

# A COMPARATIVE STUDY OF THE OCCUPATIONAL STRUCTURE OF UNIVERSITY GRADUATES

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## I. THE EXPANDING SCOPE OF HIGHER EDUCATION IN THE WORLD

**T**ODAY THE NUMBER of students pursuing higher education is steadily increasing in many countries the world over. When did this trend first begin? Although the number of students expanded very rapidly after World War II, this tendency did not suddenly begin after the war. Taking the industrialized countries in the world, for instance, the number of students in higher education has increased continually since the middle of the nineteenth century. Figure 1 shows how students in higher education in Japan, the United States, and several European countries have increased in number since the earliest recorded data.<sup>1</sup> Of these countries, Germany has the earliest and most complete statistical data on the history of higher education. In Germany in the early nineteenth century, there were only three to four students in higher education per ten thousand inhabitants. After 1860, however, the number began to increase so remarkably that by 1900 it had reached the level of eight students per ten thousand inhabitants and twenty per ten thousand by 1920. Thus, the years from 1860 to 1870 were the big turning point in the history of the higher education in Germany. After this period, the number of students in higher education, which until then had remained stagnant or decreased somewhat, increased continuously, the only exception being the war years and the depression.

This increase, however, is not peculiar to Germany. Several European countries have also experienced the constant expansion of their student population in higher education since the mid-nineteenth century. England's "ancient universities" (Oxford and Cambridge) for example, recorded a constant increase of student enrollments in spite of the fact that the number of universities themselves increased much more slowly there than in other European countries. As seen in Table I, up until the early nineteenth century, the number of new students annually enrolled at Oxford and Cambridge remained between four hundred and seven hundred [9, p. 27]. In the year 1825, however, the number of new entrants suddenly rose to eight hundred and continued to increase rapidly thereafter. In 1880 the number

<sup>1</sup> All data used in this paper with the exception of Germany were taken from the statistical yearbooks published in each country. Information about Germany came from the following sources: [1] [3] [7]. Statistical data on Germany after 1950 applies only to West Germany.

Fig. 1. Historical Trend of Students in Higher Education  
(Per. 10,000 Inhabitants)

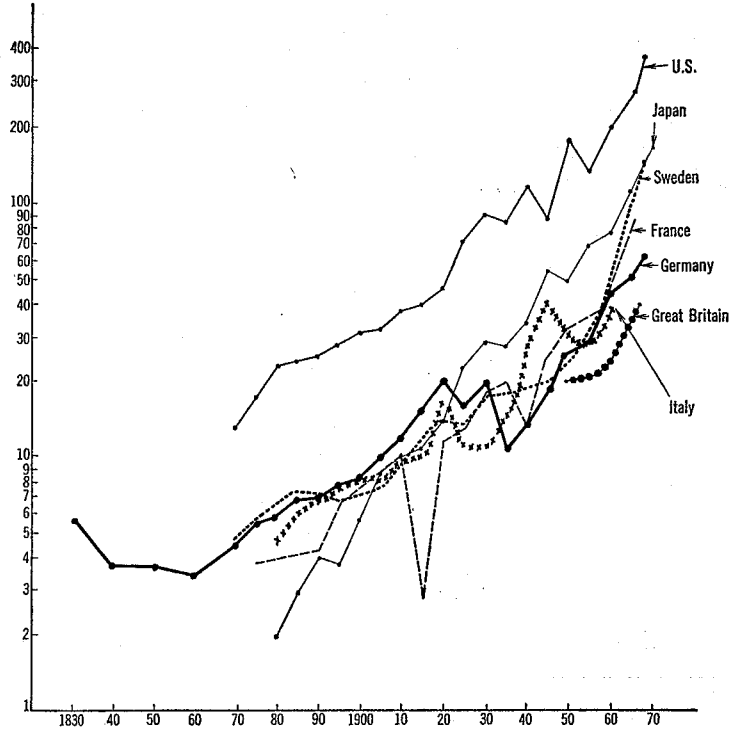


TABLE I  
HISTORICAL TREND OF THE NEW ENTRANTS IN OXFORD AND  
CAMBRIDGE UNIVERSITIES

	Oxford	Cambridge	Total
1602	331	285	616
1700	295	198	493
1750	190	127	317
1800	247	129	376
1825	401	446	847
1850	409	441	850
1882	777	954	1,731
1900	933	1,026	1,959
1912	1,134	1,323	2,457
1921	1,481	1,966	3,447

Source: [9].

of new students reached seventeen hundred and thirty-five hundred in 1921. Thus, for England as well as for Germany, the mid-nineteenth century was an important turning point in the history of higher education. In addition, during this period, new institutions of the higher education, generally known today as civic univer-

sities, were founded all over England. The history of higher education in England thus entered a new stage of growth after the middle of the nineteenth century in the number of both institutions of the higher education and their students.

Generally speaking, the worldwide trend in higher education today is toward greater expansion which began, as we have seen, about a hundred years ago. However, it is also true that the development of higher education after World War II was more spectacular than that of any other comparable period in history. Table II shows the average annual increase of the student population in higher

TABLE II  
THE ANNUAL AVERAGE INCREASE OF STUDENTS IN HIGHER EDUCATION  
(Per 10,000 Inhabitants) (%)

	1875-1900	1900-1925	1925-1950	1950-1968
Japan	5.3 <sup>a</sup>	5.7	3.1	6.2
U.S.	2.1	3.6	3.5	9.2
Great Britain	—	3.3	1.6	3.9 <sup>b</sup>
France	2.8	2.2	3.8	6.2 <sup>c</sup>
Germany	1.7	2.8	1.7	4.8
Sweden	1.0	3.2	1.7	10.1
Italy	3.3	1.4	4.0	—

Source: See footnote 1.

<sup>a</sup> From 1880 to 1900 only.

<sup>b</sup> University students from 1950 to 1967 only.

<sup>c</sup> From 1950 to 1966 only.

education (per ten thousand inhabitants) in seven countries since 1875. As this table indicates, the annual increase for these countries remained at only 2 or 3 per cent until 1950, the only exception being Japan before 1925. After 1950, however, every country in the table reached more than a 4 per cent annual increase reaching the peak in its history. Sweden, for instance, achieved a surprising 10 per cent increase. Needless to say, each country differs in the degree of expansion of higher education. In the United States for example, there are four hundred students in higher education per ten thousand inhabitants, while in Germany and England there are only forty to sixty students. However, in spite of the substantial difference in the absolute number of students, all seven of these countries recorded their peak increases after World War II.

Another point to be remembered is that during the postwar period the number of graduate students rapidly increased among the student population of the world. Since graduate schools on the European Continent are not systematically separated from undergraduate colleges, we shall limit our discussion only to the United States, England, and Japan.

In the United States, the number of graduate students today has reached a level of thirty per ten thousand inhabitants which is comparable to the number of students in higher education in European countries in 1950 (see Table III). On the other hand, England, where the number of students in higher education is low even for a European country, has at present eight graduate students per

TABLE III  
THE NUMBER OF STUDENTS IN GRADUATE SCHOOLS

	Japan		United States		Great Britain	
	Number of Graduate Students	Per 10,000 Inhabitants	Number of Graduate Students	Per 10,000 Inhabitants	Number of Graduate Students	Per 10,000 Inhabitants
1950	198	0.1	237,000	15.6	15,485	3.1
1952	2,726	0.3	233,000	14.8	16,490	3.3
1954	8,300	0.9	223,000	13.7	17,169	3.4
1956	12,030	1.3	250,000	14.9	18,597	3.6
1958	14,308	1.6			20,307	3.9
1960	15,437	1.7	342,000	19.0	24,070	4.2
1962	18,062	1.9	398,000	21.4	27,308	4.7
1964	24,145	2.5	479,000	25.0	33,444	5.6
1966	32,785	3.3	582,000	29.7	44,510	7.4
1968	37,661	3.7			48,813*	8.1
1969	39,423	3.8				

Source: *Statistical Yearbook* of each country.

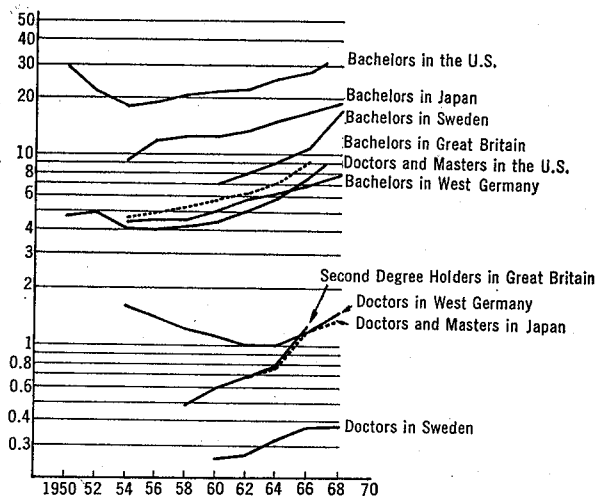
\* Data of 1967.

ten thousand inhabitants. Her graduate school population increased by 260 per cent between 1950 and 1968. The rate of increase for graduate students as against the entire student population in higher education, then, is 10 per cent for the United States and 20 per cent for England.

As we have seen, the rapid expansion of higher education seen in many countries after World War II actually consists of two different aspects: a "horizontal" expansion, i.e., the increase of students in higher education in a certain age group, and a "vertical" expansion, i.e., the development of graduate education. With respect to this latter development, it should be noted that today graduate education has begun to assume an independent role both in the educational system and in society as a fourth stage of education following the first-stage elementary education, the second-stage high school education, and the third-stage college or undergraduate education.

The expansion of higher education has naturally resulted in an increase in the number of those with professional qualifications. As seen in Figure 2, in the United States the number of those annually awarded bachelor's degrees exceeds thirty per ten thousand inhabitants, while in Sweden and Japan the number has reached nearly twenty per ten thousand. Even in England and Germany the number of those winning degrees of the first level is eight to ten per ten thousand inhabitants. Surprisingly, in all of these countries, the present figures are twice or three times as high as those of a decade ago. Furthermore, students with Ph. D.'s, M.A.'s, and other advanced degrees have increased rapidly in recent years. As seen in Figure 2, Japanese, German, and English figures for those with professional qualifications were about one and a half per ten thousand inhabitants in 1967. In the United States, where a well-developed graduate school system has been established, the number of students taking doctorate and master's degrees amounts to 180,000 annually or ten graduates per ten thousand inhabitants which

Fig. 2. Graduates Holding Bachelor's Master's and Doctor's Degrees (Per 10,000 Inhabitants)



is nearly equivalent to the number of students obtained degrees of the first level at higher educational institutions in England and Germany.

What do these facts mean in relation to the labor market problems of each country? Since it is generally acknowledged that the working population of a country is about 40–45 per cent of the entire population, it is estimated that the labor market of the United States must absorb annually new labor force qualified by the higher education which amounts to 0.7–0.8 per cent of the total labor force, while in Japan and Sweden the figure is 0.4–0.5 per cent, and in West Germany and England 0.2–0.3 per cent. An increasingly large number of graduates of higher education are now appearing on the labor market of each country.

What occupational fields do these graduates enter? Does the answer to this question differ from country to country or is it the same worldwide? What is the difference between the occupational structure of university graduates in those countries with large student populations in higher education such as the United States, Canada, and Japan, and those countries with only a limited number of students in higher education such as the European nations? These are the problems we will consider next.

## II. THE OCCUPATIONAL DISTRIBUTION OF UNIVERSITY GRADUATES

Both in the United States and Europe most university graduates traditionally entered professional occupations such as the priesthood, public office, or became judges, lawyers, doctors, secondary school teachers, and university professors. This tradition continued up until the nineteenth century. At that time, these occupations were not considered mutually exclusive or independent of each other.

The boundary of each profession being quite fluid, it often happened that a public official would become a lawyer and finally a university professor. Traditional professions were thus considered as one category or as a characteristic feature or symbol of the privileged social classes.

On the other hand, there were considerable differences between countries as to which particular profession attracted the most university graduates. In the United States, for instance, university graduates rarely pursued careers related to public administration, while in Germany most graduates became public administrators. In general, however, it is clear that occupational choice was limited to traditional professional or administrative careers.

This tendency is best seen if we examine historically the occupational distribution of graduates of Cambridge University [2]. Up until the early nineteenth century, most Cambridge graduates (60 per cent) entered the priesthood. The next largest group entered the landowning class or local aristocracy, both classified in Table IV as landlord. Almost no Cambridge graduate entered civic professions

TABLE IV  
OCCUPATIONAL DISTRIBUTION OF CAMBRIDGE UNIVERSITY GRADUATES: 1752-1938  
(%)

Occupations	Graduates during 1752-1799	Graduates during 1800-1849	Graduates during 1850-1899	Graduates during 1937-1938
Public administration	3	1	6	10
Banking and business	0	0	7	31
Church	60	62	38	6
Landowners	14	14	7	0
Law	6	9	14	11
Medicine	1	2	7	12
Teaching	9	9	12	16
Others	7	3	9	14
Total	100	100	100	100

Source: [2].

such as managers of banks or private enterprises. Most Cambridge graduates, then, either followed traditional religious callings or were absorbed into the traditional privileged class living on family inheritances. There were always enough high social positions available for the graduates of Cambridge even including those who joined governmental or religious organizations to insure the enjoyment of a social freedom unknown to most common people. This situation continued until the late nineteenth century, when significant changes began to effect social standings. After the late nineteenth century, the number of Cambridge graduates becoming priests and landlords decreased, while those entering modern occupational fields such as medicine or education began to increase rapidly. Behind this new turn of events was a fundamental change in the structure of society itself—the decline of the upper class (mostly priests and landlords) which presupposed a certain cultural personality (“gentlemanship”) more closely related to a man’s cultivated behavior

than to his accumulated specialized professional or technical knowledge; and the rise of independent professionals and technicians (lawyers, doctors, etc.), positions which demanded a specialized knowledge to be of use to clients or organizations. During the last half of the nineteenth century, then, traditional occupational fields lost their significance in society where a university graduate's social background (character, behavior, values, etc.) had been valued more than his professional or technical knowledge and where a dignified, aloof bearing, awed and respected by the common people, was highly desired. Instead, society began to demand professional and technical knowledge of university graduates. As this trend developed, more and more university graduates came to find positions within industrial organizations of some sort and, giving up their traditional aloofness and freedom, established their standing as modern professionals more or less dependent on employers.

This historical change is easily illustrated by looking at the occupational distribution of Cambridge graduates in 1937. As seen in Table IV, some 30 per cent of Cambridge graduates were employed in companies and banks. This means that unlike earlier graduates who entered the priesthood or landowning class and the late nineteenth century which highlighted self-reliant professionals such as doctors and lawyers, most Cambridge graduates in the twentieth century have entered professional or technical careers within organizations. This kind of change has occurred in many other countries as well, although the tempo of change has varied from one society to another.

Next we shall look briefly at the occupational distribution of Japanese university graduates in the late nineteenth and the early twentieth centuries. In 1877, the first modern university was founded in Japan. In 1886 this university, located in Tokyo, was renamed Tokyo Imperial University and together with the Imperial University founded in Kyoto in 1897 began to play a central role in the modern history of Japanese higher education. Table V shows the occupational distribution of Tokyo Imperial University graduates from 1877 to 1905. During this period,

TABLE V  
OCCUPATIONAL DISTRIBUTION OF TOKYO IMPERIAL UNIVERSITY  
GRADUATES: 1877-1905

	(as of 1905: %)						
Departments Occupations	Law	Medicine	Technology	Literature	Sciences	Agriculture	Total
Public officials	63.5	4.5	40.8	3.5	19.6	58.0	34.9
Teachers	5.3	14.1	9.0	89.9	75.5	24.6	25.5
Hospital doctors	—	51.1	—	—	—	9.0	10.3
Independent doctors and lawyers	9.2	29.2	—	—	—	0.5	7.6
Employees of private enterprises	17.4	1.1	44.1	0.6	3.6	2.6	17.5
Others	4.6	0.1	6.1	6.0	1.2	5.3	4.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Report of Ministry of Education, 1906.*

some sixty-five hundred graduates were turned out, and the occupations of 4,841 graduates were known at the time of research in 1905 (see Table V).

As Table V suggests, most Tokyo Imperial University graduates took positions in public administration. This is due in part to the fact that Japanese society did not have established social groups such as priests or landlords like Great Britain and in part because Tokyo Imperial University together with other imperial universities in Japan were founded for the purpose of training public officials. From 1877 to 1905, 35 per cent of university graduates became public officials and most of them high officials. After public officials came teachers of secondary schools and professors in universities which account for 26 per cent of the total. At that time, Japan was in the process of establishing a modern educational system for the nation, and teachers educated and trained at modern universities were in great demand.

The third occupational field entered by Tokyo Imperial University graduates was private enterprise. A great number of students in the Department of Technology (44 per cent) were absorbed into this field. Eighteen per cent of university graduates became employees in private enterprises. Japan at this time was very eager to modernize in a short period and overcome her late start in catching up with the advanced nations and university graduates were badly needed in every sector of society. Thus, contrary to Great Britain where a large number of university graduates found independent professional employment as doctors or lawyers, most Japanese university graduates were absorbed into company organizations, governmental and private. Positions within these organizations, however, were professional or administrative and qualify as either professional and technical occupations or administrative, executive, and managerial occupations according to the presently widely-used International Standard of Occupational Classification.

It is, however, no longer possible for Japanese society to offer all of her university graduates, who are constantly increasing, professional or administrative positions. Today approximately 240,000 graduates are turned out annually by four-year universities all over Japan; only 42 per cent pursue professional and technical occupations or administrative, executive, and managerial occupations. On the other hand, clerical or sales occupations rank first, drawing 55 per cent of all graduates today.

Thus in Japan as well as in Europe and the United States, modern society no longer requires the cultural refinements idealized and demanded by nineteenth century society but instead expects university graduates to serve society with their specialized professional and technical skills. Furthermore, as society becomes more industrialized and as its various organizations and enterprises become more systematized and expand, fewer chances are given to university graduates hoping to work as independent professionals or technicians. Consequently, most university graduates in modern society are forced to sell their professional or technical skills to certain organizations. In this sense, the modern age is indeed the age of the "organization man."

What happens to the occupational structure of university graduates as the



modernization of society advances? This is the problem most of the advanced nations in the world have been facing for some time. As previously mentioned, in many countries the number of graduates in higher education is now increasing at rate that has no parallel in history. This rate exceeds the needs of the technical and professional world toward which university graduates were long directed and also the rate of retirement from these professions. As a result, the occupational distribution of graduates of higher education has changed once again in many countries.

In the next chapter we will examine this situation by comparing the rate of change in the occupational structure of several different countries.

### III. THE EMPLOYMENT OF UNIVERSITY GRADUATES IN LOW-STATUS OCCUPATIONS

Few comparative studies have been conducted so far of the occupational distribution of university graduates. This is due primarily to the fact that adequate data for a worldwide comparison were not available before 1968 at which time the OECD published statistics and analyzed each occupational group (classified according to the International Standard of Occupational Classification) by educational background. This report has become the standard work in this field, and it is now possible for us to develop our analysis in more depth.

We shall now examine the present world occupational distribution of university graduates. Table VI shows the occupational distribution for the graduates of nineteen nations.<sup>2</sup> It should be noted that the ratio of graduates of higher education to the working population varies greatly from one country to another.

In European nations it is roughly 3-4 per cent, while in the United States it is 19 per cent, in Canada 10 per cent, in Japan 7 per cent, and in the Philippines 6 per cent. In other words, in these last four countries, higher education is much more available to the general population than in other countries. Consequently there are more graduates of higher education.

As seen in Table VI, in most of the countries examined 70-80 per cent of graduates find employment in professional and technical occupations. The only exceptions are the United States, Canada, Japan, the Republic of Korea (South Korea), and the Philippines. In these countries, graduates with professional and technical skills are only 40-50 per cent of the total. As already mentioned, with the exception of South Korea, these countries produce a far greater number of university graduates than most other countries in the world. What kind of correlation, then, can be found between graduates of higher education and the working population on one hand, and the number of graduates entering professional and technical occupations compared with the number of total graduates on the other? Figure 3 gives us the answer. With the exception of South Korea, nineteen countries clearly fall into two groups. The first cluster consists of those countries where

<sup>2</sup> [4]. Since these data do not include West Germany the following source was used to fill out the table: [8].

OCCUPATIONAL STRUCTURE

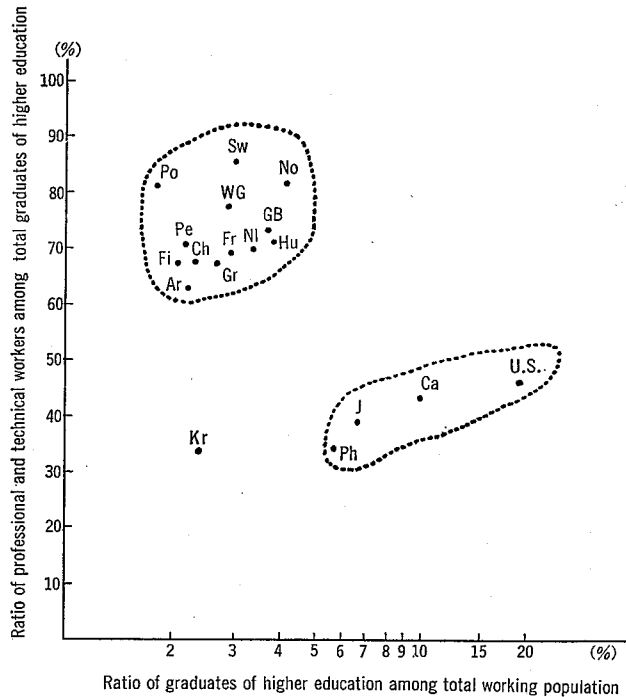
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TABLE VI  
OCCUPATIONAL STRUCTURE OF THE GRADUATES OF HIGHER EDUCATION IN 1960

Countries	Operations	Professional, Technical	Administrative, Executive, Managerial	Clerical, Sales	Farmer, Craftsman, and Production Workers	Armed Forces	Total	% of Graduates of Higher Education among Whole Labor Force	GNP Per Capita
1. France		67.0	14.3	10.1	5.6	3.0	100.0	2.7	1,320
2. Great Britain		72.9	6.3	8.9	10.3	1.6	100.0	3.7	—
3. Netherlands		69.4	13.4	9.4	2.9	5.2	100.0	3.4	1,040
4. Sweden		84.8	10.4	3.1	1.7	0.1	100.0	3.0	1,510
5. Norway		81.1	11.0	2.3	2.5	3.2	100.0	4.1	1,330
6. Finland		67.3	21.5	9.1	2.0	0.1	100.0	2.1	—
7. Portugal		81.2	5.4	5.5	1.4	7.4	100.0	1.8	250
8. Greece		68.8	7.5	10.0	4.2	9.5	100.0	2.9	370
9. Hungary		70.5	8.2	12.5	8.8	0.0	100.0	3.8	650
10. Chile		67.4	6.0	16.7	7.1	2.8	100.0	2.3	590
11. Argentina		62.6	8.0	9.8	22.6	0.0	100.0	2.2	510
12. Peru		70.4	9.9	14.8	4.0	0.5	100.0	2.2	190
13. U.S.		46.1	11.1	23.9	18.8	0.1	100.0	18.6	2,570
14. Canada		41.5	8.7	28.6	19.5	1.7	100.0	10.3	1,800
15. Japan		38.6	11.2	36.1	24.1	0.0	100.0	6.7	370
16. Korea (S)		33.4	6.1	30.0	30.4	0.0	100.0	2.4	130
17. Philippines		34.3	7.6	33.9	22.7	1.4	100.0	5.7	150
18. Thailand		48.2	5.6	14.9	31.6	0.0	100.0	0.4	—
19. West Germany		76.5	16.4	7.0		0.0	100.0	2.9	—

Source: [4].

Fig. 3. National Educational Standards and the Occupational Structure of Graduates of Higher Education



university graduates are less than 4 per cent of the working population and where 70–80 per cent are engaged in professional and technical occupations. The second cluster consists of those countries where graduates amount to over 6 per cent of the working population, only 40–50 per cent of them being engaged in professional or technical occupations. There is quite a big difference, then, between the first cluster which could tentatively be categorized as having low educational levels, and the second cluster which we might categorize as having high educational levels.

Taking the United States as representative of the second group, 19 per cent of the working population are university graduates while professional and technical workers are only 8 per cent of the total working population; those engaged in administrative, executive, and managerial occupations are a mere 6 per cent. If these two occupational groups are added together, the total amounts to only 14 per cent of the entire working population. Consequently, even if all the jobs in these two groups were monopolized by university graduates, one quarter of the graduates of higher education in the United States would still be left out. A similar situation is found in Japan where professional and technical occupations account for only 5 per cent of total jobs while the number of graduates of higher education amounts to 7 per cent of the total working population. Some 30 per cent of university graduates, then, would be left out even if all professional and technical jobs were entirely monopolized by them. On the other hand, administrative,

executive, and managerial occupations form 2 per cent of the total jobs in Japan. Added to the first group, the number barely equals the total number of university graduates in the country. This is the basic structure of societies with high educational levels typical of countries such as Canada, South Korea, and the Philippines.

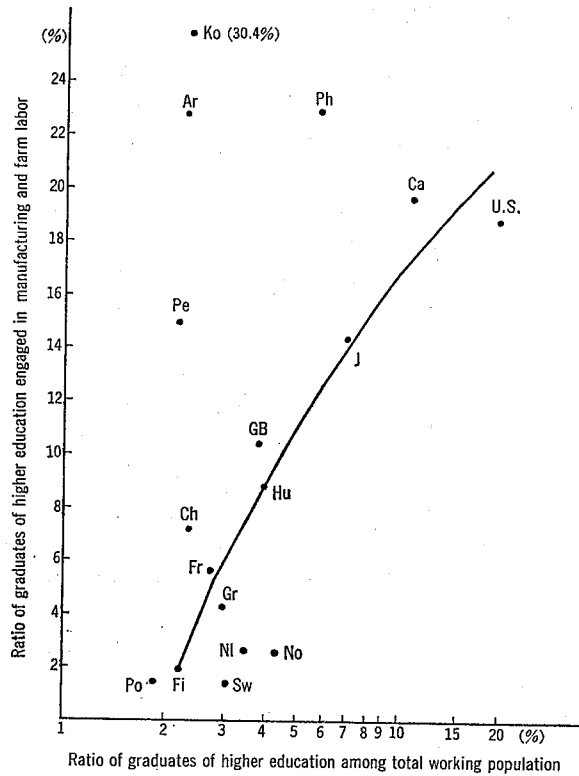
European nations are typical examples of the second group, i.e., societies with low educational levels. The ratio of university graduates to the total working population in most European countries remains low (3-4 per cent), while professional and technical jobs account for 9-11 per cent of total occupations. Therefore, even if all university graduates in European society held professional or technical jobs, some positions would still be left open to people with other educational backgrounds. Furthermore, the administrative, executive, and managerial occupations account for 12-13 per cent of total occupations in Europe. Thus, taken together, quite a large number of the high-status jobs remain open to people with lower educational backgrounds. Thus, it is characteristic of the occupational structure of societies with low educational levels that some number of its professional, technical, and managerial occupations must be filled by people with other than higher educational backgrounds.

To summarize, the number of high-status occupations (professional, technical, and managerial) open in one society is rather limited and is about the same in societies with both high and low educational levels. This means that the ratio of high-status jobs is not necessarily greater in the former type of society nor especially limited in the latter type. Consequently, in societies with high educational levels, some university graduates are forced to seek jobs outside privileged professional fields.

Where do these graduates go? The answer is easily seen from the example of Japan. Many of these graduates enter clerical and sales occupations and take other jobs related to the production and manufacturing process. In Japan, for instance, 36 per cent of all university graduates are now engaged in clerical and sales occupations. This figure tops all nineteen nations studied. The United States and Canada follow next with a figure of 24-29 per cent, while in Western Europe the rate remains a significantly lower 10 per cent. Also characteristic of these countries is the increasing number of university graduates taking blue-collar jobs. This tendency is most obvious in Canada where 20 per cent of university graduates now work as manual laborers, followed by the United States with 19 per cent. In Japan 14 per cent are engaged in jobs related to the production and manufacturing process and farming. In Europe, on the other hand, the number of university graduates engaged in these occupations has never exceeded 6 per cent of the total. Figure 4 shows the correlation between the number of university graduates employed as manual laborers and the total number of university graduates, in each country. With the exception of South Korea, Argentina, the Philippines, and Peru, it is generally recognized that as the percentage of university graduates among the total working population increases, the proportion of those graduates taking blue-collar jobs also increases.

In the four countries that are exceptions, there are a large number of university

Fig. 4. Increase of Blue-Collar Graduates of Higher Education



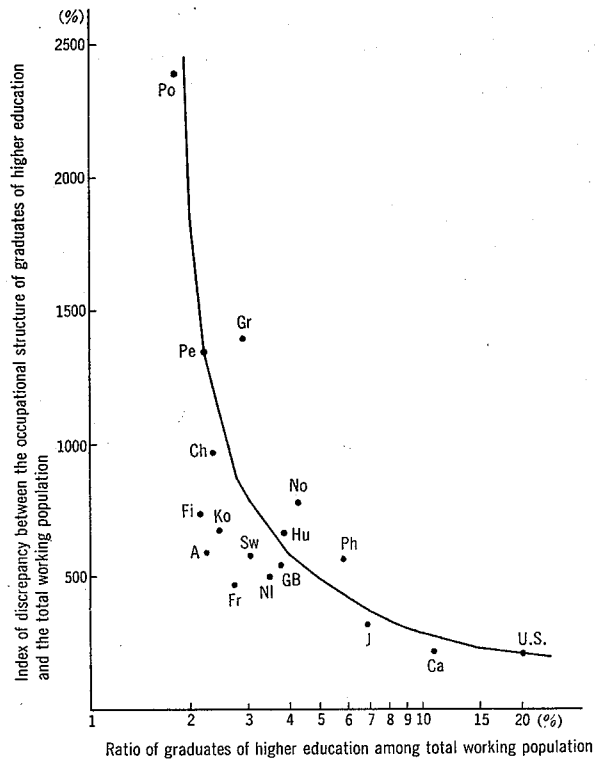
graduates with blue-collar jobs. In South Korea, for instance, some 30 per cent of the entire university graduate population are employed as manual laborers, one-third of this figure in farming. Similarly, in Argentina, 22 per cent occupy blue-collar jobs, one-third of which are related to the production and manufacturing process. There is, then, some correlation between the level of a society's economic development and the number of the blue-collar university graduates. However, a detailed analysis of the economic factors involved is beyond the scope of this paper. The following points, however, should be noted in this context: (1) all of the countries mentioned above except Argentina are still suffering from underdevelopment, their per capita GDP being less than \$200; (2) whether a society shows potential for economic development or not has a great deal to do with the increase of professional, technical, and other high-status occupations which greatly influences the occupational distribution of university graduates.<sup>3</sup>

As mentioned earlier, the occupational distribution of university graduates loses

<sup>3</sup> While the author was writing this paper, the following reports were published by the OECD: [5] [6]. These reports are based on the same data as our own. It therefore seemed worthwhile comparing our findings with theirs, although the analytical standpoint differs slightly from our own. This was not possible however, due to lack of time. We hope to take up this comparison at another time.

many of its traditional characteristics and becomes substantially similar to other occupational structures in societies with high educational levels. Here, equality of job choice is promoted and university graduates are deprived of traditional privileges and enter fields other than traditional white-collar jobs. Figure 5 shows this trend

Fig. 5. The Occupational Structure of Graduates of Higher Education and the Total Working Population



in various societies.<sup>4</sup> As seen in this figure, in societies with low educational levels such as Portugal and Greece, the occupational structure of university graduates is still significantly different from that of the total working population and is skewed toward professional, technical, or managerial occupations. On the other hand, in societies with high educational levels such as the United States, Canada, and Japan, occupational equality is rapidly appearing, and university graduates are losing their privileged status.

<sup>4</sup> The index of discrepancy used here was calculated as follows:

If we represent the occupational distribution of the working population as  $P_1, P_2, P_3, \dots, P_n$  (per cent), and the occupational distribution of university graduates as  $Q_1, Q_2,$

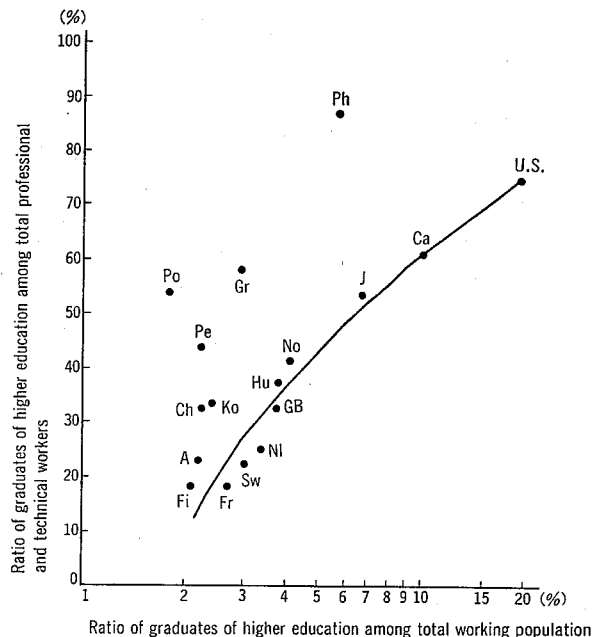
$Q_3, \dots, Q_n$  (per cent), then the index of discrepancy is  $\sum_{i=1}^n \frac{(P_i - Q_i)^2}{P_i}$ .

#### IV. THE MONOPOLY OF HIGH-STATUS OCCUPATIONS BY UNIVERSITY GRADUATES

University graduates today have lost the privileged occupational status they used to enjoy, as higher education has continued to expand and send out larger numbers of graduates into society. Thus, the number of those engaged in blue-collar occupations is rapidly increasing in societies with high educational levels. This is, however, not the only outstanding feature of these societies. Another characteristic feature is that both professional and technical occupations and administrative, executive, and managerial positions are more and more being exclusively occupied by university graduates. In spite of the fact that university graduates are closing their traditional privileges as their numbers increase, it is even more difficult for people with lower educational backgrounds to occupy the occupational positions mainly held by graduates. These two features, the trend toward occupational equality and the development of a monopoly by university graduates over professional, technical, and managerial occupations are both characteristic of societies with high educational levels, however contradictory they may appear to be.

Figure 6 shows the percentage of professional and technical occupations occupied by university graduates in each society. In societies with low educational levels, the rate is between 20 and 40 per cent, while in the United States the rate increases to 75 per cent, in Canada to 60 per cent, and in Japan to 53 per cent. In the

Fig. 6. Educational Background of Professional and Technical Workers



Philippines, the rate is as high as 90 per cent. In Figure 6, most countries with the exception of Portugal and Greece fall along one continuum. (The exceptions will be considered later.) Thus, as a society comes to support a larger highly educated population, a higher proportion of its professional and technical occupations come to be occupied exclusively by university graduates, and others with lesser qualifications are given fewer opportunities. In societies with low educational levels, however, occupations are open to those with lower educational backgrounds as well. In other words, in these societies, higher education is not necessarily the only gate to high-status occupations, but various opportunities are given to people hoping to acquire the necessary qualifications for these jobs as well. Naturally, occupational discrimination by educational background is much less obvious in these societies.

What, then, is the situation in the two exceptions, Portugal and Greece? Though their student population in higher education is only a small percentage of the working population, the number of professional and technical occupations held by the well educated is extraordinarily high compared with other European nations. This is primarily due to the fact that these two countries have less well-developed, smaller professional and technical fields easily filled by university graduates. A similar situation exists in Chile and Argentina.

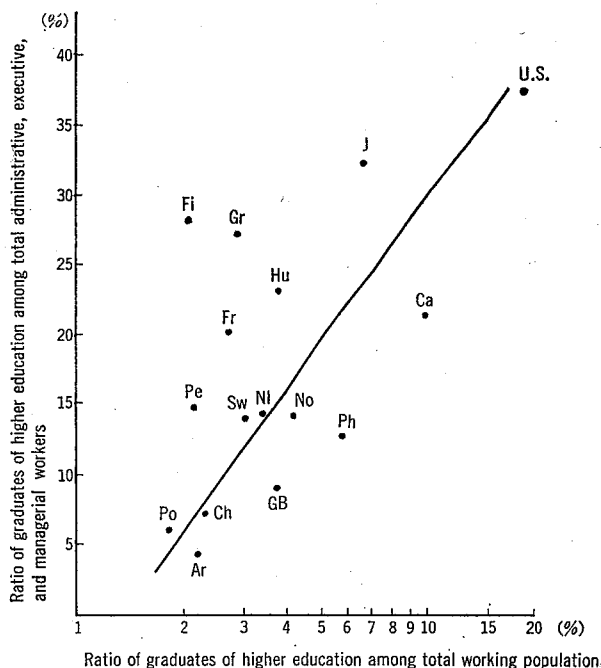
Two tendencies manifest themselves, then, in societies with low educational levels: (1) the trend toward occupational equality without regard to educational background which is typical of those countries where professional and technical occupations are well developed and where various routes besides higher education are open leading to these occupations; (2) the trend toward monopolization of professional and technical jobs by university graduates seen in those countries where neither higher education nor professional or technical occupations are fully developed. This is the main difference between Portugal and Greece and the other European countries.

Next we shall examine administrative, executive, and managerial occupations. (See Figure 7.) Here we must ask whether monopolization by university graduates is also evident in this occupational group. This situation is not as clear-cut as professional and technical occupations. However, it is generally admitted that in a society with a high educational level, the percentage of university graduates in these occupations also increases. In the United States, one of the most typical societies with a high educational level, some 40 per cent of this occupational group are university graduates, and those with other educational backgrounds have very little choice. Similarly, in Japan about 32 per cent of this occupational group are university graduates. On the other hand, in countries such as Portugal, Argentina, and Chile, most of the administrative, executive, and managerial occupations (90 per cent of the total) are occupied by non-university graduates. In these countries, this occupational field is said to be very open with respect to educational background.

European nations, on the other hand, are rich in variety and include both discriminatory societies (Finland and France) and open societies (England and Norway).



Fig. 7. Educational Background of Administrative, Executive, and Managerial Workers



What, then, accounts for the relatively high rate of administrative, executive, and managerial occupations followed by university graduates in countries such as Finland, Greece, France, Hungary, and Japan? This question can be answered only after a careful study of the conditions in each country.

## V. THE SOCIAL STRUCTURE OF MASS EDUCATION SYSTEM

To summarize briefly, as a society raises its overall educational standards (i.e., attains a high educational level), university graduates tend to lose their traditional social privileges and their occupational structure comes to resemble more closely that of the total working population. Although it may seem contradictory, at the same time, higher white-collar jobs tend to be monopolized by university graduates. In other words, university graduates are being deprived of traditional privileges on one hand and offered new status on the other. This also means that for access to privileged occupations, higher education is no longer just a desirable condition but one of the indispensable requirements.

How, then, does it happen that some university graduates secure privileged positions while others are forced into blue-collar occupations? What factors are working to bring about this distinction?

There appear to be three different factors influencing this distribution. First, higher education is functionally dividing into a graduate-level and undergraduate-

level hierarchy, each level having its own particular occupational distribution function. The students in each level pursue different occupational careers. Second, it appears that undergraduate colleges ascribe different importance to their various departments. Those studying in certain departments (usually law, medicine, and technology) find professional jobs while others are employed in non-professional fields. Third, this distinction stems from the ranking of universities in informal hierarchies where only the graduates of high-status schools find employment in professional and technical fields.

The first factor is best understood if we look at the United States. As mentioned earlier, the United States has 19 per cent of its university graduates employed in blue-collar jobs. Table VII shows the occupational structure for each type

TABLE VII  
OCCUPATIONAL DISTRIBUTION OF GRADUATES OF HIGHER EDUCATION  
IN THE U.S.: 1960

Occupations	(%)		
	1 to 3 Years of College	4 Years of College	5 Years or More of College
Professional, technical	22.4	50.3	74.4
Administrative, executive	11.9	15.5	9.1
Clerical, sales	34.5	12.6	8.0
Others	31.5	21.6	8.5
Total	100.0	100.0	100.0
Ratio to the whole workers	(10.1)	(5.3)	(3.8)

Source: [4].

of university and college graduate in the United States. Graduates are divided into three groups according to the number of years of college. It should be pointed out that junior college graduates (one to three years of college) have quite a different occupational distribution from graduate school graduates (five years or more of college). Only 22 per cent of junior college graduates are holding professional or technical occupations, while 30 per cent work in blue-collar jobs. On the other hand, 74 per cent of graduate school graduates hold professional and technical jobs while only 9 per cent are working in blue-collar jobs. The occupational structure of graduate school graduates is similar to that of university graduates in European countries.

Thus, among university graduates in the United States, only the most advanced group compares to European university graduates in the percentage of those entering professional and technical fields. In addition, this group represents 4 per cent of the total working population in the United States, which is roughly equivalent to European figures for university graduates.

To summarize, then, higher education in the United States has now been divided into three levels: junior college, four-year undergraduate college, and graduate school. Those at the lowest level have been deprived of the privileges formerly enjoyed by university graduates, and those at the highest level hold most of the professional and technical jobs in the society. In the United States, then, vertical

diversification within higher education has greatly influenced the occupational distribution of graduates.

Unfortunately, we do not have sufficient data at present to examine the second and the third factors influencing the occupational distribution of university graduates. However, both factors—i.e., the horizontal differentiation of higher education and the hierarchical ranking of universities—are familiar to those of us living in Japan and possibly to most readers abroad.

In conclusion, the following point seems worth repeating: a society with a high educational level contains within itself two apparently contradictory but essentially complementary tendencies, i.e., a tendency toward occupational equality irrespective of educational background, and a tendency toward the more exclusive monopoly by university graduates of privileged, professional, technical, administrative, and managerial occupations.

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