Why is black educational achievement rising?

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In light of the vigorous criticisms of American public education heard in recent years, one might reasonably conclude that our public schools are in a state of collapse. The need for reform is thought to be especially urgent in large, urban school districts. There, according to critics like Jonathan Kozol, disadvantaged students languish in deteriorating, segregated facilities with low standards, inferior and underfunded programs, and unmotivated teachers.

Such conditions might be expected to have caused the greatest educational damage to minority students, since they are the predominant group in most urban school systems. Yet according to the latest reports of the National Assessment of Educational Progress (NAEP), conducted for the U.S. Department of Education’s National Center for Education Statistics, minority students have shown substantial gains in academic achievement over the past twenty years in both reading and mathematics. The gains are greatest for black students and are especially striking when black
achievement is compared to white achievement. Over this same interval white achievement has remained relatively constant, and therefore the black-white achievement gap has been cut in half.

Black achievement trends thus seem to contradict the prevailing perception that urban public schools are failing. What has caused these trends? Are they simply statistical artifacts? If they are real, are they due to improvements in schools or to changes in students and their families? We know, for example, that school systems with high proportions of disadvantaged and minority students have been targets for both desegregation and compensatory-education initiatives. We also know that academic achievement levels are strongly influenced by a student's socioeconomic background, and that minority families have gained ground in this respect over the past twenty years. Can black achievement gains be traced to specific school programs or to improvements in the socioeconomic status of black families?

Many social scientists and education experts who have written on this topic prefer school-based explanations for black achievement gains. At least two major school theories are in vogue. One claims that black achievement gains are due to school desegregation, most of which occurred during the 1970s. Another holds that minority achievement gains are caused by expanded compensatory programs for disadvantaged students, such as Head Start and Chapter 1, whose funding has increased greatly during the last twenty years. Education researchers have offered a variety of other school-based explanations, including better teachers, improved curriculum and academic standards, and smaller classes.

In contrast to school theories, less attention has been paid to the role of socioeconomic factors in black achievement gains. It is well documented that socioeconomic factors are among the major explanations of black-white achievement differences and that the socioeconomic conditions of minority populations have improved over the past twenty years. But a clear link between black achievement gains and socioeconomic improvement remains to be established.

This essay explores the causes of black achievement gains. New evidence available from the NAEP offers valuable insights into which explanations for these achievement trends are most credible. Although the NAEP findings are not definitive by themselves, when considered in conjunction with other studies of black and white achievement the evidence suggests that the socioeconomic
advancement of black families is more important than school programs—school desegregation in particular—in explaining rising black achievement.

**Black and white achievement trends**

Before discussing the causes of black achievement gains, the size of the gains must be emphasized. Figure I shows black and white reading achievement between 1971 and 1990 for thirteen-year-olds (most of whom are eighth graders). In 1971, when most blacks in this age group had been educated in segregated schools, black thirteen-year-olds trailed whites by 39 points. Over the next two decades white scores remained virtually constant, starting at 261 and ending the period at 262. In contrast, black scores rose steadily for most of the period, starting at 222 and ending at 242 (following a drop of one point in the latest assessment). By 1990 there was still a reading achievement gap between blacks and whites, but it had been reduced by almost half, from 39 to 20 points.

**Figure I. National Reading Achievement Trends for Whites and Blacks, Age Thirteen**

![Graph showing reading achievement trends](image)

*aSource: National Assessment of Educational Progress.*

Figure II shows a similar pattern for mathematics achievement. In 1973 black thirteen-year-olds were 46 points behind whites in
math achievement. Again, white scores remained relatively constant over the next seventeen years, increasing slightly from 274 to 276. But black math scores rose by 21 points, from 228 to 249. At the end of the interval, black thirteen-year-olds were only 27 points behind whites in math achievement, reducing the black-white mathematics gap by nearly one-half.

Figure II. National Math Achievement Trends for Whites and Blacks, Age Thirteen

<table>
<thead>
<tr>
<th>Year</th>
<th>White</th>
<th>Black</th>
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<tbody>
<tr>
<td>1973</td>
<td>290</td>
<td>280</td>
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<tr>
<td>1977</td>
<td>290</td>
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<td>1985</td>
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<tr>
<td>1989</td>
<td>290</td>
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</tbody>
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*aSource: National Assessment of Educational Progress.*

These patterns of black gains are replicated for seventeen-year-olds, with similar reductions in the black-white achievement gaps. The black-white achievement gap in reading fell from 52 to 30 points between 1971 and 1990; the gap was actually down to 21 points in 1988, but black achievement fell 7 points in 1990. In mathematics the gap has fallen from 40 to 21 points, with most of the reduction taking place between 1986 and 1990.

The achievement gap has also been reduced for black nine-year-olds, but the magnitude of the reduction is much smaller. The gap in reading has been reduced by only 9 points, largely because black reading achievement fell 7 points between 1988 and 1990. The gap in mathematics was reduced by only 8 points, mainly because white math achievement increased by 8 points between
1986 and 1990. This is one of the few sizeable increases in white achievement documented by the NAEP.

Likewise, the achievement gap between white and Hispanic students has fallen in the past twenty years. With just two exceptions, however, the reductions are much smaller in magnitude. The white-Hispanic reading gap has declined less than 10 points for nine- and thirteen-year-olds (but has been reduced by 19 points for seventeen-year-olds), and the math gap has declined less than 10 points for nine- and seventeen-year-olds (but has gone down by 14 points for thirteen-year-olds). One reason that Hispanics have posted smaller gains than blacks may be the constantly changing composition of the Hispanic student population—the arrival of new immigrants with lower academic skills may pull down overall Hispanic scores.

Since black achievement gains have been the largest and most consistent, the explanation for this phenomenon demands our greatest attention.

**Misleading statistics?**

An explanation of black achievement trends must start with the vexing problem of whether these trends reflect true changes in the academic achievement of individual black students. The NAEP does not assess all students and it does not track the same individuals over time. Rather, it is a series of "snapshots" of different groups of students at different points in time, based on a scientific sampling of schools and students. This raises the possibility that the "gains" simply reflect differing achievement levels of varying groups of students, whose differences are explained by factors other than individual change over time.

We can rule out a number of technical problems such as population coverage, sample sizes, or self-selection bias. The NAEP student population includes both private and parochial schools in addition to public schools, which eliminates the potential bias of studies based only on public school systems. Although sample sizes vary and have become smaller in more recent assessments (particularly for minority students), the NAEP has applied appropriate statistical tests to assure that black achievement trends are not artifacts of sampling error. Finally, unlike the voluntary Scholastic Aptitude Test (SAT), the NAEP is based on a scientific sampling procedure that aims to represent the total student population.
Much of the concern over the quality of American education has been based on declines in SAT scores, which on the surface might appear to conflict with NAEP results. But SAT scores are based on an older and self-selected population, generally the college-bound, and therefore do not portray the achievement patterns of the total student population. It is quite possible for the achievement of college-bound students to decline while the achievement patterns of the total student population remain constant, as Charles Murray and R.J. Herrnstein pointed out recently in these pages.1

A more troublesome issue is whether the sampling procedure actually achieves its goal. One possibility is that samples of minority students are biased in some way and therefore reflect different populations at different times. For example, more recent samples of black students might represent more advantaged or middle-class schools or families, with correspondingly higher test scores. In particular, school participation rates were lower in 1990 than in earlier years, and indeed the 1990 assessment reveals a number of rather sharp deviations in test scores from the 1986 and 1988 assessments. But participation rates were very high in prior assessments, and black achievement gains are consistent up to 1986 or 1988. Given the sophisticated sampling procedures used in the NAEP, it is unlikely that these twenty-year black achievement trends are artifacts of biased samples.

Another and somewhat controversial explanation of national achievement trends is a theory of achievement based on family size and birth order. According to this theory, later-born children in a family have lower intelligence than first-borns, and therefore—everything else being equal—children from larger families have lower aptitude-test scores on the average than do children from smaller families. During a baby-boom cycle families become larger and academic achievement falls, and during a baby-bust cycle families become smaller and achievement rises. This theory has been invoked with some success to explain the declines and increases in national test scores such as the SAT or NAEP. However, it is not a likely explanation for the reduction in the black-white achievement gap, because the baby-boom and baby-bust cycles for blacks and whites have been quite similar during the relevant time periods. Between 1960 and 1980, for example, both black and white fertility rates declined by about 50 percent.

School desegregation

A number of studies and several noted educators have suggested that black achievement gains observed in the NAEP might be attributed in part to school desegregation. Such speculation has been offered by the president of the Educational Testing Service, the research organization that currently administers the NAEP; the first director of the NAEP project; and a comprehensive study on race sponsored by the National Academy of Sciences. I use the term "speculation" because none based their claims on NAEP data tabulated separately for segregated and desegregated black students.

School desegregation is an understandably attractive explanation for black achievement gains. School segregation was extensive until 1970, when many federal courts and the federal government began ordering comprehensive desegregation plans to attain racial balance. According to federal statistics, in 1968 about 77 percent of black students attended schools that were over half minority; by 1988 the black enrollment in predominantly minority schools had declined to 63 percent. Further, in 1968 a majority of black students—about 64 percent—attended schools that were over 90 percent minority; in 1988 that figure had shrunk to 32 percent. In other words, the gains in black achievement coincided with the beginning of comprehensive school desegregation.

This explanation corresponds to the classic "harm and benefit" thesis popular among social scientists for the past forty years, which holds that school segregation harms the self-esteem and academic achievement of black students while desegregation improves these and other outcomes. The most recent version of the harm-and-benefit thesis is found in a statement to the Supreme Court signed by a group of fifty-two social scientists, including such prominent desegregation experts as Robert Crain, Gary Orfield, and Thomas Pettigrew. The statement was part of a brief submitted by the NAACP in the recently decided DeKalb County case. Unlike a similar statement signed by thirty-two social scientists in Brown v. Board of Education, the Supreme Court majority in DeKalb gave little judicial note to this statement or the research on

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which it was based. Nevertheless, many social scientists and educators continue to support and promote school desegregation because of a belief in the harm-and-benefit thesis.

The studies by Columbia University's Crain and his associates are especially important in this regard. Crain is one of the few social scientists who argues that school desegregation alone causes significant academic gains for black students, based on his own reviews of the research literature and, most recently, a long-term study of black participants in a Hartford, Connecticut, voluntary busing program.4

Other examinations of the evidence, however, fail to support the desegregation theory. First, most of the increase in school desegregation occurred from 1968 to 1972. Much less desegregation occurred after 1972, when school busing policies became increasingly controversial and the Supreme Court limited the legal requirements for desegregation between central cities and their growing suburban school populations. After 1980 few comprehensive desegregation plans were implemented, and some mandatory busing plans, such as those in Los Angeles, Norfolk, Austin, and Oklahoma City, were abandoned after changes in legal requirements. For these reasons, the majority of black students remained in segregated schools (defined as schools with less than one-half white enrollment) as recently as 1988. Thus the trend in school desegregation does not match the black achievement trend, which showed gains during in the 1980s as large as those of the 1970s.

Second, numerous studies fail to find a strong association between desegregation and black achievement. One of the more rigorous reviews was sponsored by the National Institute of Education in 1982. This study found only a small effect of desegregation on black reading gains—far less than the gains documented by the NAEP—and no effect at all on black math gains, which the NAEP shows to be just as large as reading gains.5 Even if desegregation produced the strongest effects cited in the social scientists' 1992 statement to the Supreme Court, it would account for only a small fraction of the black gains shown in the NAEP.6

6The most optimistic conclusion about desegregation is that it could close the black-white gap by about one-third, but since only about a third of black students are in
The most compelling evidence about the relationship between desegregation and black achievement comes from the NAEP itself. Since the NAEP establishes the trends for blacks in the first place, it makes sense to test the desegregation theory by comparing achievement trends for blacks in segregated versus desegregated schools. If the desegregation theory is correct, and given that most desegregation took place between 1968 and 1972, we would expect larger gains for blacks in desegregated schools than for those in segregated schools. Achievement trends broken down by type of school attended have recently become available from the NAEP, where desegregated schools are defined as those whose student bodies are over 50-percent white and segregated schools as those whose student bodies are under 50-percent white.

**Figure III. Black Reading Achievement by Desegregation Status, Age Thirteen**

Standardized Score (0-500 scale)

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<tbody>
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<td>230</td>
<td>240</td>
<td>250</td>
<td>260</td>
<td>270</td>
</tr>
</tbody>
</table>

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blacks in desegregated schools

blacks in segregated schools

*Source: National Assessment of Educational Progress.*

Figures III and IV show NAEP reading and math achievement trends for black thirteen-year-olds according to the racial composition of their schools. The desegregation theory is clearly not supported by the evidence. While blacks in majority-white desegregated schools, it would account for only about one-ninth of the 1971 gap observed in the National Assessment.
(desegregated) schools generally score somewhat higher than blacks in predominantly minority (segregated) schools, the trend in reading between 1975 and 1988—when the largest black gains occurred—shows that black thirteen-year-olds in segregated schools have made slightly higher gains than blacks in desegregated schools. In the case of math trends between 1978 and 1990, blacks in segregated schools actually gained 10 points more than blacks in desegregated schools. By 1990 there is only a 2-point difference between the scores of segregated and desegregated black students.

**Figure IV. Black Math Achievement by Desegregation Status, Age Thirteen**

This pattern—in which segregated black students register gains equal to or greater than those of blacks in desegregated schools—is replicated for other age groups as well. Over these assessment periods, black nine-year-olds in segregated schools gained 12 points in reading and 17 points in math, compared to 11 points and 16 points respectively for blacks in desegregated schools. Among black seventeen-year-olds, those in segregated schools gained 34 points in reading and 22 points in math compared to 21 and 17 points respectively for those in desegregated schools. By 1990 black nine-year-olds in segregated schools were only a few points below their desegregated counterparts in reading and math achievement,
and there was virtually no difference for black seventeen-year-olds.

Since the NAEP finds that gains for segregated black students are as large or larger than for desegregated blacks, and since the majority of black students remain segregated, it is highly unlikely that school desegregation has contributed to national black achievement gains. Of course, this finding does not mean that school desegregation cannot benefit some black students under some conditions, but it does mean that we cannot look to desegregation as a major cause of the black achievement gains documented by the NAEP.

It must also be noted that the NAEP does not offer evidence on other possible benefits of desegregation, such as personal self-esteem, improved race relations, and long-term educational and economic benefits. Whether or not such benefits accrue to desegregation is still being debated in the research and policy literature.

**Compensatory education**

The second major theory for explaining black achievement gains is the growth in compensatory-education programs between 1970 and 1990. Like the desegregation theory, the compensation theory is also attractive for explaining differential patterns of achievement—gains for blacks and no change for whites—since compensatory-education services are targeted at disadvantaged groups who are disproportionately minority.

The largest compensatory-education programs are Head Start and Chapter 1 (formerly Title 1), both of which began in 1965 as part of the War on Poverty. Head Start was a six-to-eight-week summer program when it began, serving about 560,000 preschool children. By 1972 it had expanded to a full-academic-year program serving about 380,000 preschoolers, and by 1990 it was serving over 540,000 preschoolers with a total funding level of $1.55 billion.

Chapter 1 is currently the largest compensatory-education program, offering the most services and having the largest enrollment and expenditures of any federal education program. It offers extra or remedial reading and math instruction for low-achieving students in schools with high proportions of students below the poverty level. In 1990 Chapter 1 served over five million children, with total expenditures of nearly $6 billion.

In addition to these federal efforts, many states and local school districts have compensatory initiatives for disadvantaged minority
students, some of which were adopted as part of desegregation programs in lieu of improving racial balance (as in Los Angeles and Detroit). For example, it is not uncommon for school boards to reduce class sizes or to install magnet programs in predominantly minority schools. The net effect of such programs is to increase resources and per capita expenditures for schools that have high proportions of disadvantaged minority students.

Although we cannot directly test the effects of compensatory-education programs with NAEP data, we can turn to several national evaluations of Head Start and Chapter 1 programs that indicate their likely effects. One of the largest and most comprehensive evaluations of Head Start was a "meta-analysis" sponsored by the Department of Health and Human Services, a formal quantitative review of a large number of separate evaluations of Head Start programs. This study found that Head Start did have a positive short-term effect on minority student academic achievement, but the effect was not lasting. After several years in school, there was no difference between the academic achievement of Head Start and comparable non-Head Start children.

There have also been some comprehensive studies of the effects of Chapter 1 compensatory programs on academic achievement. One of the largest and most recent studies was sponsored by the Department of Education, which reviewed a large number of separate evaluations of Chapter 1 programs. This review concludes that Chapter 1 programs have positive effects on academic achievement, but the effects are not large enough to account for the reduction in the black-white achievement gap observed in the NAEP data. A study by the Congressional Budget Office estimated that Chapter 1 programs might account for about 10 percent of the reduction in the black-white achievement gap. One reason for the small effect is that Chapter 1 programs include a significant number of white students; in 1990 about 43 percent of Chapter 1 students were white, with the remaining students about equally divided between blacks and Hispanics.

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8Department of Education, The Effectiveness of Chapter 1 Services (1986).
9Daniel Koretz, Educational Achievement: Explanations and Implications of Recent Trends (Congressional Budget Office, 1987). The reduction in the black-white reading and math achievement gaps shown by the National Assessment is approximately one-half (.5) of a standard deviation (a measure of variation of test scores). The Koretz report estimated that Chapter 1 programs account for a black-white achievement gap reduction of about .05 of a standard deviation.
Although compensatory programs may explain some portion of black achievement gains, it is unlikely they account for most of the improvement. Nor is it likely that any other school programs or reforms, such as smaller classes or improved resources, explain the closing black-white gap. Unlike desegregation and compensatory education, most general school reforms benefit both black and white students in proportion to their numbers. Most non-targeted school improvements, therefore, should not cause differential gains for one racial group as compared to another.10

**Socioeconomic status**

If school programs and desegregation do not explain most of the black achievement gains, what other changes might be responsible? In most national studies of academic achievement, beginning with the well-known Coleman Report of 1967, socioeconomic factors have been the strongest correlates of both black and white achievement levels, with such factors as parental education, income, and job status being the most prominent. Is it possible that black achievement gains are due to the improved educational and economic condition of the black family?

Data from the NAEP suggest that they are. New tabulations allow a comparison of trends in parental education for blacks and whites between 1971 and 1990. Figure V (see following page) compares the percentage of black and white thirteen-year-olds who report one or more parents with some education beyond the high school level (i.e., college). In 1971, when the achievement gap was large, only 21 percent of black thirteen-year-olds had parents with post-high school education, compared to 41 percent of white students. By 1990, when the achievement gap had been reduced by half, the parents' education gap had been reduced by more than half (from 20 points to 4 points). During this time the rate of post-high school education for black parents rose to 49 percent, while it rose only modestly, to 53 percent, for white parents. Thus, the education gap between parents of black and white thirteen-year-olds narrowed considerably between 1970 and 1990.

When we examine achievement trends according to the level of parental education (rather than the kind of school attended), a

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10Barbara Lerner suggested in the March 1991 issue of *Commentary* that black achievement gains might be due to the minimum-competence standards adopted by many states in recent years, which could differentially affect blacks given their lower achievement levels.
large proportion of the black improvement can be explained. In reading, for example, the aggregate shift in black parents' educational level between 1971 and 1990 accounts for about 8 points, or 42 percent, of the 19-point gain. That there is some achievement gain beyond the amount explained by improved parental education suggests that a role is played by other unmeasured socioeconomic factors as well as school-program factors such as compensatory education.

Figure V. Percent of Thirteen-Year-Old Students Reporting Post-High School Education for Either Parent\(^a\)

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\begin{array}{c|c|c|c|c|c|c|c}
\hline
\text{Percent} & & & & & & & \\
\end{array}
\]

\(^a\)Source: National Assessment of Educational Progress.

The student-report measures of parent education in the NAEP may be subject to some bias, either by a desire to enhance the status of one's parents or by lack of knowledge. Nonetheless, we know from census data that the educational and economic status of black adults improved substantially between 1970 and 1990. For example, among black adults age thirty to forty-four—the approximate age range for parents with thirteen-year-old children—the proportion with post-high school education rose from 12 percent in 1970 to 38 percent in 1989. This is not a strictly comparable population, since we cannot separate out the subgroup consisting of parents, but the size of the educational gain is similar to the NAEP gain: 26 percentage points compared to 28 percentage points.
The increased education of black parents is not necessarily the direct cause of achievement gains. Rather, educational status probably indicates a host of specific family behaviors and attitudes—such as motivation, educational aspirations, child-rearing practices, help with homework—which become the mechanisms by which parents' educational status is translated into actual academic improvement for their children.

This leads to an obvious question about why the smaller rise in white parents' education does not translate into at least a small rise in white achievement. With the data at hand we can only offer some speculations. It may be that white parents have reached some sort of a ceiling in the fraction of the population who will have post-high school education, and that differences in the 40-to-50-percent range, near the ceiling, do not translate into specific advantages for their children's academic achievement. It may also be, as Murray and Herrnstein have argued on the basis of SAT-score trends, that the college-bound student population—undoubtedly representing more highly educated families—is declining in achievement, thereby offsetting improved achievement by those whites who have gained in socioeconomic status.

**Implications for education policy**

That black achievement is rising is good news, regardless of its cause. This does not mean we should be complacent about the sizeable black-white achievement gap that remains. But, given the importance of academic success in this society, the much-reduced size of the achievement gap portends continued progress of blacks toward the goal of educational, occupational, and economic parity with whites.

Rising black achievement also offers a positive counterpoint to the often negative news about conditions in the black community, underscored recently by the Los Angeles riots: unemployment, drugs and crime, family breakdown, and so forth. Although these conditions are realities for many blacks who live in cities, the NAEP tells us that blacks as a whole are making significant strides in education in spite of continuing hardships for some.

Regarding the causes of this educational improvement, the studies and data presented here offer only a rather blunt instrument. But while they cannot provide a definitive answer, they do point to likely candidates. First, the increase is probably not an artifact of NAEP methodology, although technical problems in the sampling
procedures cannot be ruled out completely. Second, school desegregation appears to contribute little or nothing to black achievement gains (rendering harmless the Supreme Court's recent decisions to allow neighborhood schools even should that practice increase segregation because of housing and demographic patterns).

Third, it appears that some black gains may be due to compensatory-education programs, although these account for much less than half of the improvement. Unfortunately, most studies do not evaluate the long-term and cumulative effects of all compensatory programs combined, so we only have estimates of the effects of one program at a time.

Finally, the strongest correlate of black achievement gains in the NAEP appears to be improvements in the socioeconomic status of black families, the size of which is comparable to the gains in achievement. This explanation is consistent with the large body of educational research that identifies socioeconomic status as the strongest influence on both black and white achievement.

That white achievement has not increased over the same time period is not such good news, particularly given assessments that document substantial achievement differences between the United States and other countries. On the other hand, the data do not support the theory of academic decline that has been prominent among education critics over the past twenty years or so. The lack of a large school role in black achievement gains suggests that we should examine the white family, and especially the middle-class white family, before we blame the lack of white gains on deteriorating public school systems.

These achievement trends should temper the calls for school reform, at least until we better understand the factors that account for rising black achievement and stagnant white achievement. Reformers call for decentralized school management, higher standards, longer school years, better teachers, increased funding, or greater school choice. There may be other good reasons to support these reforms, but there is no evidence that they caused black gains in the past or that they will promote white gains in the future. So far the reformers have not told us why a group with a history of poor school performance has improved its achievement levels within existing public schools. The NAEP data suggest that we pay more attention to what is going on within families, and particularly to those behaviors and attitudes associated with socioeconomic advancement.