

Critique of "Socioemotional Adjustment of Adolescent Girls Enrolled in a Residential Acceleration Program"

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Abstract

The professional literature on entering college under-age is reviewed briefly. Several spectacularly young college graduates are mentioned. Two high-schools-within-college institutions are discussed. Then several critical points about the article are made. A few suggestions for conducting a longer-term, more definitive follow-up of educationally accelerated girls are given. Finally, the value of social adjustment, as usually defined, for the great occupational success of intellectually extremely able persons is questioned.

Cornell, Callahan, and Loyd (1991) address an extremely important problem because many intellectually talented youths want to short-cut the high school curriculum by becoming full-time college students several years earlier than the usual age of 18 (e.g., see Brody & Stanley, in press). For several years after I founded SMPY in 1971, we encouraged this type of "radical acceleration" (Stanley, 1978, 1989), chiefly because feasible alternatives were scarce. Soon after SMPY started, Professors Herbert and Nancy Robinson of the University of Washington at Seattle set up a formal program of extremely early entrance, cushioned by a transition year that combined high school with college (Robinson, 1983), which is still thriving. A number of less accelerated plans, such as Simon's Rock Early Entrance College of Bard College and the Clarkson School (Kelly, 1989), were inaugurated. All these owed much to the legacy of the University of Chicago's pioneering efforts before World War II, including its Shimer College offshoot, and the Ford Foundation's Fund for the Advancement of Education experiment in the 1950s (Fund, 1953, 1957; Pressey, 1967). Much of the rationale can be found in Pressey's (1949) excellent survey and summary. Even earlier, of course, it was foreshadowed in Terman and Oden (1947, Ch. XX).

There have been some spectacularly young college graduates. During its entire history, 1876-1990, Johns Hopkins University has had 50 recipients of the Bachelor's degree before age 19 (for information about the first 32, see Stanley & Benbow, 1983). Increase Mather graduated from Harvard College in 1656 at age 16 and later became its first American-born president (Ohies, 1978, pp. 874-875). Norbert Wiener graduated from Tufts College in 1909 at age 14 and received his PhD from Harvard University at age 18; he went on to become the father of cybernetics (Wiener, 1953). Merrill

Kenneth Wolf received his Bachelor's degree from Yale University in music theory under Paul Hindemith in 1945 the month he became 14 years old (Keating, 1976, p. 346; Montour, 1978a). He is a neuroanatomist.

Charles Lewis Fefferman, now an extremely distinguished professor of mathematics at Princeton University, earned baccalaureates in both mathematics and physics from the University of Maryland at age 17 and his PhD from Princeton at age 20. At age 22 he startled the academic world by being promoted to the rank of full professor of mathematics at the University of Chicago (Montour, 1978b).

Apparently, the youngest college graduate this country has ever had is Adragon DeMello, who in 1988 received a Bachelor's degree from the University of California at Santa Cruz at age 11. This seemed more a stunt than an education, however, because after a court battle between his parents he had to enter junior high school (Seligman, 1990).

Jay Luo received his BS in mathematics with high honors from Boise State University in 1982 at age 12 years 45 days. He completed most of his first graduate year in mathematics at Stanford University while still 12 years old. After earning a Master's degree in mathematics and one in computer science there, Jay went into the work world, at least for awhile, at age 18.

In 1982 Sam Ho received his Bachelor's degree from the University of Washington in the Robinsons' early entrance program before his fourteenth birthday. He remained at the university to do graduate work in computer science.

Except for Sam, all of the above accelerated without the benefit of an explicit program encouraging them to move ahead fast. They had strong parental support and, undoubtedly, were encouraged by some faculty members. There were few, if any, formal institutional supports to cushion the effect of being far younger than their classmates. It took great academic ability to speed successfully to quite early graduation from college.

Four Years in Two

An important recent development is the Texas Academy of Mathematics and Science (TAMS), which began in 1988 on the campus of the University of North Texas in Denton. Each year, 200 students from all over Texas enter it after the tenth grade and for two years associate with each other while taking nothing but regular college courses: two semesters each of biology, chemistry, physics, and calculus, plus at least eight semester courses in the humanities and social sciences. It is

in marked contrast to the state high schools for mathematics and science located in North Carolina, Louisiana, Illinois, Indiana, and elsewhere, even though all have similar goals (Stanley, 1987, 1991). After two years, students receive a high school diploma from TAMS at the typical age for high school graduation but also have earned junior-year standing in college. They may then remain at the University of North Texas or transfer elsewhere, especially to Texas A&M University or the University of Texas at Austin. With respect to social and emotional development, they have proceeded age-in-grade with their true intellectual peers but have had the stimulation of more advanced academic work than most high schools could provide. Also, they have had many benefits of living on a college campus and being encouraged to participate in some of the college activities and win college honors (e.g., being named the most outstanding Hispanic-background student on campus after her first semester or being named the most outstanding first-year chemistry student at that large university). Thus, at age 17 or 18, as they graduate from TAMS, these students already know how to live as college students. They should be able to avoid the confused-freshman syndrome wherever they complete their college work.

This academically highly rigorous model seems to me to combine most of the advantages of acceleration into college with few of the defects. It requires, however, that all of the students permitted to go this route be exceptionally able mathematically (having scored at least 550 on the mathematical part of the College Board Scholastic Aptitude Test as tenth graders) and overall (having scored at least 1000 on the combined SAT M plus SAT V score). Because the curriculum is prescribed and permits no exceptions, such as deciding not to take the two semesters of physics, the entrants must be good students across the scientific, mathematical, humanities, and social sciences board. This is a more demanding task than that faced by nearly any other college student. It guarantees the recipient of a TAMS diploma much exposure to a range of excellent subject matter and, in most instances, considerable competence to proceed further in science, mathematics, or other areas.

I consider this an ideal way for certain well-motivated, mature students to bridge the chasm between high school and college. It is not appropriate for all bright high schoolers, of course. Those who will miss playing on the high school football team or being a "big shot" without much effort are probably wise to pass up the opportunity to attend a TAMS-type school.

The Study Under Discussion

After this preamble, let me address the Cornell, Callahan, and Loyd article directly. It has the good feature of being somewhat prospective, as are Zak, Benbow, and Stanley (1983), Stanley (1985a, 1985b, 1985c), Stanley and McGill (1986), and Brody, Assouline, and Stanley (1990). "The sample consisted of 44 female students (22 first-year students

and 22 advanced students) . . ." We know that there were at least "six third-year students," but we do not know how many second-year students are included in the 22 advanced ones. The authors tell nothing at all about the less hardy entrants who did not survive until the second or third year. Were any fourth-year students included, or has the program been in effect too short a time for there to be such?

Lumping together first-, second-, and third-year students and studying them over a one-year period makes it difficult to know what is happening to the first-year ones compared to the others. We might expect that the hardy survivors from earlier years would drop out in lesser proportions than the first-year students. We can't even tell from the article how many dropouts there were: "Thirteen girls [i.e., nearly 30% of the 44] left the program for reasons judged by the program directors to be at least in part stress-related. (Some [sic] other girls left for academic, familial, or financial reasons.) This relatively high attrition rate suggests the inappropriateness of acceleration for some students." One wonders how many were left at the end of the year, from which classes they came, and what the authors learned about characteristics that might be observed to prevent other "inappropriate" girls from undergoing the strain of coping with a college curriculum at a tender age and dropping out.

The authors do comment briefly on "personality characteristics associated with healthy adjustment," but don't deal with cognitive variables such as grades earned, subject-matter knowledge at entrance, and SAT abilities. From our work in SMPY with thousands of youths, many of them accelerated in grade placement, we believe that the *sine qua non* of early entrance to college is SAT-V, SAT-M, and TSWE or equivalent ability at least above the average of the regular students in the college in which one plans to become a full-time student (Brody & Stanley, in press; Stanley, 1985a). Also, proof of advanced knowledge by scoring well on College Board achievement and/or Advanced Placement Program examinations seems highly desirable.

"Entering students [just the 22 first-year ones?] were tested with the Wechsler Intelligence Scale for Children—Revised. . . Fullscale IQs ranged from 115 to 155 (mean 129)." Why was an intelligence test for *children* used to choose college students? Should any extremely young student with a WISC-R IQ of only 115 move into a college environment? "Strong motivation and aspiration for high achievement" don't seem to me nearly enough basis for admitting such a student without an exhaustive study of that person's actual *academic* readiness to skip most high school work.

It seems likely that if the IQs of second- and third-year students were included in the above statistics, the average of the first-year entrants is probably below 129. Most state programs for the gifted (e.g., California's and Pennsylvania's) that have an IQ criterion require at least 130 in order for a child to be considered even mildly gifted. To be radically accelerated, I should think that an IQ of at least 140 on the old Stanford-

Binet Scale (mean 100, standard deviation 16) would be needed to cope effectively and comfortably with the academic challenges of a college. We are not told how demanding scholastically the unnamed college actually is, but from information acquired outside the article I infer that it is not a highly selective institution.

The authors state that "IQ is not predictive of the adjustment measures in this study" but provide no data. We need detailed examination of the relationships of various cognitive measures to grades, persistence to graduation, and other measures of academic achievement. "IQ was not significantly correlated with any of the four outcome measures" does not address the academic question directly.

Along other lines, the authors get caught in the dilemma that usually occurs when one uses a one-tailed test of statistical significance because of a prior directional hypothesis. In Table 2, two "correlations were large enough to be statistically significant, but were in the opposite direction from [the] study hypothesis." Of course, there's no way to test them for statistical significance because by adopting a one-tailed test an investigator has declared that results in the opposite direction are of no interest to him or her. As here, that is rarely the case.

Summary

The authors spent much time and energy testing these girls and analyzing relationships of "personality and family measures with program adjustment," the latter conceived in nonacademic terms. As they note, their results are tentative and preliminary, given the special nature of their sample and its small size. Careful readers might, however, glean from the data some useful hypotheses to test further.

What seems really needed is a personality and social adjustment supplement to the work of the Fund (1953, 1957), Brody and Stanley (in press), Stanley (1985a), Robinson and Janos (1986), Zak, Benbow, and Stanley (1983), and others. I believe this should involve starting with prospective entrants to the college in several consecutive years as they file applications and continuing with each entrant for at least five years to see what happens, academically and otherwise. Such a study would be longitudinally extended enough to yield clearer results. The authors' present report, in which to achieve even a modest sample size involved confounding results for first-, second-, and third-year students, is a modest start along that path. They have interesting data on the 22 first year students and presumably are following them further. By studying the entire early-entrant cohort each year, they would in about a decade have enough well-observed cases from which to draw some conclusions applicable to at least a small proportion of girls who yearn to become residential college students quite young or are pressured by their parents to do so. These findings would not be automatically generalizable to males or to other college settings, but at least they could clarify the social and emotional advantages and limitations for a defined group.

Meanwhile, other investigators working with other populations can fill in some of the picture that, inevitably, is missing in a single study, however well conducted. This is the way that findings in the social sciences cumulate and overarching theory develops.

Afterthoughts

Detailed case studies such as those of Montour (1977) and Wallace (1986) should help understanding of how radical accelerants develop. From our experience at SMPY, we know of many huge successes and a few partial failures. Entering college underqualified academically seems one of the most serious risk factors. Not working hard at social relationships over the early years sometimes results in a young man's or woman's becoming permanently immature socially; parental wisdom and continual help for the developing child seem crucial. Failing to develop nonacademic skills such as in athletics and the performing arts may limit the youth's personality development.

Vocationally successful adults often are able to cover up their social deficiencies better than adolescents can, so their adjustment in the long run may seem good, especially if the person has great professional satisfaction (Wiener, 1953; Packe, 1954). Actually, how well adjusted socially was Wiener? John Stuart Mill? Madame Curie? Einstein? Darwin? Freud? Mozart? George Sand? They may not have been hale fellows well met, drinking beer with "the boys" and playing poker each evening, but the world lauded them for their intellectual contributions. More ordinary mortals are, however, likely to need a better social base from which to conduct their lives, especially if lack of social skill and emotional immaturity hinder them academically, professionally, or personally.

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