b). Parenting styles that help a child to find his or her own identity, allow for open expression of ideas and independent thought, reduce parent-child identification but not necessarily affiliation or affection, and provide support in the presence of trauma or tragedy will be supportive of talent development, creativity, and good mental health.

Parents also help children succeed by not shielding or protecting them from risks or hard work and allowing them to experience the tensions that arise from high expectations. They can also support a rich internal fantasy life, use of time alone to decompress and rejuvenate, expression of emotions via creative work, active use of leisure time, and other ways for children to gain control over their life circumstances.

A THEORETICAL FRAMEWORK FOR ENVISIONING ENVIRONMENTS FOR TALENT DEVELOPMENT

Thus far, the discussion has centered on a psychological view of individuals in family settings. Cultural psychologists, anthropologists, and sociologists define environment in different ways that can illuminate early pathways to eminence and creative productivity. Bronfenbrenner’s (1977, 1979, 1993) theory of ecological development places individual development within nested contexts ranging from those in which an individual actively participates (*microsystems* of family, classroom, and peer group) to those framing society at the broadest level (*macrosystems* of opportunity structures and ideologies). Both immediate environments and systems in which an individual does not directly participate strongly influence the probability of fulfilling one’s potential. In Bronfenbrenner’s terms, the macrosystem “of overarching institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems” (1977, p. 515) manifests itself through interactions of individuals with their environments. Analysis of these interactions provides a deep and complex picture of the relationship between family, education, society, and the production of eminence. Bronfenbrenner’s model also enables investigation of historical time as it affects reciprocal interactions between individuals and social systems, such as education.

Bronfenbrenner’s (1977) framework presents levels of the environment that interact and ultimately affect the family system of the developing child. At the center are the individual and his or her personality, genetic endowment, and other personal variables. Individual attributes are developmentally characteristic ways of interacting with one’s immediate environment. A predisposition to seek challenge and eliciting the attention of mentors, for instance, are instigative traits common to talented individuals. The lowest level of environment, the *microsystem*, encompasses the individual’s direct interactions with his or her interpersonal and physical surroundings. A child’s immediate environment is a dynamic system in which parents both influence and are influenced by their talented son or daughter (Lerner, 1996). To take a dramatic case, the young violin prodigy is influenced by family values and resources to begin the instrument at a young age and to work diligently to master it. At the same time, evidence of exceptional talent leads the family to attend to the young violinist in particular ways, to treat him

or her differently from siblings, even to change the family life-style to afford expensive training, relocate for a specific teacher, or undertake extensive travel to competitions and concerts. The reciprocal effects of child and family lead to a dynamic environment that may be underestimated, for example, in retrospective studies investigating the relationship of early stress and subsequent eminence. It could be the child's own reactions to family conditions and resulting modifications of the family system that lead to different outcomes in terms of talent development.

Ecological frameworks of development go beyond the immediate family and peer system to consider three additional hierarchical levels of environment. The *mesosystem* encompasses relationships between a child's immediate surroundings, or microsystems. Peer group and family, or school and science club, are examples of interacting environments. For a gifted child, contradictory family messages and peer-group influence may serve to inhibit dedicated work in a talent domain. Conversely, when mentors and teachers in a talent domain align with supportive peers, parents, and school environments, the conditions for talent development should be maximized (Olszewski-Kubilius, Grant, & Seibert, 1993). One microsystem can influence another, as when parents step in to influence peer contacts or to establish a specialized network in the child's talent area. Consideration of the multiple and interacting environments in which a child participates is a necessary practical and research strategy for understanding the role of family more broadly and thoroughly in talent development. The family can alternatively buffer or intensify the effects of environmental factors and always acts as a filter of events and circumstances (Olszewski-Kubilius, 2000).

The *exosystem*, the next nested level of environment, refers to environments that affect a child, but in which the child does not directly participate. The work lives of parents, for instance, affect household resources and parental stress, which in turn act on family dynamics and the life of the child. The bureaucracies of school districts and state legislatures offer another example of exosystem environments that affect the lives of talented children through decisions about gifted programs, school orchestras, science facilities, and advanced academic options.

The broadest level of environment is the macrosystem, defined as "the overarching pattern of *micro*, *meso*, and *exosystems* characterizing a given culture, subculture or other broader social context, with particular reference to the developmentally instigated belief systems, resources, hazards, lifestyles, opportunity structures, life course options and patterns of social interchange that are embedded in each of these systems" (Bronfenbrenner, 1979, p. 228). It is within the macrosystem that cultural views of child rearing, giftedness and talent, and achievement pathways emerge to affect the beliefs and behaviors of parents and teachers. Widespread beliefs about the importance of being well-rounded, for instance, characterize much of contemporary American society and work against intensive early training in many talent areas. Similarly, intensifying social ideologies of equality have led to an anti-elitist bias and the dismantling of ability tracking in schools. The ideal of meritocracy continues as a strong component of the contemporary macrosystem, despite compelling evidence of limited social mobility in the general population (Lemann, 1999). Which talent areas are valued, which kinds of people advance, and what kinds of achievement pathways are available are all functions of the broad macrosystem of a society. An individual's cultural attributes and orientation, socialized primarily through the family but also in education, determine his or her success and social standing (Bourdieu, 1977; Meyer, 1994). Just as important, the cultural attributes that are valued and rewarded in education and the professions are those a society deems valuable (Feldman et al., 1994). The composition of elites interacts with the larger cultural context; eminent individuals and creative producers are both shapers and products of society.

Studying talent development requires understanding individual pathways within cultural and historical contexts. Cultural capital theory (Bourdieu, 1977) provides a useful framework as it moves beyond family environment to consider the content of the values, tastes, and personal presentation style that affect an individual's acceptance into professional and social elites. In the

study of social stratification, Bourdieu's work has inspired a body of empirical research on the origins and effects of "cultural capital," usually operationalized as an individual's knowledge of or access to cultural resources (e.g., DiMaggio, 1982). Bourdieu asserts that schools offer the primary institutional setting for production, transmission, and accumulation of the various forms of cultural capital. He treats cultural capital as cumulative, arguing that the greater the early endowment, the easier the further attainments. Family preference for high culture, verbal fluency, and upper-class personal tastes and presentation ("habitus"), according to this theory, provide gifted children with cultural resources that are rewarded in school and among mentors and gatekeepers in talent domains. Merton (1988) refers to this as the "Matthew Effect" or accumulation of advantage. Child-rearing patterns stressing independence, critical thinking, and creativity are associated with high levels of cultural capital (Wachs, 1992). Along with cultural capital, a family's social capital of contacts and networks permeates the environments of gifted children and affects their talent development. Sociologists have investigated how differences in cultural capital reinforce inequality regardless of specific and current family circumstances such as stress or family dysfunction (DiMaggio, 1982; Swartz, 1997).

Time is the final element of environment that surrounds a gifted child and family. Both the historical era and a person's age affect how an individual experiences life events and family systems. Combining psychological and sociological approaches, life-course analysis focuses on the dynamic interaction of individual agency, age cohort, historical conditions, and social ties linked through chronologically ordered life events (Clausen, 1993; Elder, 1974; Giele, 1993; Giele & Elder, 1998). Successive cohorts of individuals are framed and influenced by their formal educational experiences, peer-group socialization, and experience in unique historical and cultural events (Ryder, 1965). The variation that arises from each cohort's unique location in the stream of history "provides an opportunity for analyzing social transformation" (Ryder, 1965, p. 843). Personal characteristics and the timing of life events also interact with individuals' cultural and historical location and their connections to institutions and groups (Arnold, Youn, & Salkever, 1999) to influence development.

The seemingly contradictory findings about the role of adverse circumstances in the childhoods of eminent individuals could be examined through the lens of a life-course approach. As with Elder's (1974) findings about children of the Great Depression, the age at which children experience hardship may play a role in their eventual adaptations. The ideology of the era (its macrosystem) also makes a difference, as, for example, the Depression era valued stoicism and the 1960s expressiveness. Clearly, the relationship between early family factors such as adversity and later eminence is very complex, and the influence of multiple and interacting contexts and historical events must be taken into consideration (Feldman, with Goldsmith, 1991; Jacobi, 1991; Subotnik, 1995; Subotnik & Arnold, 1995; Subotnik & Steiner, 1993; Tannenbaum, 1983).

CASE STUDIES

Over the years, we have been working closely with gifted adolescents and adults, focusing on the variables that either enhance or impede the development of talent over time. Below are some case studies from our work: two in academics, one in instrumental music, and one in dance. These case studies illustrate the broader environmental and cultural issues involved in the talent-development process that were described in previous sections. They also provide real-life examples of the issues posed in the questions at the beginning of this chapter.

At age 10, Lyle has mastered the secondary school mathematics curriculum. Throughout his elementary years, his teachers have tried to accommodate him with tutoring sessions and visits to high school classes. Lyle has always wanted more from his mathematics classes: more theory, more history, more "What ifs." At home, Lyle creates poems with

cadences based on mathematical patterns and writes stories about geometric figures. He attends graduate-level mathematics classes at a local university one afternoon a week after school.

Question: How will ecosystem factors that place emphasis on being well-rounded and socially adept affect Lyle's talent development?

Alex is a fifth grader enrolled in eighth-grade mathematics at a highly selective school for academically gifted students. If it were up to him, he would take math all day long at school. He loves to show the teacher and his older classmates that he has mastered the homework or lesson at hand. Alex turned down an opportunity to participate in an after-school mentorship program with a mathematics professor, preferring instead to play Nintendo and participate in sports. It would not occur to him to pose math problems for himself or to create mathematics-related projects on his own.

Question: Should effort be invested in developing Alex's mathematical creativity and, if so, what form should this effort take? What factors contribute to Alex's low levels of extracurricular motivation related to mathematics?

Michael Y. is 4 years old and is the youngest child in a musical family. His mother has nurtured the talents of internationally renowned violinists and has great hopes for Michael. He began practicing at the age of 2-1/2 and now practices up to 2 hours a day. Mrs. Y. provides him with daily lessons. Sometimes he cries during his practice sessions, but when he does, his parents pick up their violins and practice along with him. They believe that if Michael proves to be extraordinarily talented, he will be poised to make his debut as a teenager. Based on her experience, Mrs. Y. feels strongly that although it is hard to tell at this stage whether Michael is indeed truly talented, without this intensive investment in Michael's early potential there will be little chance for him to perform as a violin soloist in the world's finest concert halls.

Question: How much time and effort should be invested in potential talent before adolescence? What are the effects of these efforts on general development?

Maggie and her mother just moved from New York City to a lovely semi rural community to start a new life after a nasty divorce. Ten-year-old Maggie requested ballet lessons, so she was enrolled in a local ballet school. The teacher noted after just a few sessions that Maggie was far too talented to be served well by the limited offerings of her school and suggested she attend the regional ballet preparatory program. Maggie's mother drove her 90 miles each way several times a week to the regional center. One year later, the center director suggested that Maggie had sufficient talent to audition for the nation's premier ballet company in New York City.

Question: How much should parents sacrifice for their children's talent development? What are the costs of great parental investment to the family system and to other family members?

About the Cases

Each case study raises questions about the desirability of intensive early talent development. Both the child's personality and the family environment play central roles in how (or whether) early talent unfolds. The parents of Lyle and Michael hold the values and the cultural capital to commit unambiguously to all-out efforts to develop their children's gifts. From the brief case study, it seems that Lyle's personal drive and love of mathematics have been supported by his parents' willingness to supply him with time, resources, and transportation. Lyle's parents' values for independence and unconventionality fit the findings from family-environment studies of eminent individuals. Lyle also receives substantial reinforcement from educational settings

and mentors, including those to which his parents have connected him (mesosystems). In Michael's case, his family made the decision to invest in musical education before any particular evidence of desire or talent appeared. Each boy's immediate environment (microsystem) reflects his parents' backgrounds, values, and expertise (exosystems). Both families clearly believe that concentrated talent development and being different from peers are perfectly consonant with a happy life.

The cases of Alex and Maggie illustrate microsystems that are less supportive of maximal talent development. The values of Alex's parents and the resources of Maggie's mother do not necessarily favor sacrificing well-roundedness or family life-style for the chance of future eminence. The exosystem of American education does not provide students like Alex and Maggie with automatic, affordable mathematics or dance training at the highest levels. Left for the family to support, such intensive talent development also contradicts macrosystem American ideologies about child rearing and the nature of happiness. Being well-rounded, "normal," socially integrated, and family-oriented takes precedence over sacrifice, solitary endeavor, individualized education, and emphasis on a particular family member.

These four individuals illustrate how interacting environments serve to determine whether childhood gifts progress to adult eminence. Direct interactions of personality, family, school, and peers determine whether a talented child delves into his or her domain. Individual decisions about such talent development, however, are nested in broader environments that ultimately affect the opportunities and values surrounding the school and family.

CHALLENGE FOR OUR FIELD

Given the ambivalence of our culture and schools about the desirability of intensive talent development, how can educators support gifted children and their families? Let us end with a challenge to researchers in our field:

Question: Is a chance at greatness worth the price of failure?

We believe that intensive talent development is extraordinarily worth while for both the individual and society. Research on talent and eminence consistently shows that the pleasures of engaging in high-level talent expression (Csikszentimihalyi et al., 1993) along with public recognition and identity as a high achiever (Bloom, 1985; Subotnik & Arnold, 1995) offer ample compensation for the rigors of talent development. Competition and critical analysis of creative work do not elicit a turning away from the pursuit of talent development. In fact, feedback and comparisons with others are essential to outstanding performance and creative productivity. Serious devotees of a talent domain learn to endure occasional failure and to distinguish derogatory comments about one's work from personal attacks.

We strongly support intensive engagement in a talent domain and look to environmental theory as a guiding force for intervention. Returning to the discussion on family that appears earlier in this chapter, we can draw some parallels with how educators might bolster children's psychological strength when it comes to competition or bucking the tide of conventionality. Educators can work with families to examine negative assumptions about talent engagement, provide cultural capital resources in the form of tacit knowledge and connections, and reduce financial and other barriers to top-level training. At the macrosystem level, we need to continue working for equal opportunity for talented people from underrepresented groups.

Playing it safe with a career or interest should be encouraged if it protects a young person in physical danger or if it leaves open other future paths of creative or intellectual development. Otherwise, there is much to be learned in the deep and persistent pursuit of a goal. In earlier times, women and people of color could not pursue their ambitions. Being condemned to speculate whether one could have been "a contender" is a sad way to live, whether imposed by racism, sexism, or well-meaning protectiveness.

We must redefine the meaning of happiness for individuals with great talent. Too often we operate under the impression that conventional conceptions of happiness are universal in their appeal. Imposing this value on individuals with a drive to excel or create makes their lives more difficult. Understanding and supporting that drive, especially when it is constructive in result and does not impede mental and physical health, can go a long way toward supporting our most talented youth.