to that hypothesized. In the case of naturalization, for example, there is some reason to believe that new immigrant groups had higher average naturalization rates during the heyday of immigration to the United States after group differences in length of residence are taken into account. [37] We have already referred to a re-examination of data from the influential Dillingham Commission study in which Handlin found their data did not support the assertions of greater social problems among new immigrant groups. Our study of immigrants in Australia supports the possibility that old-new differences in the United States were due to the fact that the old groups were first established in sizable number in the nation.

An alternative interpretation of these results might be that the conditions of settlement in Australia, despite the country's western development, are significantly different from those of the United States in an earlier era and therefore the old-new theory is not relevant. This of course has implications for the distinction when it is applied to the United States. For if the dichotomy is applicable to the immigrants of one country but not another, the question is raised of what conditions account for its relevance in some circumstances. Although it is possible to interpret the Australian results as due to changes in either the conditions of international migration or in a decline in cultural dissimilarities between European groups, this investigator is inclined to interpret the findings as suggesting that differences between old and new groups—in the extent their cultures approximated early settlers of the United States—has been overemphasized at the expense of considering the importance of timing of arrival.

In brief, although northwestern Europeans differ from southeastern and central European immigrants to a statistically significant degree in three of the 14 demographic variables examined, this study fails to support the broad theory of old groups' superiority developed for immigrants to the United States around the turn of the century.

[37] John Palmer Gavit, *Americans by Choice,* New York and London: Harper and Brothers, 1922, Chapter 8; Lieberson, *op. cit.,* pp. 141–146.

VALUES, DEMAND AND SOCIAL MOBILITY

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If industrial societies in fact institutionalize universalistic-achievement values in the area of social mobility to a greater extent than pre-industrial societies, one would hypothesize that when inter-societal differences in occupational demand are held constant, industrial societies should still exhibit more mobility than pre-industrial societies. This hypothesis, tested with mobility data at the elite level in industrial and pre-industrial societies, is not strongly supported. This suggests that the greater "openness" of industrial societies may be due almost wholly to sheer quantitative occupational demand, rather than to values and norms of a universalistic-achievement type.

STUDIES of social mobility have only begun to exploit the possibilities of systematic cross-national comparative analysis. Beginnings have been made in the comparative analysis of mobility in industrial societies [1] but there have been no systematic and quantitative comparisons of mobility in industrial as against pre-industrial societies. This task is attempted here. We shall be concerned not with the total

[1] Seymour M. Lipset and Natalie Rogoff, "Class and Opportunity in Europe and America," *Commentary,* 18 (1954), 562–568; David V. Glass, (ed.), *Social Mobility in Britain,* London: Routledge and Kegan Paul, 1954, pp. 260–65; Seymour M. Lipset and Reinhard Bendix, *Social Mobility in Industrial Society,* Berkeley: University of California Press, 1959; S. M. Miller, "Comparative Social Mobility, A Trend Report and Bibliography," *Current Sociology,* 9 (1960).

amount of mobility in societies, but with *elite mobility*—the recruitment and advancement of men in high-status occupations.

Rogoff [2] and others [3] have developed and applied a variety of measures of inter-generational mobility. Rogoff's contribution was to distinguish two analytically separate sources of mobility: (1) *demand mobility,* i.e., mobility due to changes in occupational demand, such as the growth of professional and managerial demand, and (2) *social distance mobility,* or mobility independent of variations in occupational demand. Rogoff recognized the theoretical importance of this distinction:

> If movement within the occupational structure is more restricted for some social groups than for others, this can be seen only by controlling the effect of mobility changes due to changes in the occupational structure. If the actual mobility experienced by one group is shown to fall short of the demands of the occupational structure, while another group exceeds its share of opportunities, we are then in a position to discuss barriers, restrictions, and rigidity in the social structure.[4]

Some critics, apparently missing the theoretical point of this distinction, have dismissed it as overly artificial. The critics argue: Is not the important fact that, for example, more sons of unskilled workers became clerks in 1940 than in 1910? There was more mobility in 1940 than in 1910, regardless of the *source* of this mobility. But note what happens in this argument: if it can be shown that the increase in demand for clerical workers between 1910 and 1940 was exactly proportional to the increase of mobility into clerical work experienced by the sons of unskilled workers, then it follows that all the increases in mobility are a result of *sheer quantitative changes in occupational demand,* and not at all to changes in *values and norms.* That is, the social structure in 1940 is not more equalitarian, or universalistic-achievement in its mobility-relevant values and norms than it was in 1910; it is simply quantitatively different in its occupational demand structure. There are simply more openings in certain occupations; there has been no "democratization of opportunities" independent of demand. Yet it is precisely the latter changes which have figured so prominently in theories holding that as societies become industrialized, they shift from aristocratic and particularistic-ascriptive orientations to more equalitarian and universalistic-achievement orientations.

I shall here attempt to cast some light on this problem by comparing mobility at the elite level in industrial and pre-industrial societies. The major hypothesis is that when elite occupational demand is held constant as between industrial and pre-industrial societies, sons will be recruited from a broader social base, and family background will have less relationship to career advancement, in industrial society than in pre-industrial society. If this hypothesis is not supported, then possibly industrial societies are not in fact more universalistic-achievement-oriented than pre-industrial societies.

SAMPLES

The writer had been analyzing for some time the occupational mobility of government officials in pre-twentieth-century China,[5] but only with the publication of Perrucci's recent paper [6] did it become possible to compare systematically the processes and amounts of mobility in this Chinese governmental elite with a high-status, if not elite, U.S. occupational group, engineers. Perrucci analyzed the mobility of a sample of 2,467 U.S. engineers who were graduated from engineering school between 1911 and 1950. My own sample of 1,008 Chinese government officials was drawn from government directories (*T'ung-kuan-lu*) for 1831-1879.[7] People classed as "engineers"

[2] Natalie Rogoff, *Recent Trends in Occupational Mobility,* Glencoe: The Free Press, 1953.

[3] Glass, *op. cit.;* Melvin M. Tumin, *Social Class and Social Change in Puerto Rico,* Princeton: University Press, 1961, Ch. 25.

[4] Rogoff, *op. cit.,* p. 30.

[5] Robert M. Marsh, *The Mandarins: The Circulation of Elites in China,* N.Y.: The Free Press of Glencoe, 1961; and "Formal Organization and Promotion in a Pre-industrial Society," *American Sociological Review,* 26 (August, 1961), pp. 547–556.

[6] Robert Perrucci, "The Significance of Intra-Occupational Mobility: Some Methodological and Theoretical Notes, Together with a Case Study of Engineers," *American Sociological Review,* 26 (December, 1961), pp. 874–883.

[7] The majority of *T'ung-kuan-lu* are in the gov-

in the U.S. census vary greatly in education and income. Civil engineers have a North-Hatt rating of 84, and in Duncan's Socio-economic Index of occupational status, based on educational and income data from the 1950 U.S. Census, "engineers, technical" had a score of 85.[8] But Perrucci's sample is restricted to a relatively elite group of engineers: those with a college degree, many of whom have risen to relatively high-status occupational positions (see Table 1). Their elite position makes them more comparable to the elite position officials held in China. The fact that engineers are a professional and technical elite while Chinese officials are a governmental elite does not necessarily make for any less comparability than if the American sample consisted instead of civil servants. The latter clearly have not held as high status as their Chinese counterparts.[9]

The sample of U.S. engineers and that of Chinese officials are also similar in the following respects: (1) all the U.S. engineers have degrees from the same engineering school, and all the Chinese officials had degrees in the government examination system. In this sense, both samples utilized equally the appropriate institutionalized educational *means* of entry into elite occupations. (2) Since the individuals in both samples are distributed through time, their seniority—the duration of their careers since graduation—can be held constant. (3) Both samples provide data on the relation between family background (father's or family's status) and the relative *position* of sons *within* the job hierarchy of the American engineering profession and that of the Chinese government service.

FINDINGS

My findings fall into two categories: (1) the respects in which the sample of engineers exhibits more elite mobility than the sample of Chinese officials, and (2) the respects in which the engineers are only slightly, if at all, more mobile than the officials.

(1) The respects in which the U.S. sample exhibits more elite mobility than the Chinese sample are shown in Table 1, which presents the relationship between family background and sons' intra-occupational position for each of the two samples. Three levels of family background have been specified for each sample,[10] as follows:

ernment archives in Peking. After canvassing all major U.S. Chinese libraries, I discovered that even among the relatively small number of *T'ung-kuan-lu* available (there is some duplication in the holdings of different U.S. libraries), the majority were for the last three decades of the last (Ch'ing) dynasty. My objective was to have a sample of these directories from the earliest possible period. The universe was defined as all directories for years prior to 1880, of which nine were accessible: Shantung, 1778 and 1859; Honan, 1836, 1837, 1847, and 1879–80; Hupei, 1831; Anhwei, 1871; and Fengt'ien (Mukden)-Chihli, 1879. I selected one directory from each of these five provinces and, where possible, tried to include one from each decade during the 1831–1879 period. (The 1778 Shantung directory is not included in the present sample because it includes only 39 officials.)

My sample, then, consists of all the officials included in the following *T'ung-kuan-lu:* Hupei, 1831 (N=110); Honan, 1837 (N=313); Shantung, 1859 (N=311); Anhwei, 1871 (N=164); and Fengt'ien-Chihli, 1879 (N=110). Elsewhere (Marsh, "Formal Organization and Promotion in a Pre-Industrial Society," *op. cit.,* p. 550) I have shown that this sample closely approximates the actual distribution of officials in the several civil service ranks in the provincial bureaucracy of the nineteenth century.

Since major rebellions against the dynasty and other disturbances occurred during the 1831–79 period there is the question of the representativeness of my sample vis à vis more stable historical periods. For example, the Nien uprising may have affected the mobility chances of officials serving in Shantung in 1859. With this exception, however, major disturbances did not occur in both the *same year* and the *same province* as that of a given *T'ung-kuan-lu* in our sample.

[8] Otis Dudley Duncan, in Albert J. Reiss, Jr., *Occupations and Social Status,* N.Y.: The Free Press of Glencoe, 1962, p. 263.

[9] See Marsh, *The Mandarins, op. cit.,* chs. 1–3. Berger makes this same point concerning the higher status of Egyptian officials than their Western counterparts. Morroe Berger, *Bureaucracy and Society in Modern Egypt,* Princeton: Princeton University Press, 1953.

[10] Three levels of socio-legal status had already been coded for the family background of Chinese officials. Consequently, Perucci's four strata for fathers of U.S. engineers were collapsed into three strata for purposes of comparison. Since 95 per cent of the Chinese population were in the lowest of the three Chinese strata (Commoners), Perrucci's strata were collapsed so as to maximize the size of the lowest of the three American strata; i.e., skilled and semi-skilled were included with unskilled. Also, "family background" refers only to father for the U.S. engineers, but refers to father's,

Family Background	Fathers of U.S. Engineers	Family Background of Chinese Officials
High	Professional and Semi-professional	Manchus, Bannermen, and Government officials
Middle	Clerical and sales	Local Elite: degree holders not officials
Low	Skilled, Semi- and Unskilled	Commoners: merchants, artisans and peasants.

Throughout the analysis what we shall be doing is comparing *inter*-occupational rank differences among fathers with *intra*-occupational rank differences among sons. Like Perrucci, we are concerned not with inter-generational movement between equivalent occupations, e.g., clerical fathers to clerical sons, but with movement from general occupational categories (fathers' generation) to hierarchically ranked positions within a specific occupation (engineering or officialdom) in the sons' generation.

Table 1 shows that U.S. engineers are recruited from a broader social base than were Chinese officials, and that at every hierarchic level the social composition of U. S. engineers was broader than that of Chinese officials. For example, 64 per cent of all Chinese officials came from high-status families, in contrast to only 29 per cent of all U.S. engineers. Again, of sons in the highest rank positions, 40 per cent of the U.S. engineers were from high-status families, whereas 74 per cent of the Chinese were from high-status families. These differences are magnified when population proportions are taken into consideration. High-status families comprised a smaller proportion of the population in nineteenth-century China than in twentieth-century America, and low-status families a much larger proportion of the population in China than in the United States.

TABLE 1. SOCIAL COMPOSITION OF U.S. ENGINEERS AND CHINESE OFFICIALS AT SPECIFIED HIERARCHIC LEVELS

	Family Background									
	U.S. Engineers					Chinese Officials				
Sons' Occupational Rank *	N	High	Middle	Low	Total	N	High	Middle	Low	Total
High rank	(387)	40%	23%	37%	100%	(132)	74%	16%	10%	100%
Middle rank	(1114)	29%	26%	45%	100%	(194)	71%	20%	9%	100%
Low rank	(966)	24%	24%	52%	100%	(544)	59%	26%	15%	100%
All sons	(2467)	29%	25%	46%	100%	(870)**	64%	23%	13%	100%

* Sons	U.S. Engineers	Chinese Officials
High rank	President and Vice-President	Rank 1–4
Middle Rank	Chief Engineer, Ass't. Chief Engineer, Ass't. Superintendent, District Engineer	Rank 5–6
Low rank	Design Engineer and Project Engineer	Rank 7**

** As stated above, the original N for the Chinese sample was 1,008. To maximize comparability with the U.S. sample, it was necessary to exclude 138 officials from the Chinese sample, leaving an N of 870. The 138 were dropped because they were in the two lowest ranks in the bureaucracy—ranks eight and nine—and, unlike officials in the seven highest ranks, had in most cases *not* received degrees in the government examination system. The working N of 870 includes 125 officials who, as Manchus or Chinese Bannermen, had a more hereditary elite status than in the case of Chinese non-Banner officials.

Thus, sons from high-status families are *more over-represented* among Chinese officials than among U.S. engineers, and sons from low-status families are *more under-represented* among Chinese officials than among U.S. engineers.

(2) In the following respects, the U.S. sample is only slightly, if at all, more mobile than the Chinese sample.

(a) The association between family background and sons' intra-occupational advancement *subsequent* to initial recruitment is significant, but low, among both U.S. engineers and Chinese officials.

grandfather's and great-grandfather's generations for the Chinese sample.

TABLE 2. THE RELATION BETWEEN INTRA-OCCUPATIONAL RANK AND FAMILY BACKGROUND, U.S. ENGINEERS AND CHINESE OFFICIALS*

Sons' Occupational Rank	Family Background			
	High	Middle	Low	Total
1. U.S. Engineers				
President & Vice Pres.	21% (147)	14% (85)	13% (155)	(387)
Ass't Chief Engineer, Chief Engineer, Ass't. Supt., District Engineer	45% (321)	48% (293)	44% (500)	(1114)
Design Engineer and Project Engineer	34% (237)	38% (236)	43% (493)	(966)
Total %	100%	100%	100%	
Total N	(705)	(614)	(1148)	(2467)
Source: Adapted from Perrucci, *op. cit.*, Table 1, p. 876. χ^2=29.604 P<.001 C=.11				
2. Chinese Officials				
Rank 1–4 (highest)	17% (98)	10% (21)	12% (13)	(132)
Rank 5–6	25% (138)	19% (38)	16% (18)	(194)
Rank 7 (low)	58% (322)	71% (143)	72% (79)	(544)
Total %	100%	100%	100%	
Total N	(558)	(202)	(110)	(870)
χ^2=44.370 P<.001 C=.22				

* Table 2 differs from Table 1 in that the columns are percentaged, instead of the rows. Table 1 shows the distribution of family backgrounds for men in given ranks of engineering or officialdom; Table 2, on the other hand, shows the distribution of ranks for men from given types of family background.

In Table 2 the coefficient of contingency (C) is .11 for the U.S. sample and .22 for the Chinese sample. This means that the engineers are slightly more mobile than the Chinese officials, i.e., the relation between fathers' occupation and sons' advancement is just a bit greater in the Chinese than in the American sample. Once initial recruitment has taken place, however, advancement in Chinese officialdom was virtually as independent of family background as among U.S. engineers, despite China's considerably lower level of industrialization. The theoretical expectation that highly industrialized societies are more universalistic-achievement, and less particularistic-ascriptive, than pre-industrial societies is supported by our data, but not very strongly. We shall return to this point below.

In Table 3, each sample is broken down into three sub-samples, with seniority held constant. Seniority for the U. S. engineers is measured by the number of years between the year of graduation from engineering school and 1960. For Chinese officials, seniority is the number of years between the date of receiving the highest degree in the government examination system and the date of compilation of the directory of officials (*T'ung-kuan-lu*). We thus have three pairs of seniority sub-samples which can be compared: a high-seniority sub-sample (U.S. engineers with 30–50 years' seniority and Chinese officials with 25 or more years' seniority), a medium-seniority sub-sample (U.S. 20–29 years and Chinese 13–24 years), and a low-seniority sub-sample (U.S. 10–19 years and Chinese 0–12 years).[11] As in Table 2, Table 3 shows that in each of these sub-samples, the relationship between family background and intra-occupational rank is significant at or beyond

[11] Exactly comparable seniority groups were precluded because the Chinese data had already been coded, and the U.S. data could not be manipulated by the writer.

TABLE 3. DIFFERENCES IN INTRA-OCCUPATIONAL RANK AMONG (1) U.S. ENGINEERS AND (2) CHINESE OFFICIALS, BY FAMILY BACKGROUND AND SENIORITY (RAW DATA)

(1) U.S. Engineers	Seniority: 30–50 Yrs.				20–29 Yrs.				10–19 Yrs.				Total
	Family Background												
Sons' Occupational Rank	Prof. & Semi-Prof.	Clerical & Sales	Skilled, Semi- & Unskilled	Total	Prof. & Semi-Prof.	Clerical & Sales	Skilled, Semi- & Unskilled	Total	Prof. & Semi-Prof.	Clerical & Sales	Skilled Semi- & Unskilled	Total	
	a	b	c		a	b	c		a	b	c		
1. President & Vice President	43	34	74	151	54	29	40	123	50	22	41	113	387
2. Ass't. Chief Eng., Chief Eng., Ass't. Supt. & Dist. Eng.	48	52	157	257	107	94	134	335	166	147	209	522	1114
3. Design. Eng. & Project Eng.	14	28	48	90	44	38	100	182	179	170	345	694	966
Total	105	114	279	498	205	161	274	640	395	339	595	1329	2467
	χ^2=11.952 P=.02 C=.15				χ^2=21.760 P=.001 C=.18				χ^2=26.580 P=.001 C=.14				
(2) 19th Century Chinese Officials Sons' Occupational Rank	25 or more Yrs. Seniority				13–24 Yrs. Seniority				0–12 Yrs. Seniority				Total
Highest Bureaucratic Rank Reached	Official Family	Local Elite Family	Commoner Family	Total	Official Family	Local Elite Family	Commoner Family	Total	Official Family	Local Elite Family	Commoner Family	Total	
	a	b	c		a	b	c		a	b	c		
1. Rank 1–4 highest	33	7	3	43	36	12	6	54	8	1	0	9	106
2. Rank 5–6	37	9	3	49	41	19	4	64	22	6	6	34	147
3. Rank 7 lowest	49	16	6	71	78	53	24	155	101	68	31	200	426
Total	119	32	12	163	155	84	34	273	131	75	37	243	679*
	χ^2=11.247 P=.05 C=.25				χ^2=14.742 P=.01 C=.23				χ^2=15.795 P=.01 C=.25				

* The total N is reduced from 870 to 679 because there was no information on the seniority of 191 officials.

the 5 per cent level, but the *degree* of association (C) is low (.15, .18 and .14 for the U.S. sub-samples; .25, .23 and .25 for the Chinese sub-samples).

Thus, regardless of differences in industrialization as between the two societies, when education alone, or education and seniority are held constant, there are only very slight differences between U.S. engineers and Chinese officials in the influence of family background upon *post-recruitment* advancement within their respective occupational hierarchies. In both an industrial and a pre-industrial society, once individuals have attained the requisite educational background, and have been recruited in the first place, the influence of family background virtually disappears as a determinant of post-recruitment ascent. In this sense, then, the amount of elite mobility is virtually the same in these two occupational samples.

This finding must not be dismissed as "obvious." In a pre-industrial society like China, with a high degree of kinship solidarity, especially at the elite level, it has often been held or implied that advancement would vary with family background, regardless of similarities in education and in career seniority. But this is not the case. For the sake of clarity, let me state again: the influence of family background *was* a significant determinant of *initial recruitment* in the Chinese bureaucracy; all that is being asserted here is that the influence of family background was significantly *reduced* in post-recruitment advancement in the bureaucracy.

(b) The second respect in which the U.S. sample is only slightly, if at all, more mobile or "open" than the Chinese sample has to do with what Rogoff calls "social distance mobility. To compare the advancement of U.S. engineers and Chinese officials with occupational demand differences held constant, following Rogoff's technique,[12] I converted the raw data in Table 2 into ratios of the actual cell value to the expected cell value. These ratios are presented in Table 4 for the total U.S. and Chinese samples, and in Table 5 for the seniority sub-samples. A ratio of 1.00 is obtained when the actual cell value and its expected value are equal; i.e., when there are as many sons in that occupational position as would be expected if there were no relation between son's position and family background. The higher the ratio is above 1.00, the more overrepresented are the sons from the given family background in that given occupational position; when the ratio is less than 1.00, sons are under-represented.

Following Perrucci, the following hypotheses can be tested with the data in Table 4,

TABLE 4. SOCIAL DISTANCE MOBILITY. RATIO OF ACTUAL U.S. ENGINEERS TO EXPECTED U.S. ENGINEERS, AND OF ACTUAL CHINESE OFFICIALS TO EXPECTED CHINESE OFFICIALS, BY FAMILY BACKGROUND

(1) U.S. Engineers	Family Background			
Sons' Occupational Rank	High	Middle	Low	Total
	a	b	c	N
1. President & Vice-Pres.	1.33	.88	.86	387
2. Ass't. Chief Engineer, Chief Engineer, Ass't. Supt. & Dist. Engineer	1.01	1.06	.97	1114
3. Design Engineer and Project Engineer	.86	.98	1.10	966
Total N	(705)	(614)	(1148)	2467
(2) Chinese Officials	Family Background			
Sons' Occupational Rank	High	Middle	Low	Total
	a	b	c	N
1. Rank 1–4 (highest)	1.16	.68	.78	132
2. Rank 5–6	1.11	.84	.74	194
3. Rank 7 (lowest)	.92	1.13	1.15	544
Total N	(558)	(202)	(110)	870

[12] Rogoff, *op. cit.*, chapter 2.

in which the four corner cells are the most important theoretically:

Hypothesis 1: Sons from high-status families will be over-represented in high-rank positions (cell 1a for the U.S. and Chinese tables).
Hypothesis 2: Sons from low-status families will be under-represented in high-rank positions (cell 1c).
Hypothesis 3: Sons from low-status families will be over-represented in low-rank positions (cell 3c).
Hypothesis 4: Sons from high-status families will be under-represented in low-rank positions (cell 3a).

All four of these hypotheses are supported.

Having seen that both U.S. and Chinese sons are over-represented (cells 1a and 3c) or under-represented (cells 1c and 3a), we turn now to the more important questions: are Chinese sons *more* overrepresented than American sons in cells 1a and 3c? Are Chinese sons *more* underrepresented than American sons in cells 1c and 3a? These questions are meaningful in terms of the theory which holds that industrial society institutionalizes universalistic-achievement values to a greater extent than pre-industrial society. According to this theory, even *after* occupational demand differences between industrial and pre-industrial societies have been held constant, there should still be *less* relationship between fathers' status and sons' occupational rank in an industrial sample than in a pre-industrial sample.

Two out of the four hypotheses derived from this theoretical expectation are supported by the data in Table 4.

Hypothesis 5: Sons from high-status families will be *more* over-represented in high-rank positions in China than in the U.S. (U.S. 1.33, China 1.16: not supported).
Hypothesis 6: Sons from low-status families will be *more* under-represented in high-rank positions in China than in the U.S. (U.S. .86, China .78: supported).
Hypothesis 7: Sons from low-status families will be *more* over-represented in low-rank positions in China than in the U.S. (U.S. 1.10, China 1.15: supported).
Hypothesis 8: Sons from high-status families will be *more* under-represented in low-rank positions in China than in the U.S. (U.S. .86, China .92: not supported).

We conclude, then that the results are in the predicted direction in two out of four instances, and that the *magnitude* of the U.S.-Chinese differences is very small. The *mean mobility rate* (the average of all cell ratios, except the diagonal cells, which represent "inheritance" of the same relative rank among sons as among fathers) provides further evidence of the similarity in the amount of mobility. The mean mobility rate is .93 for the U.S. engineers, and .89 for the Chinese officials; in other words, virtually identical.

The next step taken was to test the same eight hypotheses, this time with *seniority* as well as occupational demand differences held constant. Table 5 contains the same three pairs of seniority sub-samples as were used in Table 3. The cell entries are ratios of actual to expected engineers and officials, arrived at on the basis of data in Table 3 through the same procedures as those used in Table 4. In short, Table 5, like Table 4, presents Rogoff's "social distance mobility ratios," with seniority held constant.

Hypotheses one through four (see above) are supported in 11 out of 12 cells. For example, in all seniority sub-samples, sons from high-status families are over-represented in high-rank positions, among both U.S. engineers and Chinese officials. (The one exception is that in cell 3c of the high-seniority sub-sample, the prediction is that sons from low-status families will be over-represented in low-rank positions, while the actual observation is that U. S. sons are slightly under-represented [.94]).

If hypotheses one through four are largely supported by the data in Table 5, hypotheses five through eight are largely *not supported* by the data in Table 5. In 9 out of 12 cells, theoretical expectations are reversed. For example, for 1a cells, sons from high-status families are predicted to be *more* over-represented in high-rank positions in China than in the U.S. In fact, in the high seniority sub-sample, U.S. sons are .32 *more* over-represented than are Chinese sons (1.37 vs. 1.05); in the medium seniority sub-sample, U.S. sons are .20 more over-represented than are Chinese sons (1.37 vs. 1.17).

Thus, holding seniority constant weakens the predictive power of the theory being tested: before seniority was held constant (Table 4) the predictive power of hypotheses five through eight was 50 per cent (two

TABLE 5. SOCIAL DISTANCE MOBILITY. RATIO OF ACTUAL U.S. ENGINEERS TO EXPECTED U.S. ENGINEERS, AND OF ACTUAL CHINESE OFFICIALS TO EXPECTED CHINESE OFFICIALS, BY FAMILY BACKGROUND AND SENIORITY

	Seniority								
(1) U.S. Engineers	30–50 Yrs.			20–29 Yrs.			10–19 Yrs.		
	Family Background								
Sons' Occupational Rank	Prof. & Semi-Prof.	Clerical & Sales	Skilled, Semi- and Unskilled	Prof. & Semi-Prof.	Clerical & Sales	Skilled, Semi- and Unskilled	Prof. & Semi-Prof.	Clerical & Sales	Skilled, Semi- and Unskilled
	a	b	c	a	b	c	a	b	c
1. President & Vice-President	1.37	1.00	.90	1.37	.95	.79	1.44	.76	.78
2. Ass't Chief Eng., Chief Eng., Asst. Supt. & Dist. Eng.	.88	.88	1.08	1.00	1.12	.94	1.08	1.10	.90
3. Design Eng. & Project Eng.	.72	1.39	.94	.75	.86	1.29	.87	.96	1.12
$\bar{X}$	.99	1.09	.97	1.04	.98	1.01	1.13	.94	.93
(2) 19th Century Chinese Officials	25 or more Yrs. Seniority			13–24 Yrs. Seniority			0–12 Yrs. Seniority		
Sons' Occupational Rank	Official Family	Local Elite Family	Commoner Family	Official Family	Local Elite Family	Commoner Family	Official Family	Local Elite Family	Commoner Family
	a	b	c	a	b	c	a	b	c
1. Rank 1–4 (highest)	1.05	.83	.95	1.17	.72	.89	1.65	.35	—*
2. Rank 5–6	1.03	.94	.83	1.13	.97	.50	1.20	.57	1.16
3. Rank 7 (lowest)	.95	1.15	1.15	.89	1.11	1.24	.94	1.10	1.02
$\bar{X}$	1.01	.97	.98	1.06	.93	.88	1.26	.67	1.09

* No cases.

out of four cells); after holding seniority constant (Table 5) the predictive power drops to only 25 per cent (three out of twelve cells). But, the magnitude of these reversals is small in all instances. The mean mobility rates are as follows:

Seniority	U.S. Engineers	Chinese Officials	Difference
High	.995	.957	.038
Medium	.882	.873	.009
Low	.892	.950	—.058

Therefore, the more conservative conclusion may be that when demand or seniority or both are held constant, the relationship between fathers' status and sons' position is basically no higher or lower in an industrial sample than in a pre-industrial sample. It should be noted, of course, that even this conservative conclusion of "no difference" constitutes a failure to support important inferences from the theory that industrial societies are more universalistic-achievement-oriented than are pre-industrial societies.

To sum up: (1) Sons from lower-status families in an industrial society are better able to *enter* an elite occupation than are lower-status sons in a pre-industrial society. Because of this initial difference, at each level within an elite occupational hierarchy lower-status sons in a pre-industrial sample are more under-represented and higher-status sons in the pre-industrial sample are more over-represented than are their counterparts in an industrial sample. (2) When, however, the percentage base is not the proportion of lower status sons in the total society, but rather, only those lower-status sons who succeed in gaining initial recruitment to an elite occupation, the influence of family background on *subsequent advancement* is reduced if not vitiated altogether: i.e., both among Chinese officials and among U.S. engineers, lower status sons after recruitment have about as much opportunity for advancement as do sons from higher status families. (3) The differences between the American and Chinese samples stated in (1) above would seem to be primarily a result of differences in occupational demand: when demand is held constant, lower-status sons are not significantly more under-represented among Chinese officials than among U.S. engineers, nor are higher-status sons significantly more over-represented among the Chinese officials than among the American engineers. (4) In short, when seniority or demand or both are held constant, the principal fact is the similiarity rather than the difference between the U. S. and Chinese samples.

FURTHER ANALYSIS

Because these findings are somewhat unexpected, and because they are based on only two elite occupational samples and two societies, an attempt was made to test them with data from a larger number of societies. A theory was stated which related three variables: (1) *degree of industrialization,* as measured by the per cent of economically active males in non-agricultural occupations (2) *elite demand,* as measured by the per cent of the economically active population in elite occupations; and (3) *elite mobility,* as measured by the per cent of manual sons who enter elite occupations. The theory states three propositions: (1) elite demand is positively correlated with degree of industrialization; (2) elite mobility is positively correlated with elite demand; and (3) elite mobility is positively correlated with degree of industrialization.

Industrialization and elite demand. In a sample of ten societies,[13] varying in industrialization from Great Britain (94 per cent in non-agricultural occupations) to Puerto Rico (53 per cent), the correlation (r) between industrialization and elite demand was +.214. The correlation is rather low because four of the ten societies depart sharply from expectation: Britain and West Germany, though much more industrialized than Japan and Puerto Rico, have proportionately smaller elites than Japan and Puerto Rico.

The same proposition was tested in a

[13] The ten societies are drawn from Miller, *op. cit.,* and include Britain, U.S.A., West Germany, the Netherlands, Sweden, France (Bresard study), Denmark, Italy, Japan and Puerto Rico. In the present analysis, "elite" includes the occupations Miller termed "Elite I and Elite II" for each country, i.e., the highest-ranking and second highest-ranking occupational strata. For the most part, these categories include each society's professionals, higher administrators, managers and officials and owners of large enterprises.

sample of 32 societies,[14] varying in industrialization from Britain to Haiti (only 13 per cent in non-agricultural occupations). In this more representative sample of industrial, semi-industrial and agrarian societies, industrialization is correlated (r) +.874 with elite demand. The occupational structure of agrarian societies is more sharply pyramidical than that of semi-industrial societies, and the latter more sharply pyramidical than that of highly industrialized societies. The average proportion of the elite and of the middle classes in the total society, then, increases regularly with industrialization.

Elite demand and elite mobility. In the sample of ten societies, the correlation (r) between elite demand and the amount of elite mobility (per cent of manual sons[15] who enter the elite) is +.945. (Since there are no comparative data on elite mobility for the larger sample of 32 societies, no correlation can be presented between elite demand and elite mobility for these societies.) This high correlation suggests that virtually all the inter-societal variance in manual to elite mobility is accounted for by differences in elite demand.

Industrialization and elite mobility. The correlation (r) between industrialization and elite mobility in the sample of ten societies is +.380. This finding is related to the fact that in the sample of ten societies, the relationship between industrialization and elite demand was rather low (+.214). The ten societies were dichotomized into those with higher and lower elite demand, so that elite demand could be held constant. When elite demand was held constant, the original correlation (+.380) between industrialization and elite mobility was reduced to +.339 and +.129, for the high and low demand societies, respectively. This adds further support to the finding that elite mobility is more highly correlated with elite demand than with industrialization per se.

Remember, however, that in the more representative sample of 32 societies, industrialization and elite demand were highly correlated (+.874). Assuming that the high correlation between elite demand and elite mobility also holds for this more representative sample of societies, we should expect that industrialization and elite mobility would be more highly correlated. Unfortunately, we do not now have the data to test this. But we do know that in societies where the elite is radically dwarfed in size by the manual strata, the proportion of manual sons who can enter the elite is necessarily small, even in the limiting case where the elite is totally recruited from the manual strata.

Our major conclusion, however, remains: As societies become more industrialized their amount of elite mobility also increases, *provided that increasing industrialization is accompanied by increases in elite demand.* Elite demand acts as a necessary intervening variable between degree of industrialization and amount of elite mobility. Most of the variance in mobility between industrial and less industrial societies is explained by sheer quantitative differences in occupational demand, rather than by changes in values and norms of the type identified by Rogoff's concept of "social distance mobility." Values need not be strongly institutionalized, of course, and our findings may reflect the fact that while industrialized societies may profess universalistic-achievement values, these values may not have been effectively institutionalized in the area of social mobility. "Not effectively institutionalized" in this context means: in contrast to the observed amount of "openness" in pre-industrial societies and in societies which do not profess to the same degree these universalistic-achievement values. It is hoped that these considerations will stimulate further research into cross-societal mobility comparisons.

[14] The 32 societies are drawn from United Nations, *Demographic Yearbook,* 1956, N.Y.: Statistical Office of the U.N., 1956, Table 13. In this sample, "elite" includes those in "professional, technical and related" occupations, in each society.

[15] Miller defined "manual" to include both urban working class and farm workers. Elite mobility here means, then, the per cent of urban and rural manual sons who enter the highest two occupational strata in their society. Rates for both elite demand and elite mobility are taken from Miller, *op. cit.,* p. 37, Table V, columns 9 and 6, respectively.