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Americans have argued heatedly about the nature of their national elites since the establishment of their nation. The rebellion of the founding fathers against aristocracy crystallized a dominant ideology which emphasizes equality as a fact and as a value: unlike their feudal forebears, says the ideology, Americans are relatively equal, access to American positions of power, wealth and prestige is relatively open, and both of these are very good things. Academic debate about power in America has proceeded in the terms set by the ideology. Critics have argued that an elite rules America, while supporters have claimed that the ruling elite is a figment of the critics' imagination.

The elitist/pluralist debate has been rehashed enough already. I believe that it is unresolvable. Moreover it has kept us from examining many important issues about variable process and structures concerned with power and inequality.

No one denies that there is a business elite, that a small number of individuals and corporations wield a great deal of power. Rather than quarreling about whether the elite is cohesive or loose, unified or divided, omnipotent or of limited power, we can fruitfully examine cohesiveness, unity, and relative power as variables. It is theoretically necessary not only to identify the degree of cohesiveness of a particular elite, but to discover what other variables affect cohesiveness over time and between units. Those are the questions that lie behind this paper.

The research reported here deals with the structure and composition of the American business elite from 1886 to 1905. Instead of simply asking what kinds of people held power and how they were related to each other, it examines the impact of the changing organizational structure of business on the membership of the elite and on the connections among members. This shift of perspective from individual to organization brings out two features of the development of the American elite which previous analyses have overlooked: first, the reshaping of

the composition and the structure of the elite by the industrial concentration movement of the late nineteenth and early twentieth centuries; second, the existence of a process by which a core group, based especially in the infrastructure and financial sector, extends its influence into a new industry, facilitates capital concentration in that industry, and draws the leaders of that industry into tight association with other members of the national elite.

Three Views of Elites

Previous examinations of American elites fall into three main categories. The first we might call the individual perspective: the personal characteristics of elite members are examined and compared with those of non-elites. Typical questions are whether today's rich people were born into wealthy families, whether a few schools supply most of the top executives, and so on. The second view deals with networks: given the existence of wealthy, powerful and/or prestigious individuals, how are they connected with each other? Is the network tight-knit or loose-knit, highly centralized or relatively decentralized, stable or unstable? The third, the resource mobilization perspective, sees the elites as representatives of organized, contending groups, and relations among elite individuals as the projection of organizational relationships. What interests, organizations, or segments of the population are represented in the elite? How does a change in the structure or behavior of those interests, organizations, and segments of the population affect the composition and internal relations of the elite?

Americans, since de Tocqueville told them what they wanted to hear about themselves, have maintained that equality of opportunity rather than true equality is the democratic mode. Sociologists have called this concept mobility and have made it a central focus of the discipline. In the 1930's Taussig and Joslyn (1932) punctured the then-prevalent myth that most American business leaders were personifications of Horatio Alger stories, opening up a debate that has continued since

then. Miller (1950, 1952) and his students, Gregory and Neu (1952) further documented the advantageous background of most business leaders at the turn of the century. Others have debated about whether the business elite has become more open or closed over the course of American history. Mills (1963) found it closing, Keller (1959) found it becoming more open, Bendix and Howton (1962) found it stable, while Harris (1969) found a 20-year cyclical trend covering 300 years of American history. However, all of them have cast their arguments in terms of the opening or closing of the elite structure. All have equated fluidity with democracy. All have agreed that the existence of an elite recruited on achievement rather than ascription is an indication or an egalitarian class structure.[1] The the question they fail to ask is how elitist is the elite? Could the same developments that replaced ascriptive with achievement recruitment have broadened the gulf between the elite and the non-elite, thereby increasing absolute inequality, and challenging American ideological egalitarianism?

A second perspective looks at the relations of elite members with each other rather than their relations with their fathers. The openness of the class system is studied by examining the extent to which the elite form a unified, cohesive bloc, regardless of recruitment patterns. Many of these studied have been cast in the elitist/pluralist debate. (Domhoff, 1967, 1975; Hunter, 1953; Dahl, 1961, 1967) The primary issue posed is: If there is a group of individuals (or families) that frequently interact with each other, that have a common world view, that belong to the same organizations, and that have a common relationship to the means of production, we can call this group a class. If they control the means of production, they are an upper class (Domhoff, 1967). Their strength as an elite is seen as directly related to their cohesiveness and their separation from society. Elitists maintain that these conditions exist, while pluralists retort that there is diversity of interest that precludes hegemony by any particular group (Kornhauser, 1961).

Although this perspective goes beyond the atomism of the first perspective, the business elite is still treated as a group of individuals. There is little consciousness of the relationship between the structure of the elite and the organizational structure of society. If it is found that a few men occupy positions in many areas of society, the interpretation would be in terms of cohesion of the elite members. A high degree of overlapping membership among social sectors would be interpreted as demonstrating that a few individuals occupy a disproportionate number of elite roles and constantly interact together in many realms.

A third perspective, the resource mobilization perspective, treats elite members not as individuals, either in terms of individual characteristics or in terms of interaction, but as representatives of organized contending groups. The rise of a new elite is seen as indicative of the rise of new contending groups. The power of elite members is treated as the power of the groups they represent. And the interaction among elite personnel is interpreted as a projection of the interaction among the groups they represent. If there is an elite that is tightly interconnected and acts in concern on issues, it is not just because they happen to be friends or go to the same schools or belong to the same clubs; it is because the interests of the groups they represent are consonant or inter-dependent. The organization of elites is an indication of the organization of society (see Perrucci and Pilisuk, 1970; Tilly, 1970; Stinchcombe, 1968).

Proponents of the resource mobilization perspective (Oberschall, 1973; Olsen, 1968; Gamson, 1975; Tilly, 1970, 1975; Coleman, 1974) argue that power is a matter of organizational effectiveness, which is a function of the mobilization of resources. The powerless, in this perspective, are those that have no access to groups capable of mobilizing resources. Conversely, the powerful are those who articulate and represent the interests of groups that have mobilized resources,

while excluding other groups from interaction and access to strategic resources (Gamson, 1968).

This perspective would treat overlapping memberships among social sectors as indicative of the cohesiveness of the organizational relations among organizations (Bonacich, 1972; Bunting and Barbour, 1971; Dooley, 1969; Levine, 1972; Sonquist and Koenig, 1975). For example Perrucci and Pilisuk (1970) treat the configuration of interlocks in local organizations as a network of resources in which a small set of individuals occupy many positions and facilitate the flow of resources among organizations. Zeitlin et al. (1974) similarly found that in Chile there was an "inner circle" of capitalists who occupied many directorships and who performed a central role in the administration of the economy.

The late nineteenth and early twentieth century in the U.S. provide an important case to examine some of the issues discussed above. It was a period of massive social and economic change and produced a new business elite labeled everything from robber barons to captains of industry. Many of the names are still familiar -- Rockefeller, Morgan, Vanderbilt, Armour and Carnegie. Today's ruling business elite emerged in this period.

Each of the three perspectives would make different predictions about patterns for the development of a national business elite. For the individual perspective, the degree of cohesiveness in the elite is seen as a function of the openness of entrance into the elite. A self-perpetuating elite is a tightly knit elite, while an elite that is expanding must be bringing into it people from outside the elite families, and would therefore be expected to be loosening up. The new members would not have the same acquaintances and loyalties as older elite members. Ascriptive recruitment patterns would give way to achievement oriented patterns. Parts of the economy that shared personnel would do so on the basis of the need for similar leadership skills and personal affinity among leaders. The overall

effect of the development of large scale enterprise would be to undermine the tightly knit traditional elite by providing the opportunity for highly mobile new leaders, unconstrained by commitments to the old structure. Bendix and Howton typify the individual perspective by concluding that bureaucratization in the development of large scale enterprise in America served to "reinforce the social base of American ideological equalitarianism" (1962, p. 143). That is it made social reality more congruent with egalitarian ideology.

The network perspective has been most commonly used for explaining the conservatising impact of the elite structure and is better suited for that than for predicting change in the elite structure. This perspective would predict that new members of the elite would emerge in relation to interaction with old members of the elite. The centrality of an industry's elite in the elite net at time t is a function of its place in the same net at t-1. New members would be brought in through existing ties and integrating social institutions such as elite social clubs. Moreover this perspective would predict a period of fluidity while integrating institutions adapted to the changed composition and size of the elite. Full integration could not be completed until the new elites were invited to the elite clubs, their sons educated in the right schools etc. The mobilization perspective would predict that new elites would develop as a function of incumbency in positions where the flow of resources can be controlled. Specifically new business elites would emerge in those industries that were large and concentrated. Size and concentration would both be necessary, but neither would alone be sufficient. Relations among sectors of the elite would be a function of the flow of resources between sectors. While the network perspective emphasizes the process by which existing elite relations structure the development of new elites, the resource perspective emphasizes the process by which new independent sources of resource mobilization are incorporated into the pre-existing structure.

The mobilization perspective would predict that cohesion of the business elite would follow from the concentration and interaction of business organization. There are two reasons why concentrated industries would be more likely to have representatives in central elite roles. In the first place concentration of resources facilitates concerted action by the industry to represent the interests of the industry in other parts of the economy. One manifestation is the exchange of personnel within strategic sectors of the economy. In the second place, access to the resources of concentrated industries is more focused than less concentrated industries. This makes the industry more accessible to other centralized sectors. In monopolized industries, there is the added factor that complete control of certain resources was used for inducement and at times coercive purposes. For example, firms that controlled a large proportion of a product, such as Standard Oil in petroleum, or Armour and Swift in meat-packing, gained special rebates from railroads, and their leaders were often invited to sit on the boards of railroads. More competitive industries such as lumber were charged exorbitant freight rates to compensate (U.S. Bureau of Corporations, 1913).

Thus the individual perspective predicts a decrease in cohesion over the period. The network perspective emphasizes that any new members of the elite enter through previous ties. The mobilization perspective predicts increased cohesion based on a more centralized exchange of resources.

Research Design.

The business elite is operationalized as officers and directors of corporations of over one million dollars authorized capital between 1886 and 1905 in 11 randomly sampled manufacturing, communication and transportation industries.[3, 4] The names of individuals were obtained from a number of places, primarily from the Manual of Statistics (an early annual stock exchange handbook), Poor's Manual of Railroads, trade journals, and secondary sources.[5] Data on the individuals

were found in the National Cyclopedia of American Biography (NCAB), a cumulative annual set of volumes publishing since 1890.

In the 11 industries, a total of 3515 individuals holding positions in 266 companies at some point in the period were identified. The NCAB recorded biographies for about a quarter of them. Half of these yielded a sample of 488 biographies. When coded, these biographies represented 6846 datum links of the individuals. Since some individuals represented more than one industry, the data represented 8502 links for the 11 industries. Sixty-five percent of these links were economic, 11% were political, and 24% were social. There is a built-in problem with collecting data on emerging institutional structures. The less institutionalized an arrangement is, the less accessible the data is.[6] To compensate for the dearth of names of directors from the early period, I have taken the names of people who were directors in an industry at any point in the time period and coded their links for each time period.[7]

The overall effect is that the results are watered down. This decision insures that the results are a reflection of a real process and not just an artifact of the differential availability of names at different points in time.

In the sample of industries, as it was originally drawn, there were two more industries -- boots and shoes, and clothes -- but data on these were so scarce that it could not be included in the analysis with any reliability.[8] However, this lends support to the general argument, since the boot and shoe industry in the early period had a total capitalization, according to the census of manufacturing, comparable to the other manufacturing industries in the sample. As late as 1905 its capital was $122m compared with $156 for the petroleum industry. But since it remained decentralized, it remained isolated. Total size was not sufficient, although it may have been necessary, to qualify industry leaders for inclusion in the elite.[9]

Concentration ratios for 1890, 1900, 1905 are calculated by dividing the authorized capital stock of the four largest firms in each industry by the reported capital for the industry in the census of manufactures.[10, 11]

Cohesion is examined by identification of links between industries identified in coding the biographies described in the NCAB. A link for an industry is a role filled by an officer or director of an industry in some other economic, political, or social organization during one time periods are 1886-1890, 1891-1895, 1896-1900 and 1901-1905. So if John D. Rockefeller happened to sit on the board of a major bank, the petroleum industry would be credited with one bank link. If William Rockefeller, who was a director of both petroleum and railroad firms, sat on the board of a large bank, both petroleum and railroad would be credited with a bank link. Each link with a very large firm was considered a separate link. Listing of smaller firms were counted only once per industry, so that sitting on several small banks would constitute only one link. If a NCAB biography mentions an incumbency for a political position, participation of party affairs or other political affairs, or some sort of kinship or social relations with political figures, the industries for which that person is a director is credited with a political link. An industry is credited with a social link for an affiliation with each <u>type</u> of social organization mentioned. For example, a persoh who belonged to five country clubs would be credited with a country club link.

Thus in the economic, political and social arenas, a high number of links for an individual is indicative of the scope or organizational affiliations and not just the number of organizational affiliations. The more links a person is credited with, the more types of organizations he is associated with, the wider the circle of his network, and therefore the wider the circle of the industry in which he occupies a role.

The results presented here represent a first stab at the data. The data were coded in a more detailed breakdown of types of affiliations and a more complex scheme for dating the links. Because of time limitations, I am concentrating on economic manifestations of integration. The approach will be to simply examine the relationship between patterns of concentration over industries and the distribution of economic links. Increased linkages among sectors of the economy are interpreted as increased cohesion of the elite.

The results indicate that the integration of the elite did increase substantially over the course of industrial concentration. Not only did industries become more concentrated individually, which is what every school child learns, but concentrated industries became more tightly knit to each other. In the 1886-1890 period, each coded individual was an officer or director in an average of 1.26 industries, while in the 1901-1905 period, each individual occupied such positions in an average of 1.99 industries. While that difference may not seem much in absolute terms, it signifies that in the early period, the expectation that a person will provide a link between industries is somewhat small, while in the latter period the expectation is closer to two industries and therefore providing a link between industries.

The total number of economic, social and political links for all 11 industries increased from 2913 links to 4094 links. The number of economic links increased from 1876 to 2584.[12]

Examination of the data by industries is more telling. Looking only at the sampled industries, in the early period, nearly all the interlocking is among railroad, coal and telegraph. Meat packing and petroleum each had an interlock with railroads, a result of their close working relationship with the railroads. By the end the system of interlocks is much more dense. Rather than the big gulf between the central trio and the rest, there is a more gradual hierarchy, with

those three still at the center, but with the other industries now part of the interlocking system (See Table 2).

The industries that gained the most economic links were the industries that showed the most increase in internal concentration (See Table 1). There were three industries that showed more than 100% increase in the number of economic links. These were the three industries that had the largest increase in concentration ratios of the sampled firms, meat packing, agricultural machinery, and paper.[13] In each of these industries a small group of very large companies replaced many smaller firms. Leadership passed into the hands of financial and industrial magnates, sometimes coming out of the industry, such as Armour and Swift, and sometimes entering the industry from the outside, such as George Perkins, the Morgan man who shared the leadership of International Harvester with Cyrus McCormick.

An issue of high saliency in the integration of the business elite is the role of finance and banking. The total number of links between these 11 industries and banks increased from 152 links in 1886-1890 to 271 links, in 1901-1905. Eighty-two of the largest commercial banks in the country were identified by Bunting (1972). The links with these major banks by the 11 industries tripled from 26 to 93. Railroads, telegraph and coal got the lion's share of major bank links, as they do other links. In the first time period, these three industries comprised 25 of the 27 links with major banks. The other two are from liquor and sugar, each of which were monopolized by a single firm. By the end of the period, railroad, telegraph and coal still had over three-fourths of the links (78 out of 93) with major banks. But only the book industry and the lumber industry of the 11 sampled industries still had no interlocks with major banks. These were the only two sampled industries that had concentration ratios less than 10%. The case of the lumber industry is especially illuminating since the total capital invested in the

industry, according to census figures was the largest manufacturing industry in the sample, more than triple that of the petroleum industry (U.S. Bureau of the Census, 1905.) Total size alone was not sufficient to attract relations with big money.

DISCUSSION

The results shed light on each of the three perspectives and suggest some things that go beyond all of them.

The individualist perspective does not hold up. The elite not only failed to show significant opening up, but an actual contraction. The data here shows that the number of available positions becomes more concentrated in fewer people. Moreover, examination of the census of manufacturers shows that the absolute number of all establishments in the 11 industries decreases during 20 of the most expansive years in U.S. history (U.S. Bureau of the Census, 1905). Only liquor, books, and paper of the sampled industries gained in total number of establishments. Despite any increase in egalitarian modes of recruitment there may have been, the span of hierarchy became more unequal. In a word, elite became more elite.

The network perspective is more fruitful than the individualist perspective for describing the patterns of change in linkages. There was a central core of interlocks that did provide the nucleus around which later links were structured. But the perspective does not help us predict which parts of the economy became part of the elite and which parts remained isolated. That perspective would predict only that the number of links of an industry had late in the period is a function of the number of links early in the period and the number of elite clubs to which members of the industry belong. The data confirm this, but only for those that had a central role in the early period. The highest number of economic links are found in railroads, coal, and telegraph in the beginning and the end.

For the others, links at the beginning and number of links with men's clubs, athletic clubs, country clubs, and "high-society" clubs[14] do not predict the number of economic links at the end. One example will illustrate. In the earliest period lumber, books, and meat packing had 32, 16, and 11 economic links respectively and were the three lowest industries. At the end of the period, lumber and books were still the two lowest with 18 and 28 links, while meat packing though still well below the total mean, had surpassed both of them. Membership in clubs does not explain this since there was no difference in club membership among them. Rather, the difference was increased concentration of the beef industry.

The mobilization perspective found the greatest support from the data. Those industries that experienced the greatest gain in links were the ones that underwent the greatest gains in concentration. And the particular process lends support for this point of view. Railroads, coal, telegraph and finance developed as an infrastructure core with tight relations among themselves and drew on a similar pool of people for leadership. Other industries mobilized resources in close relationship with the infrastructure core. Both the flow of resources and the structure of interlocks can be represented by a central axis with spokes radiating outward. The relationship among the men was a projection of the relationship among the organizations. While the network perspective would have predicted such a structure, the mobilization perspective provided better predictions for variations in occupancy of those spoke positions.

The development of a national elite involved three steps. The first is the government-subsidized development of the infrastructure. The second is the development of industrial monopolies around the core of infrastructure organizations. The third is the leveling of dominance within the monopoly sector as the railroads, coal, and telegraph relinquish absolute centrality. This paper concentrates on the second phase, the process of monopolization of industrial concerns

around the existing infrastructure firms.

None of the three perspectives alone can adequately explain how the elite developed. The most fruitful approach is to combine the network perspective's ability to treat the individual actor in terms of the totality with the mobilization perspective's emphasis on the flow of resources between centralized organizations.

The results show that the elite developed around an infrastructure core. The development and centralization of the infrastructure involved the development of transportation, communication and energy (that is, railroads, telegraph and coal), in coordination with the development of centralized finance. The telegraph grew up along side the railroad both figuratively and literally. Coal companies were almost universally owned or controlled by railroads (Roberts, 1901). The centralized railroad, telegraph and coal companies were linked financially, operationally, and personally through intensive interlocking of directors and officers.

Economic historians have debated the economic significance of the railroads in terms of the surplus value created by lowered transportation cost and increase in aggregate demand (Fogel, 1964). However, the more important role played was the centralization of capital in Wall Street and the institutionalization of large scale financing in the New York Stock Exchange. Most of the major railroads were over-capitalized and heavily burdened with bonded debt. Many had over a third of gross revenues absorbed by interest payments, and some notable railroads such as the Reading or the Union Pacific paid out half of the gross income on interest (Manual of Statistics). This was money flowing from the farmers and consumers into the hands of Wall Street. The development of large national corporations would have been impossible without the services and capital of the centralized infrastructure, The stock exchange grew up around rail stocks. As late as 1890 three-fourths of all stocks listed on the New York Exchange were

railway (Manual of Statistics, 1890). Most of the others were coal and telegraph. This was the institutional frame on which the monopoly sector was built.

The second phase started before the completion of the first. The typical industrial monopoly would have been impossible without special relations with either the railroads, the bankers or both. Many of the early concentrations, including Standard Oil, the meat packers and the sugar trust, achieved dominance in their industry through special relationships with the railroads, most notably rebates and drawbacks.[15] These three industries were also notable for their development of export activity, achieved with the willing assistance of the national government. These combinations were formed without the watering of stock that characterized later consolidations. For example the capital stock of Standard Oil increased less than $2 million throughout this period.[16]

Other combinations, especially during the merger wave of 1897 to 1904 were undertaken by promoters who mobilized capital centralized by the railroads. The institutional frame for this was the New York Stock Exchange, and the large New York banks, trust companies and brokers. These consolidations, such as the International Paper Company and the International Harvester Company, involved the cooperation of a few industry leaders with financial leaders. Lucrative offers and the threat of extinction persuaded most firms in a merging industry to sell to merger promoters. Leadership in the new combination was shared by industry leaders, representatives of the financial community, and other individuals who had desirable connections. This is the source of many interlocks found in the later time period.

After the turn of the century, the industrial gains became less dependent on the infrastructure core. Standard Oil was one of the first to become an independent financial power. The Rockefellers got themselves a family bank and started reinvesting their massive profits. The railroads had been sucked dry, by debts which

hung over them for years. While their machines and roadbeds were decaying without the money to improve them, highway transportation was being underwritten at public expense. Similarly petroleum, which was used initially for lighting and lubrication was undermining coal's place as the chief industrial and transportation fuel. Western Union had lost out to the Morgan backed ATT in their attempt to move into telephones and thereafter remained in the back rooms of the decaying train stations. This description is at variance with more conventional descriptions which describe a sequential process of different industries undergoing a similar process. Virtually all the debate about the causes of economic concentration assume that there is a single underlying process that explains equally well the development of railroads, petroleum, automobiles and electronic computers. By implication the process of elite development should be similar the process of elite development should be similar in each industry.

But I am arguing that there developed an infrastructure core (with government subsidation) that provided the institutional framework including the financial framework around which other industries developed and consolidated. The industrial elite that developed after 1890 was the creation of the early elite. Standard Oil did not develop and qualify the Rockefellers for inclusion into the elite net. But Standard Oil developed around the core and in relationship to the core. Today's monopoly sector grew from the core out. The different parts of the business elite are integrated not only because they share the same objective interests, but because they developed out of a common source and have been integrated from the beginning.

This paper has called on three conventional perspectives to examine the emergence of a national business in the U.S. in the years 1886 to 1906. Cohesion and centrality of the elite, the elitist/pluralist debate has treated as absent or present states have been treated here as variables. The theoretical questions

I have addressed have to do with the relationship of cohesion and centrality with other variables. Three perspectives led to different predictions about the relationship of cohesion and centrality with other variables. The prediction of the individual perspective that economic expansion and the development of large scale organizations would lead to a loosening of the elite was contradicted by the data. The most complete account of the emergence of the elite was found by synthesizing the elite perspective's emphasis on the primacy of a central core with the mobilization perspective's emphasis on the elite as representatives of mobilized organizations. Finally a new account of the development of the American business elite proposed that integration in the elite was a result of the historical emergence of the elite from an infrastructure and financial core which provided the institutional framework on which the monopoly sector was constructed.

TABLE 1

Total Capitalization and Percent of Total Capital Held by Four Largest Firms in 11 Sampled Industries, 1890, 1900, 1905

Top figure is capital in millions of dollars.[a]
Bottom figure is percent capital held by four largest firms.[b]

Industry	1890	1900	1905
Coal[c]	NA	NA	NA
	NA	NA	NA
Meat	$ 98.2	$ 173.9	$ 219.8
	16%	30%	43%
Agricultural Machinery	145.3	157.7	196.7
	24	27	69
Distilled Liquors	31.0	32.5	50.1
Telegraph	NA	NA	NA
	(95)[d]	(95)[d]	(95)[d]
Petroleum Refining	77.4	95.3	156.3
	(95)[e]	(95)[e]	(95)[e]
Lumber	557.9	400.9	517.2
	(5)[f]	(5)[f]	6
Railroad	4590.0	5804.0	6741.0
	9	16	13
Books	77.4	110.5	158.9
	13	33	8
Paper and Related Products	113.9	216.5	451.3
	(5)[f]	59	34
Sugar Refining	27.4	204.2	221.4
	(95)[e]	92	(95)[e]

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[a]Source: <u>Census of Manufactures, 1905</u>.

[b]Source: See text.

[c]Not in census. Industry controlled by railroads.

[d]Legal monopoly, Western Union.

[e]Computed figure over 100%. See footnote.

[f]Insufficient data. Industry is primarily small firms.

TABLE 2

Interlocking Directorates Among 11 Sampled Industries: 1901-1905

1. Coal	537										
2. Meat	1	60									
3. Agricultural Machinery	2	0	20								
4. Distilled Liquors	5	0	0	57							
5. Telegraph	25	2	0	0	124						
6. Petroleum Refining	7	0	0	0	2	116					
7. Lumber	8	0	0	0	2	2	41				
8. Railroad	76	2	4	3	41	15	17	797			
9. Books	6	0	0	0	2	0	2	2	48		
10. Paper and Related Products	5	0	0	0	4	1	1	10	1	181	
11. Sugar Refining	6	2	0	0	15	0	0	21	0	4	103
Total Interlocks:	201	7	6	8	93	27	32	191	13	26	48
(Industry):	1	2	3	4	5	6	7	8	9	10	11

Source: See text.

FOOTNOTES

1. Taussig and Joslyn argued that the lack of upward mobility was not inconsistent with achievement recruitment since the elite was hereditarily disposed to leadership.

2. Southern pine owners finally banded together in a trade association which undertook lengthy and only marginally successful litigation in the courts to combat the disparity.

3. See Hirsch (1975) for a discussion of the use of industry as a unit of analysis.

4. The sample is drawn from a list of 51 industries modified for my purposes from Evans (1943). The sampling technique is more appropriate for the purposes for which the data was originally collected than this one. Obviously some key parts of the national business elite are going to be missing. The most glaring omission is the steel industry. U.S. Steel was incorporated in 1901 as the first billion dollar corporation. Other important omissions are textiles, chemicals, and machinery, including electrical machinery. Wholesale, retail, agricultural, construction, finance, and public utilities were not included in the sample However, there are key people from all of these sectors in the sample. For a discussion of the officers and directors of the largest corporations in the country during this period. See Bunting (1972).

5. Alternative ways of identifying historical business elites have been: (1) to count only those listed, those identified as officers and directors from a stock exchange handbook (Taussig and Joslyn, 1932; Bunting, 1972); (2) to examine information on those listed in a collective biography such as the National Cyclopedia of American Biography (Mills, 1963), the Dictionary of American Biography (Bendix and Howton, 1962), or Who's Who (Jensen, 1973). The basic problem with these methods is that one does not know how representative a sample of all business leaders one is getting. The collective biographies are biased toward those individuals who were prominent in other fields or whose lives were journalistically interesting. The stock exchange handbook includes only those firms that were incorporated with a large enough supply of publicly available stock to be sold on the market. This did not include Standard Oil until 1899 when trust certificates were turned over to Standard Oil of New Jersey. Although I have not identified all the personnel in our industries, I am able to state to what extent the conclusions are representative of business leaders as defined here.

6. By 1906, information on the finances and personnel of the largest corporations is available for all industries in stock-exchange handbooks, the precursors of Standard and Poor's that we have today. But before 1890, these handbooks, which were the source of the bulk of the names used here, listed only railroads, telegraph and coal companies, which comprised virtually all the stocks on the larger exchanges. The process of bringing all parts of the economy into a few large stock exchanges is in itself a central part of the integration of the economy, but the lack of easily accessible information on directors in the early period complicates the researcher's task. But the biographical information from the NCAB covers the whole time span.

7. The alternative would have been to take the names for each time period and compute the links that were operative in that period. This latter alternative would have created a bias that overstated the difference between the industries that were on the stock exchange earlier, such as railroad and coal, and those that were not listed until late in the period. The alternative that I have taken, of crediting to an industry the links for a director that sat in the industry at any time, underestimates the difference. It underestimates the difference for those industries that became integrated through inclusion of outside people more than for those that became integrated by the inclusion of their people into other sectors. An example of the industry that became integrated through the inclusion of outside people is that of agricultural machinery, which with the creation of International Harvester acquired representatives of the financial community that underwrote the merger. But the older leaders of the industry did not gain very many links themselves. Paper would also fit this description. Industries that became more integrated through having their leaders acquire new links would be estimated more accurately by this procedure. These industries would include beef, petroleum or sugar.

8. There were some boot and shoe directors identified from reading Shoe and Leather Reporter, but their biographies did not appear in the NCAB. Although I was unable to find other connections of the directors of these industries, the directors of other industries rarely were identified as having links with these two industries.

9. There were a few small monpoloies, such as the cotton seed oil trust that did not become integral to the emerging elite.

10. See Universities-National Bureau Committee for Economic Research, 1955, Scherer (1971) and Shepherd (1970) for discussions of the various measures of economic concentration. They agree that this measure is generally the easiest to obtain from readily available information and is correlated on the order of .8 and .9 with other more sophisticated measures such as the Gini Index.

11. In computing the concentration ratios two problems arose: (1) In some industries for some years, I could not find capitalization data for four companies over a million dollars. I arbitrarily set the ratios at 5% for those industry years. That certainly overstates the true value, but this overstatement is methodologically more conservative than understatement. (2) The figures that a company reports to the census represent only that part of the enterprise that is in a particular industry. E.g., If a sugar company capitalized at $100 had 10% of that invested in the production of barrels they would report $90 capital for sugar and $10 for cooperage. Since most of the companies are overwhelmingly in one industry this presented no systematic problem. But in the very concentrated industries the computed ratio in a few cases exceeded 100%. This was comfortably attributed to the reporting procedure in all cases except the liquor industry for 1900, when the computed figure exceeded 200%. A possible explanation is the inclusion of extensive marketing subsidiaries in the whiskey trust capitalization. For all the cases of ratios over 100%, the figure was set at 95%. This figure is in practice indicative of virtual monopoly, but the 5% from the absolute limit is maintained as the practical limit at the upper and lower end of the scale.

12. This is not the stunning increase that I had expected. This may be due to methodological decisions made in data collection. There are ways that I can massage the data to solve this question, but it is beyond the scope of this presentation.

13. The meat packing industry during the period saw the legal incorporation of Armour and Swift from privately owned companies and the development of the four other members of the "Big Six" oligopoly assailed by the muckrakers. In agricultural machinery, International Harvester, with the backing of J.P. Morgan and later John D. Rockefeller, consolidated the biggest harvester companies in the country, while the American Seeding Machine Company gained control of another part of the industry. The biggest increase in the concentration ratio was found in the paper industry, which changed from a nearly perfect competitive set of markets in 1886 to a clear division of markets, each dominated by a giant corporation, such as International Paper for newspaper, American Writing Paper for stationery, U.S. Envelope and others.

14. Such as New York's Union League or Pittsburgh's Duquesne Club.

15. They each had cordial relations with bankers and at times used these to their advantage, but the basic dynamic was in sales rather than financing.

16. The Sugar Trust, when it was changed into the American Sugar Regining Company in 1891, was watered, but it had operated as a successful combination for four years and did not incorporate until the government pressured it to under the Sherman Anti-Trust Act of 1890.

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