Monopolizing Knowledge? The Ethnic Composition and Curriculum of Israeli High Schools

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Using multinomial and simple logistic regressions, the study presented here examined the availability of 12 school subjects in Israeli academic high schools that are differentiated by their ethnic composition. It found that academic subjects that are classified as more prestigious are offered less often at the highest curricular level in schools that are dominated by students of the underprivileged Jewish ethnic group. Thus, curricular decisions that are based on the matching of subjects with the assumed capacities and interests of the students seem to end in the monopolization of highly valued knowledge by privileged social groups.

Recent research has established school curriculum as a significant factor in the creation of educational inequality. Because of highly differentiated curricula, schools offer a variety of subjects at different levels of difficulty. Research on curriculum differentiation has focused on ability grouping or curricular tracking, both of which have significant effects on students' academic performance (Gamoran 1987, 1993), educational and occupational aspirations, self-esteem, and enrollment in postsecondary education (Vanfossen, Jones, and Spade 1987). Since underprivileged students are overrepresented in the weaker groupings and in the noncollege programs, grouping and tracking appear to play a central role in the perpetuation of social inequality (Vanfossen et al.).

Research on the social impact of curriculum differentiation beyond the distinction among the various tracks has been less common. This type of analysis requires reference to content (specific school subjects) as a source of educational inequality, and its neglect is not surprising. Even though curriculum is a socially organized phenomenon, sociologists of education seldom analyze it in relation to choice, organization, and the distribution of knowledge (Goodson 1992; Whitty 1985).

The study presented here analyzed school subjects as a source of social inequality based on the assumption that subjects are both stratified and differentially distributed among the population of students. By studying the link between the stratification of school subjects and the social stratification of the students who learn them, I attempted to establish the role of the differential offering of subjects in the creation of educational inequality.

STRATIFICATION OF SCHOOL SUBJECTS

School subjects are a form of organization of knowledge (Bernstein 1971). Every society defines some type of knowledge as superior and specifies which social categories are entitled to access to it (Eggleston 1977; Labaree 1988; Young 1971). The possession of superior knowledge is a basis of social power (Apple 1990). Hence, students' differential access to different curricula may be perceived as a strategy that dominant social groups use to preserve their power by monopolizing higher-status knowledge (Bernstein; Eggleston; Young).

The hierarchy of school subjects is not restricted to a single dimension. School subjects may be ranked according to several criteria, each representing a different source of differentiation. The most obvious source of stratification of school subjects is their academic versus their utilitarian character. Subjects that are viewed as utilitarian are less valued, receive fewer resources, and are offered to less-able students (Eggleston 1977; Goodson 1983, 1992).

The second source of stratification is between mathematics and the sciences, on the one hand, and the nonscientific subjects, on the other hand. The high status of the sciences has only recently been established. When they were first introduced into the curriculum at the turn of the 20th century, the sciences were considered utilitarian, particularly relevant to lower-class students (Goodson 1992). It was only after they underwent a notable change of content that they came to be viewed as highly prestigious academic subjects. The case of the sciences demonstrates that the status of academic subjects is variable and is subject to constant negotiations.

There are at least two explanations for the current high status of the sciences. The traditional explanation focuses on the centrality of technology in the modern economy, which makes knowledge of mathematics and the sciences functional for the acquisition of higher-status occupations. Apple (1990), on the other hand, attributed the high status of mathematics and the sciences to their testability, which marks them as useful tools for stratifying students and thus contributes to the fulfillment of the selection function of schooling.

Apple compared the resources attached to the development of the curriculum in mathematics and the sciences to the lower investment in the arts and the humanities, which are less easily tested and graded and hence less relevant to the school's function as a social selector. However, the arts and the humanities are highly valued according to the third source by which subjects are differentiated—their use in the acquisition of "cultural capital" (in Bourdieu's, 1977, terms).

Eggleston (1977) distinguished between school subjects that become valuable by being instrumental for future achievements and those that are a part of high culture. In this regard, the well-documented declining status of the humanities in the modern school curriculum (Labaree 1988; Kliebard 1992; Powell, Farrar, and Cohen 1985; Stray 1985) is explained by the expansion of education and the incorporation of lower-status students into the educational system. The humanities, defined as high culture appropriate only to the elite and perceived as a leisure activity, have been partly replaced by other, more practical subjects (Kliebard; Labaree). However, the arts and humanities serve as a means of social exclusion by differentiating between insiders and outsiders, in Weber's (1946) terms.

A student may obtain the knowledge required for the acquisition of a high-status profession, but needs to prove his or her familiarity with high culture to legitimate an elite position (DiMaggio and Useem 1982). Thus, in spite of the general decline in the proportion of high-culture knowledge in the school curriculum, a significant amount of the curriculum offered to students who are preparing for elite positions is devoted to such knowledge. Cookson and Persell's (1985) study of elite boarding schools in the United States found that along with the instrumental subjects, these schools offer a rich curriculum in the arts and humanities.

SUBJECTS AND STUDENTS

The correspondence between the stratification of school subjects and the social identity of the students who study the subjects has been investigated mainly with reference to participation in academic versus nonacademic courses. As was noted, extensive research has been dedicated to the correlation between students' social origins and their odds of being placed in academic programs (for a review, see Oakes, Gamoran, and Page 1992).

Research on tracking does not usually focus on specific school subjects, and when it addresses the topic, it concen-

trates on within-subject differentiation (Gamoran 1987; Garet and DeLany 1988; Oakes 1985; Vanfossen et al. 1987). Hence, in the framework of research on tracking, analyses of the stratification of subjects mainly compare the different levels of the same subject offered in the different tracks in the same school, not different subjects offered in different schools.

As a within-school phenomenon, tracking is studied primarily at the individual level. When the research deals with between-school variations, it focuses on organizational features of the process of tracking, not on the knowledge offered to students (Gamoran 1993; Kilgore 1991; Kilgore and Pendelton 1993). The notion of the differential distribution of knowledge (Goodson 1992) suggests that beyond the within-school differentiation based on tracking, there may be a between-school differentiation according to the subjects offered to students who occupy a similarly defined track. Coupling the fact that schools tend to maintain both academic and nonacademic programs (Garet and DeLany 1988) with the assumption that lower-status students may be denied access to higher-status knowledge, one may expect college tracks in schools with different social compositions to offer different curricula. In short, I postulated that academic-track students in higher-status schools have access to more-valuable knowledge than do academic-track students in lower-status schools.

Among the few scholars who have referred to the correspondence between the stratification of academic subjects and the social composition of schools is Gamoran (1987), who measured school characteristics with reference to the composition and offerings of schools. However, Gamoran treated both as independent variables that affect students' achievements and did not deal with the possible effect of composition on offerings.

Garet and DeLany (1988) studied the enrollment of students in different programs in mathematics and the sciences. After controlling for students' personal characteristics, they found a significant school effect and concluded that schools shape the opportunities of students to enroll in higher-level courses. Garet and Delany suggested that the school's social composition affects the availability of different courses. However, since they did not incorporate school composition into their analysis, this effect still remains to be established. Of particular value in this line of research is the ethnographic work of Anyon (1981a, 1981b), who studied American elementary schools composed of students from different social classes and reported that highly valued knowledge was offered only to upper-class students.

Sadovnik (1990:59) briefly reported similar findings in his research and concluded that "sociologists of education need to explore social-class differences in curriculum to understand better the ways in which school knowledge is a means of limiting or making available the official forms of knowledge that are valued in a society." Following this line of argument, I tested the hypothesis that schools that are characterized by higher-status students offer higher-status academic subjects by analyzing the availability of different school subjects in Israeli high schools that are differentiated by their ethnic composition. Before I discuss the data, I present a short review of relevant aspects of the Israeli educational system.

INEQUALITY IN ISRAELI HIGH SCHOOLS

The Israeli research on inequality in education focuses on the two major Jewish ethnic groups—Jews of European or American origin (hereafter called EuAm) and Jews of Asian or North African origin (hereafter called AsAf). AsAf, the educationally disadvantaged group, are characterized by lower achievement, overrepresentation in vocational education, lower rates of possession of the matriculation diploma (a prerequisite for higher education), and lower rates of enrollment in postsecondary education (Shavit 1990; Yogev 1981; Yogev and Ayalon 1986).

In Israeli research, the study of inequality in secondary education is restricted to the distinction between academic-vocational curricula and does not in-

clude school subjects as a possible source of inequality. This focus is probably a result of the centrality of tracking to ethnic inequality in secondary education (Shavit 1984). Most programs in vocational education, which absorbs about 50 percent of the Israeli high school students, are not matriculation oriented (Yogev and Ayalon 1991). Since AsAf students are overrepresented in vocational education, the impact of tracking on educational inequality is straightforward.

Curriculum Differentiation

Despite the centrality of tracking in structuring inequality, the Israeli educational system is an appropriate arena for studying school subjects as a source of educational inequality mainly because of the high degree of curriculum differentiation within academic programs. Curriculum differentiation in Israeli secondary education follows a reform introduced in the late 1970s. Before the reform, 11th-grade academic-track students were divided into strictly structured streams (*megamot*) and took the matriculation examinations accordingly. The reform eliminated the structured streams and enabled students to create their own combinations of subjects, enroll in the appropriate courses, and take the examinations for levels of subjects that they studied.

The high school curriculum is composed of compulsory and optional subjects, each of which is offered at different levels, usually ranging from one to five units. The number of units refers to the time devoted to the subject (one unit equals one hour a week for three years or three hours a week for one year), which corresponds, of course, to the subject's level and degree of difficulty. Except for English, which is compulsory at the four-unit level, subjects are compulsory only at their lower level (one to three units) and may be offered as optional at higher levels.

The matriculation diploma is composed of "internal" grades, awarded by the teachers, and external grades, based on the student's performance on standard national examinations. To qualify for a matriculation diploma, a student has to pass national examinations that total 20 units of study. A four- or five-unit optional subject is not a necessary component of the diploma. However, the universities demand at least one four-unit subject from their candidates and offer bonuses for each subject taken at the four- or five-unit level.[1]

Although students get a chance to select optional subjects, in practice their freedom in the process is limited because the Israeli educational system (both the academic and the vocational tracks) is characterized by institutional selection mechanisms.[2] Thus, despite the students' ability to choose optional subjects, the final decision is made by the school. Course taking depends on many factors, such as the student's scholastic ability and the school's policy, but a major factor is the supply of subjects available in the school. The Ministry of Education and Culture offers a wide variety of subjects at different levels. The schools are required to provide the compulsory subjects, but are free to choose among the optional ones. Hence, Israeli schools differ in the content and the level of the optional courses they offer, so students' choices are a priori restricted by the supply of courses presented in their schools, regardless of the students' personal traits.

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[1] In calculating a student's average achievement in the matriculation diploma, the universities add 10 points to the original grade (which is on a 100-point scale) for each four-unit-level subject and 20 points for each five-unit-level subject (provided that the original grade is at least 60). Mathematics and English receive higher bonuses—12.5 points for four units and 25 for five units. These bonuses are highly significant for the students, since the competition, particularly among candidates for the most popular areas of study, is fierce.

[2] Israeli students are usually assigned to ability groupings in junior high school, and sometimes even in elementary school. Ability grouping is the major determinant of track placement in high school (Yogev 1981). This fact has caused many Israeli scholars (Yogev and Ayalon 1986 and Yuchtman-Yaar and Samuel 1975), to refer to the Israeli educational system as bearing characteristics of sponsored mobility, in Turner's (1960) terms.

The study described here analyzed the correspondence between the supply of optional subjects in and the ethnic composition of schools. The major hypothesis is that schools that have a high proportion of AsAf students less frequently offer higher-status subjects, namely, scientific subjects and subjects representing high culture ("cultural-capital" subjects) than do schools with a high proportion of EuAm students.[3] This hypothesis is based on the general thesis that links school curriculum to students' characteristics. However, some elaboration on its connotation in the Israeli context is in order.

Status of School Subjects

As is true in the U.S. and European educational systems, scientific subjects are highly valued in Israeli secondary education. Scientific subjects, which are considered particularly difficult, are offered to and requested by students with the highest achievements and ability (Ayalon and Yogev 1994; see also Mandler 1992). School principals report that the availability of high-level scientific courses attracts able students (Mandler). Because of the correlation between ethnic origin and achievements in Israeli education, AsAf students are perceived as being less able and hence as being unlikely candidates for the demanding scientific subjects. The assumed capacities and interests of the population of students are probably among the factors that affect a school's choice of optional subjects. To clarify this last point, I elaborate next on the process of constructing the school curriculum.

Constructing the Curriculum

The major figure in constructing a school's curriculum is the principal. Although principals have a great deal of autonomy in choosing optional subjects, their relative independence with regard to the curriculum ends at that point. Since students have to pass standard national examinations in their higher-level optional subjects, instruction and evaluation in high school are controlled by the demands of the Ministry of Education and Culture.

In constructing the curriculum, the principal probably considers costs, the availability of teachers, pressure from parents, and so on. However, one major factor that guides his or her decisions is the wish to maximize the number of students who acquire the matriculation diploma on graduation. This factor is important because in addition to the obvious wish to see students succeed, an Israeli principal is guided by the fact that his or her success in running the high school and the school's prestige are judged by the proportion of diploma graduates the school has.

A school's success in preparing its students for the examinations receives a great deal of publicity; in many communities, the local media report on the percentage of students who passed the examinations in the various schools and rank the schools and principals according to that criterion. This publicity presumably intensifies the pressure on the principal to increase the percentage of students who receive diplomas.

Since all students who take a certain subject at the same level must take the same examination, schools develop various strategies in an attempt to control the process: They encourage less-able students to drop out, place academically weaker students in nonacademic programs, and permit less-able students to take examinations only in lower-level courses within subjects. These strategies obviously limit students' opportunities. Another strategy, which is more favorable to the students, is to offer higher-level courses in the subjects that correspond to the assumed capacities and interests of the students. Since decisions at the school level are based on perceptions of the capacities of the student body as a whole, it is likely that the scientific subjects, which are perceived as difficult and highly demanding, will be offered less often in schools with higher proportions of underprivileged students and that these schools will tend

[3] I am not referring to the academic-utilitarian distinction. Utilitarian subjects are offered primarily in vocational education, which I did not analyze in this study.

to include "easier" subjects in their curriculum.

Cultural-capital subjects are not considered particularly difficult. However, on the basis of American and European reports (Goodson 1992; Kliebard 1992) on the assumed irrelevance of high-culture knowledge to lower-status students, I hypothesized that these subjects are offered less frequently in AsAf-dominated schools than in EuAm-dominated schools because of their assumed irrelevance to AsAf students.

The American and European literature on the status of the cultural-capital subjects in the school curriculum focuses on the class factor. In the Israeli context, the picture is even more straightforward because of the prominence of the ethnic factor. The Western nature of the knowledge defined as high culture facilitates the image of this knowledge as irrelevant to youngsters who originate from Africa or the Middle East.

The analysis only of higher-status subjects is not sufficient. As was noted, a student who does not take any subject at its higher level is still entitled to the matriculation diploma. Consequently, schools do not have to offer subjects at the highest levels and can settle for a curriculum composed solely of lower-level subjects. Since AsAf students have lower academic performance and are not perceived as candidates for higher education, one may argue that AsAf-dominated schools tend to refrain from offering higher-level courses within subjects in general, regardless of content and prestige. To take this possibility into account and to consider this potential objection to the hypothesis that links the ethnic composition of schools to the offering of higher-status subjects, I analyzed two additional categories—subjects that are considered less prestigious (hereafter called "regular") and religious subjects. With regard to the regular subjects, I hypothesized that the ethnic composition of a school will have no effect on the probability that the school will offer these subjects to its students.

The second category, religious subjects, requires some clarification. Religious education, an integral part of the Israeli educational system, maintains an ideologically bound curriculum with particular emphasis on religious subjects, such as oral law, the Bible, and Jewish philosophy (Schwarzwald 1990). The scientific subjects are less central in religious education (Israel Central Bureau of Statistics 1989) probably because of conflicts between the scientific and the religious viewpoints. I hypothesized that owing to the strong ideological commitment to religious content, the ethnic composition of the school will bear no effect on the probability of offering religious subjects.

DATA AND METHOD

Data and Sample

The data are based on a survey of all 12th graders in academic programs that was conducted by the Israel Ministry of Education and Culture in 1989. In that survey, questionnaires were sent to the school principals, who were asked to provide information on the subjects studied by each student during all his or her years in high school and on each student's gender and ethnic origin. Eighty-five percent of the school principals responded to the questionnaire. The school-level data for the present analysis were aggregated from the individual-level survey.

The original data set consists of 208 Jewish schools that offer matriculation-oriented academic programs; seven schools that did not provide information on students' ethnic origin were excluded from the analysis. It should be pointed out here that only Jewish schools were studied because the Jewish and Arab educational systems are completely segregated and differ in many respects; hence there is no point in including them both in the same study.

Variables

The dependent variable is the availability of subjects in the school. School i is thought of as not offering subject j at level k if the data indicate that this subject has not been taken by any student in the school. Subjects taken by even one student (a hypothetical state in

the Israeli context) are considered to be offered.

The assessment of school offerings on the basis of students' course taking may raise the question of whether there is a correlation between the two; in other words, a subject that a school actually offers may be treated as not being offered simply because no student chooses to study it. This option is not probable in Israel because, as was noted earlier, course taking is regulated by the school. Since offering a subject involves investments in hiring teachers, obtaining the proper equipment, and so forth, the school makes sure to assign enough students to each subject it offers. Schools restrict the number of students they admit to the most popular courses, and those who are not allowed to take their preferred subject are offered other, less popular ones. Owing to this pattern, course taking is a reliable indicator of school offerings in Israel.

The present study analyzed 12 school subjects, out of the hundreds offered by the Ministry of Education and Culture. The subjects and their distribution are presented in Table 1. The subjects were chosen according to two criteria: their popularity as higher-level optional subjects and their assignability to one of the subject categories used in the study.[4]

Table 1. Distribution of School Subjects (N = 201 schools)

Subjects[a]	Mean	*SD*
Scientific		
Mathematics	.88	.33
Biology	.77	.42
Physics	.61	.49
Chemistry	.42	.49
Computer sciences	.19	.37
Cultural Capital		
Literature	.56	.50
French	.23	.42
Art	.09	.29
Regular		
Arabic	.33	.47
Geography	.29	.46
Religious		
The Bible	.49	.50
Oral	.31	.46

[a] Dummy variables: Coded 1 if the subject is offered at the highest level (4 or more units of study), 0 otherwise.

The definitions of mathematics, biology, physics, chemistry, and computer sciences as scientific subjects is straightforward,[5] and so are the definitions of the arts and literature as high culture (see, for example Kliebard 1992). French was included in the cultural-capital category on the basis of Israeli studies that report that French is perceived as linguistic cultural capital and as a highly valued resource (Ben-Rafael, Herzlich, and Freund 1990).

Arabic, which is categorized as a regular subject, is usually considered an alternative to French for students who choose to study a third language. However, the two languages are differently valued by students and parents (Kraemer 1990). Unlike French, Arabic is regarded as nonprestigious and of no importance as a means of communication (Ben-Rafael and Brosh 1991).

Geography is viewed as another regular subject. It can be defined as a default subject: Students do not choose it, but are forced to take it when they are not allowed to take a more popular subject. The lower prestige of geography may have historical roots. For a long time, and to some extent now, geography served as a means of cultivating the children's love for their country (Bar-Gal 1993). In the elementary school curriculum, geography was deprived of an academic image by being called *moledet*, which means homeland. Since an academic image is one of the sources of the prestige of school subjects (Goodson 1983), the nonacademic function of ge-

[4] History and social sciences, two popular optional subjects (higher-level history is offered in 37 percent and social sciences in 31 percent of the schools), were excluded from the analysis because of the lack of information on their status in the Israeli curriculum, which caused difficulties in categorizing them.

[5] The literature on school curriculum (see, for example Apple 1990) usually distinguishes between mathematics and the scientific subjects. Here, I follow the tradition of the Israeli educational system, defining mathematics as a scientific subject (see Israel Central Bureau of Statistics 1989).

ography may have resulted in its lower position in the hierarchy of subjects.

Knowledge of the Bible and oral law, which can be defined as religious cultural capital, has a special value in the religious sector, but is less valued among the nonreligious population. It is important to note that the content taught in the religious public schools is considered inferior to that taught in the special schools of orthodox Jews, which are not part of the public school system and are not included in the analysis.

The availability of most subjects is coded as a trichotomy: 1 = subject not offered at the school (for computer sciences, French, art, and Arabic, which are optional at all levels) or offered only at the lowest level (one or two units) (for chemistry, geography, the Bible, and oral law, which are compulsory at the lowest levels); 2 = subject offered at the three-unit level, but not at the four- or five-unit level;[6] and 3 = subject offered at the highest level (usually four or five units of study). For mathematics, literature, physics, and biology, which are offered at the three-unit level in all schools, the measures are dichotomized to 1 = subject offered at the highest level and 0 = all other options.

Explanatory variables. Four explanatory variables are included in the analysis. The major explanatory variable, school ethnic composition (hereafter %AsAf), is defined as the percentage of AsAf students among the 12th graders in the school. Although there was no information on the socioeconomic composition of the schools, the ethnic factor represents the socioeconomic factor to a large degree because of the high correlation between the two factors.

The additional explanatory variables—sector, sex composition, and size—serve mainly as controls. *Sector* is a dummy variable that distinguishes between regular public education (coded 1) and religious public education (coded 0). Of the 201 schools in the sample, 87 are religious.

Sex composition is defined as the percentage of male students (hereafter called % male) among the 12th graders in the school. Sixty-three of the 87 religious schools in the sample are single-sex schools (36 are all-female schools, and 27 are all-male schools).

Size, an indicator of school resources (see Kilgore 1991), is defined as the number of 12th-grade academic classes in a school. The descriptive statistics pertaining to these variables and their correlations are presented in Table 2.

Method

The relationship between school characteristics and the probability of a school offering a subject can be represented in a multinomial logit form (Maddala 1983). The probability that a school with characteristics x will offer the subject S_j at a certain level can be written:

$$P(S_j) = e^{bjx} / (e^{b1x} + e^{b2x} + e^{b3x})$$

The indices 1, 2, and 3 represent the three options—(1) subject not offered at the school or offered at the lowest level only; (2) subject offered at the three-unit, but not at a higher level; and (3) subject offered at the higher (four- or five-unit) level. b_j is a set of logit parameters corresponding to option j. Since the three options add up to 1, only two parameters can be estimated. Thus, option 1—subject not offered or offered at the lowest levels only—is set to 0 and serves as the base for comparison. For the four dichotomous subjects (mathematics, physics, biology, and literature), the analysis takes the form of a simple logit.

RESULTS

Table 1 reveals that scientific subjects are offered more often than all other categories of subjects. The evident inclination of Israeli high schools to offer high-level courses in scientific subjects is additional evidence of the dominance of this field of study. The lower figures for offerings of the cultural-capital subjects is in accordance with a general trend toward a decline in the time

[6] The three-unit level, which is optional for most subjects, is not acknowledged by the universities as a high level and is not entitled to any bonus.

Table 2. Descriptive Statistics and Correlations of Explanatory Variables

Explanatory Variables[a]	Sector	%Male	Size	Mean	*SD*
%AsAf	−.30**	−.03	−.24**	.45	.26
Sector		−.03	.41**	.57	.50
%Male			−.08	.39	.30
Size				3.44	3.05

[a] %AsAf = percentage of students of Asian and North African origin among 12th-grade students in a school. Sector = dummy variable, coded 1 if a regular public school, 0 if a religious public school. %Male = percentage of male students among the 12th graders in a school. Size = number of 12th-grade classes in a school.

** $p < .01$.

allocated to the humanities in the curricula of public schools (Kliebard 1992).

School Traits and Curriculum

The results of the logistic regressions are presented in Tables 3 and 4. Two equations were computed for each subject. The first, a reduced-form equation (Table 3), contains %AsAf as the only explanatory variable. The second, an extended equation (Table 4), adds sector, %male, and size as controls.

The reduced-form equations pertaining to the three-unit level reveal that for most subjects (except computer sciences and art) the ethnic composition of the school has no effect on the probability that they will be offered. Thus, access to this level is similar in all schools.

The ethnic factor emerges as a powerful predictor at the four- and five-unit

Table 3. Multinomial Logit Regression of Level of School Subjects on School Ethnic Composition (standard errors in parentheses)[a]

	Scientific Subjects						
				Chemistry		Computer Sciences	
	Mathematics[b] HL (n = 176)	Biology[b] HL (n = 154)	Physics[b] HL (n = 123)	LL (n = 25)	HL (n = 84)	LL (n = 108)	HL (n = 39)
Constant	3.94 (.58)	2.17 (.82)	2.17 (.35)	−1.55 (.52)	1.34 (.34)	1.41 (.36)	.71 (.44)
%AsAf	−3.69** (.85)	−2.04** (.64)	−3.70** (.68)	.46 (.84)	−3.42** (.74)	−1.50** (.63)	−2.28** (.87)

	Cultural-Capital Subjects				
		French		Art	
	Literature[b] HL (n = 112)	LL (n = 22)	HL (n = 47)	LL (n = 34)	HL (n = 19)
Constant	1.12 (.30)	−1.44 (.46)	.04 (.34)	−.56 (.37)	−1.05 (.47)
%AsAf	−1.96** (.58)	−1.23 (.95)	−2.62** (.80)	−2.20** (.87)	−2.47** (1.14)

	Regular Subjects				Religious Subjects			
	Geography		Arabic		The Bible		Oral Law	
	LL (n = 12)	HL (n = 59)	LL (n = 46)	HL (n = 67)	LL (n = 59)	HL (n = 99)	LL (n = 5)	HL (n = 62)
Constant	−1.81 (.59)	−.07 (.31)	−.65 (.38)	.66 (.33)	.00 (.39)	.41 (.36)	−2.21 (.83)	−1.98 (.35)
%AsAf	−1.29 (1.25)	−1.69** (.67)	.01 (.68)	−2.21** (.71)	.74 (.80)	.98 (.80)	−3.32 (2.61)	2.53** (.62)

[a] LL = lower level (three units of study), HH = higher levels (at least four units of study); N = 201 schools. All equations except the equation for the Bible are significant at the $p < .05$ level.

[b] A simple logistic regression; see explanation in text.

** $p < .05$.

Table 4. Multinomial Logit Regression of Level of School Subjects on School Characteristics (standard errors in parentheses)[a]

	Scientific Subjects						
	Mathematics[b]	Biology[b]	Physics[b]	Chemistry		Computer Sciences	
School Characteristics	HL	HL	HL	LL	HL	LL	HL
Constant	3.39	1.67	−.00	−3.28	−.60	1.-07	.37
	(.63)	(.63)	(.54)	(.96)	(.58)	(.55)	(.67)
%AsAf	−3.36**	−1.51**	−2.86**	−1.76*	−2.55**	−1.18*	−2.30**
	(.70)	(.70)	(.74)	(1.02)	(.90)	(.68)	(.91)
%Male	.35	−1.13*	.99*	−1.46	−1.92**	−.28	.83
	(.72)	(.54)	(.53)	(1.11)	(.81)	(.57)	(.66)
Size	.03	.27**	.33**	.21	.45**	−.01	.04
	(.09)	(.11)	(.11)	(.14)	(.11)	(.06)	(.08)
Sector	.31	−.06	.80**	2.14**	1.56**	.59	−.29
	(.51)	(.40)	(.37)	(.61)	(.45)	(.38)	(.40)

	Cultural-Capital Subjects				
	Literature[b]	French		Art	
	HL	LL	HL	LL	HL
Constant	−.18	−2.29	−2.17	−2.01	−1.80
	(.52)	(.79)	(.72)	(.74)	(.86)
%AsAf	−.87	−.45	−1.73*	−1.51	−2.11*
	(.71)	(1.04)	(.95)	(.96)	(1.19)
%Male	−2.94**	−1.80	−.09	−.08	−.14
	(.87)	(1.31)	(.89)	(.89)	(1.05)
Size	.16**	.15*	.27**	.10*	.06
	(.08)	(.09)	(.07)	(.06)	(.10)
Sector	2.35**	1.32**	1.23**	1.19**	1.32**
	(.45)	(.64)	(.50)	(.51)	(.63)

	Regular Subjects				Religious Subjects			
	Geography		Arabic		The Bible		Oral Law	
	LL	HL	LL	HL	LL	HL	LL	HL
Constant	−3.06	−1.81	−2.20	−1.89	−.06	2.17	−.17	−1.95
	(1.07)	(.62)	(.68)	(.68)	(.86)	(.76)	(.43)	(.90)
%AsAf	−.48	−.64	1.17	−.67	.82	−.05	−3.79	1.64
	(1.36)	(.78)	(.80)	(.92)	(.90)	(.88)	(2.85)	(1.12)
%Male	−.46	−.98	−.64	−2.39**	.41	−.51	−7.53	−4.20**
	(1.36)	(.84)	(.71)	(1.21)	(.90)	(.81)	(4.94)	(.80)
Size	.13	.16**	.07	.23**	.09	.16**	.16	.16
	(.10)	(.06)	(.10)	(.09)	(.08)	(.08)	(.15)	(.17)
Sector	1.07	1.64**	2.16**	3.12**	−.60	−2.76**	−.45	−5.90**
	(.75)	(.45)	(.47)	(.60)	(.56)	(.53)	(1.89)	(1.06)

[a] LL = lower level (three units of study), HH = higher levels (at least four units of study); N = 201 schools. All equations are significant at the $p < .05$ level.
[b] A simple logistic regression; see explanation in text.
* $p < .10$, ** $p < .05$.

level. The parameter estimates referring to the effect of %AsAf on the probability of offering all but the religious subjects at the higher level are negative and statistically significant. Hence, students in AsAf-dominated schools have less access to higher-level knowledge in all but religious studies. In the oral law equation, the statistically significant coefficient is positive, implying that this subject is offered more frequently in schools with higher rates of AsAf students. The probability of offering the second religious subject, the Bible, exhibits no sensitivity to school composition.

The results are clear at the descriptive level: Higher-level courses within subjects are offered less often by schools with higher rates of AsAf students. To what extent can this finding be attributed to the tendencies, revealed in Table 2, of AsAf-dominated schools to be both religious and smaller? To address this question, I turn to the multivariate analyses presented in Table 4.

For all five higher-level scientific subjects, the coefficients for %AsAf retain their statistical significance in the extended equation. For biology, chemistry, and physics, %AsAf coefficients in the extended equations are lower than in the corresponding reduced ones, indicating some intervening effect of the control variables. However, the change in magnitude is marginal. The impact of the control variables on the effect of %AsAf on the probability of offering mathematics and computer sciences is nil.

The inclusion of the control variables causes a reduction in the magnitude of the AsAf coefficient in all cultural-capital subjects. However, the reduction pertaining to French and art is relatively small, and the coefficients maintain statistical significance, though at a different level ($p < .10$). The results pertaining to literature are different. Here, the coefficient for %AsAf undergoes a particularly notable reduction in magnitude and loses its statistical significance. This finding implies that the lesser access of students in AsAf-dominated schools to higher-level literature is derived completely from the intervention of the control variables.

The uniqueness of literature among the cultural-capital subjects suggests that it has emerged as a special subject in the Israeli curriculum. The status of literature as part of high culture in Israel is beyond doubt. However, there seems to be a split between literature as a component of high culture and literature offered to students in school. Israeli studies (see, for example, Yaoz and Iram 1987) on the curriculum in literature have indicated that it stresses the emotional side of literature, not its intellectual and cultural aspects.[7] This process is not unique to Israel. For example, Kliebard (1992) claimed that English literature has undergone an internal transformation in the modern American curriculum.

The control of size and sector eliminates the effect of %AsAf in the equations pertaining to the regular subjects. Thus, the lesser access of students in AsAf-dominated schools to Arabic and geography stems from the fact that these schools are more often religious and smaller.

As was expected, the ethnic factor plays a marginal role regarding the religious subjects. The probability of offering the Bible is detached from the ethnic composition of schools in all analyses. As for oral law, the positive significant effect of %AsAf found in the reduced-form equation disappears in the extended one.

To summarize, the findings of the multivariate analyses usually corroborate the hypotheses: After the control variables are included, the results indicate that schools with higher proportions of AsAf students offer the highly valued scientific and cultural-capital subjects at the highest level less often than do the schools with higher proportions of EuAm students. This tendency cannot be attributed to sector, size, or the sex composition of the schools. As was just noted, literature is an exception. The ethnic factor lacks a net effect on the probability that schools will offer the less-prestigious Arabic and geography and the religious subjects. Ethnic origin, then, retains an independent effect only regarding the subjects that

[7] Literature teachers enjoy a great deal of autonomy in constructing the curriculum (Yaoz and Iram 1987). Thus, they may try to match the literary works they choose to the social profile of their students and not expose AsAf students to the highly valued literary works. Oakes (1985) reported that American students in different English tracks are exposed to different literary works. Although she referred mainly to within-school differences, the same logic may apply to between-school differences. This notion, of course, is speculative and requires further research.

represent more highly valued knowledge.

To complete this section, I briefly discuss the independent effect of size, sector, and sex composition. As expected, smaller schools limit their students' opportunities. Almost all subjects are offered more often in larger schools than in smaller schools.

Religious education is characterized by a limited curriculum, with a restricted supply of "secular" subjects. Regarding the analyses pertaining to higher-level courses within subjects, sector lacks a significant effect in the equations pertaining to mathematics, biology, and computer sciences only. Thus, the religious sector seems to adjust to the general demand for scientific subjects by choosing subjects that are, perhaps, less contradictory to the religious point of view.

The sex composition of the school also affects the availability of certain school subjects, usually in the expected direction. A higher percentage of female students increases the probability that the humanities will be offered. Regarding the scientific subjects, biology and chemistry appear to be "feminine," whereas physics and, to some extent, computer sciences appear to be "masculine."

CONCLUSIONS

The study demonstrates that several factors combine to reduce the access of students in AsAf-dominated schools to higher-level courses within prestigious subjects: the students' concentration in smaller schools, their overrepresentation in religious education, and an additional factor not captured by the two. What might be the meaning of such a factor?

I believe that this factor represents curricular decisions that are based on the assumed capacities and interests of the students. As I noted earlier, American scholars report that principals and teachers consider some subjects too difficult and others irrelevant for underprivileged students. The situation is probably similar in Israel and may, at least in part, reduce the access of students in AsAf-dominated schools to scientific and cultural-capital subjects. Thus, whether the schools do so intentionally or not, the socially valued knowledge is monopolized by the privileged ethnic group.

Although the consequences of the differential access of students to school subjects seem clear, there certainly are competing interpretations of the mechanisms that cause it. One can argue, for example, that some subjects are indeed difficult or irrelevant for AsAf students. To accept this argument, one needs an objective measure of the degree of difficulty and relevance of school subjects. Is such a measure available? The findings presented here point to the contrary. The socially constructed character of the definition of a subject as more difficult or less difficult and relevant is evident in regard to Arabic and French. Arabic is considered appropriate for AsAf students who originate from Arabic-speaking countries. However, those who plan curricula ignore the fact that many AsAf students originate from the French-speaking North African countries, and hence they offer French courses less often in AsAf-dominated schools than in EuAm schools. The prestigious and highly valued French seems irrelevant for AsAf students, who could benefit from studying a language at school that they are already familiar with.

Another interpretation of the differential offering of subjects is that the principals in AsAf-dominated schools respond to the students' actual or presumed educational plans and refrain from offering higher-level courses within subjects to students who do not plan (or are perceived as not planning) to go on to higher education. This argument may indeed explain why three-unit-level subjects, which are less significant in shaping students' prospects for higher education, are offered equally in all schools, regardless of their ethnic composition, whereas the ethnic factor is central in determining the availability of higher-level courses within subjects.

However, students' plans for postsecondary education cannot explain why the ethnic composition of schools, which has a substantial effect on students' access to the higher-status subjects, has

no effect on the less valued ones. Higher-level Arabic, geography, and religious studies are accepted by the universities in the same way as are other higher-level subjects and get similar bonuses. If students' educational aspirations fully explain the findings, why should the pattern for the less-valued subjects be different from that for the highly valued ones?

Differential geographic location may be suggested as an additional explanation of the findings. Jews of AsAf origin are overrepresented in small communities that are located away from the center of Israel (Shavit 1990). It may be argued that teachers are less available and that principals, who have to operate under these constraints, must settle for reduced offerings. Several findings cast doubt on this explanation. First, geographic location is probably captured, at least partly, by the size variable. Moreover, the inclusion of geographic district in the analyses (not presented here) resulted in no significant effect.

The explanation based on the availability of teachers becomes even less plausible when one refers directly to the different school subjects, such as geography and mathematics. The more limited access of students in AsAf-dominated schools to higher-level geography is fully explained by sector and size, whereas these factors are irrelevant for explaining the limited access to higher-level mathematics in the same schools. That both subjects are compulsory at the lowest levels implies that all schools employ both geography and mathematics teachers. Why should mathematics teachers, then, be less available on the periphery than should geography teachers? The same logic applies to Arabic and French, two optional subjects, and to physics and the Bible, both compulsory at the lower levels.

My interpretation of the findings is based on the paradoxical position of principals of Israeli academic high schools. Although they enjoy a great deal of autonomy in choosing optional subjects, the principals are strictly controlled by the Ministry of Education and Culture regarding the consequences of this choice. This control limits their freedom to the mere choice of subjects, but gives them no real option for affecting either instruction or evaluation. In their efforts to enhance the proportion of diploma graduates, principals have no alternative but to operate in the areas that provide them with a greater degree of freedom.

In this framework, the choice of offering higher-level courses within the optional subjects that correspond to the assumed abilities of the students seems a good strategy. Other strategies, such as refraining from offering higher-level courses in general, are obviously damaging to the students and do not heighten the prestige of the schools. Hence, in Israel the autonomy to construct the curriculum in the otherwise centralized system increases the inequality of the students' access to knowledge. Thus, it may be concluded that as long as schools are subject to centralized control via standard national examinations, tighter supervision of curricular decisions may be advantageous for educational equality. This tentative conclusion gets support from Stevenson and Baker's (1991) study, which found, on the basis of a comparison of 15 countries, that in educational systems with national control, the implemented curriculum (in this case, in mathematics) is related less to the characteristics of the students than it is in educational systems with local control.

The assumed effect of school autonomy on educational inequality, which may prove significant for the evaluation of the outcomes of school autonomy in general, is certainly valuable for the current debates over plans for decentralizing the Israeli educational system. Obviously, this study cannot convincingly substantiate the tentative linkage of educational inequality to issues of autonomy and control. Therefore, further research is needed to compare educational systems that vary in school autonomy and/or centralized control to gain better insight into the interplay between autonomy and control in affecting students' access to knowledge.

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